

## **CHAPTER IV**

### **DATA EXERCISE**

**A Rapid Assessment on Malaria Control Activities  
and Explore Socio-Economic, Knowledge, Attitude and Practice  
Towards Malaria on Pregnant Women  
in O'Smarch Village, Samrong District, Oddar Meanchey  
Province, Cambodia.**

#### **4.1 Introduction**

Oddar Meanchey is a new province announced by the Royal Cambodia Government in 1998; it's located at northwest of Cambodia. During the civil war inside the country in 1997, about 20,000 civilian and soldiers escaped to seek asylum in Thailand. After peace returned back to Cambodia in early of 1999, the refugees were organized by UNHCR to return back to their country. Even though Samrong district was heavily mine land but this area was one of the most popular which were chosen by refugees to settle down.

Currently Samrong district has population approximately 34557 (source: district level), about 50% were returnees from the refugee camps and UNHCR was responsible for their safe returning and resettlement. Hence, the rapid assessment was conducted by the Local Cambodia Research Team (funded by UNHCR) after they early returning home in order to find out base line data that recommended the need of the population in the area.

The result found that malaria was the main problem on health aspect, and Malteser was called for set up the medical assistant program in this district as follow the returnees by UNHCR. Due to the country was under civil war for many years that consequently the health structure was destroyed and not except at Samrong district. There was only one functioning health care service in the main district at Samrong and not at all for the people in the semi and remote area of Samrong district. Hence, Mateser was called again by UNHCR to work inside Cambodia followed the returnees. At that time Malteser established six roads side clinics base on laboratory service and malaria treatment. As review from monthly report from September in 1999- April 2000, malaria in pregnant women was one of the priority of the health care program. Hence Malteser staff and I initiated the proposed study on Malaria in Pregnant women in order to find the appropriate strategy to control malaria in this target group.

In this chapter, I aim explore the socio- cultural and economic, environment and KAP of pregnant women towards malaria in Samrong district, Oddar Meanchey Province, through a rapid assessment, in order to develop appropriate interventions to control malaria in this area. This chapter will describe the process of assessment and

discuss about finding, while the limitation and lessons learned will be addressed as well.

## **4.2 Objective**

### **General objectives:**

- To test instruments for data collection techniques
- To identify the existing malaria control activities in the study area.
- To explore socio-economic, cultural, environment and KAP of pregnant women towards malaria.

## **4.3 Methodology**

### **4.3.1 Study Design**

A rapid assessment was applied to determine malaria in pregnant women and its pattern. Data was collected by qualitative and quantitative approach in order to get broad and deep information. Non-participant observation technique, in-depth interview key informants and focus group discussion among pregnant women were used as qualitative approach for the purpose of triangulation while interview pregnant women with structured questionnaire was used for quantitative approach with convenience sampling technique.

### **4.3.2 Study Location**

The rapid assessment took place in O'Smarch village, Malteser O'Pork Health Center, Samrong Referral Hospital and Public Health Office in Samrong district, Oddar Meanchey province, Cambodia.

### **4.3.3 Study Duration**

The rapid assessment was carried out from 24<sup>th</sup> January – 4<sup>th</sup> February 2001.

### **4.3.4 Sampling**

- A convenience sample was used in selecting key informants for in-depth interview as well as choosing participants for focus group discussion.
- A convenience sample also was used in selecting pregnant women for interview with the structured questionnaire on KAP towards malaria.

### **4.3.5 Sample Size**

Four techniques of data collection were use for the study. In different used techniques had different sampling.

### 1) **In-depth Interview with Key Informants**

Key informants were composed of 5 groups of participants:

- **Pregnant women:** 3 pregnant women were in-depth interviewed for the purpose of identifying the women's habit behavior and beliefs during pregnancy especially on malaria treatment.
- **Traditional birth attendants (TBA):** 2 TBAs were in-depth interviewed on health service and their beliefs which may influence pregnant women's behavior especially on malaria.
- **Midwife:** 1 midwife from Malteser O'Pork health center was interviewed on pattern of health care service for pregnant women and their major health problems.
- **Medic:** 2 medics from Malteser O'Pork health center were interviewed on pattern of health care services and major health problems in the area and malarial drug resistance.
- **Medicine retailers/shop keepers:** 2 medicine seller/shop keepers were interviewed on drug lists, consumer's behavior and his/her practice on malaria treatment.

**2) Focus Group Discussion:** 12 pregnant women were participated with focus group discussion on their perceived health problems during pregnancy and health seeking behavior.

**3) Interview with Structured Questionnaire:** 33 pregnant women were interviewed by trained Malteser's health staffs on their knowledge, attitude and practice towards malaria, including demographic.

#### **4) Observation**

The purpose of observation is to identify factors affecting malaria transmission such as physical surrounding and housing condition of the village, real behavior of the people in terms of preventive behaviors and treatment seeking behaviors.

#### **4.3.6 Instruments and Data Collection**

The research instruments were open-ended question, observation checklist and a structured questionnaire. They were used in different groups of participants for different purpose as following:

- Open-ended questions were used for in-depth interview for 5 groups of participants as mention as above.
- A structured questionnaire, which consisted of three parts: 1) Information of the respondents' socio-demographic characteristics and environment 2) Information of the respondents' knowledge, attitude towards malaria and prevention 3) Information of the respondent's practice and treatment seeking behavior towards malaria, was used to interview pregnant women.
- Observation checklists were used during field visit and interview participants.

#### **The data was collected under following procedure:**

- Contact Malteser Health Developing Program in Samrong district, Oddar Meanchey, Cambodia, the Public Health Devison, Oddar Meanchey, Cambodia.

- Training of Malteser health staffs by the author to conduct the focus group discussion and the questionnaire.
- Contact head of O'Smarch village for corporation.
- Data were collected by Malteser health staffs under the guidance of the author.

#### **4.4 Field Activities**

A rapid assessment was done on 24 January – 4 February 2001 at O'Smarch village. The field activities were done by the author and the team from Maltser Cambodia Health Care Program which was compost of one midwife, one health educator, one translator, and one driver. The field activities were conducted base upon the data collection techniques.

*In-depth interview* with key informants was done for 3 days by the author and one translator.

*Focus group discussion* was done at 11 – 12 am. on 29 January 2001 with one facilitator, two co-facilitator and one observer (the author) at a house which is located in the central part of the village and convenience for all twelve participants to be there. All participants were arranged to sit as a circle included a facilitator. Two-note taker and one observer (the author) sat outside the circle but in still kept the distance that

could hear and saw facial expressions. The discussion was done base upon the guideline (see annex).

*Interview with structured questionnaire and observation checklist* was done on 26 – 28 January 2001 in the same village. The interview team was divided in two teams (each of the team compost of two people) and went to interview in different zone by convenience sampling method.

For **observation**, due to the security regulation of Malteser, go out to the field at nighttime is prohibited. Hence the real practice behaviors towards malaria prevention of the people at nighttime were not seen (remarked).

*Review of secondary data* was done in between during 24 January - 4 February 2001. The documents and records from O'Pork health post, Malteser health developing project and Public Health Department of Odddar Meanchey province were reviewed.

#### **4.5 Data Analysis**

- 1) A descriptive qualitative analysis has been used for observation, in-dept interview and focus group discussion.
- 2) A simple descriptive quantitative analysis has been applied for frequency calculation and distribution by using SPSS software for the structured questionnaire.



## 2.1 Scoring

The knowledge part of the questionnaire consisted of three questions, which included mainly general question about malaria and prevention. The attitude part consisted of six statements about malaria and prevention. Three scales (agree, disagree and uncertain) were set for the attitude in order not to confuse the respondent.

For knowledge of malaria and prevention: “1” score was given for each correct answer and “0” for any incorrect answer or response of no idea.

For attitude: “2” score was given to each correct attitude, “1” to uncertain and “0” to incorrect attitude.

## 2.2 Score classifying

|            |                     |              |
|------------|---------------------|--------------|
| Knowledge: | low knowledge:      | 0-10 scores  |
|            | fair knowledge:     | 11-13 scores |
|            | high knowledge:     | 14-16 scores |
| Attitude:  | positive attitude:  | 8-10 scores  |
|            | uncertain attitude: | 6-7 scores   |
|            | negative attitude:  | 0-5 scores   |

## 4.6 Findings

All data were collected in different places in Samrong district through:

- In-depth interview with key informants; 1) medic at Malteser O’Pork health center, 2) midwife at Malteser O’Pork health center, 3) pregnant women, 4) traditional birth attendants, 5) medicine sellers/shop keepers.
- Focus group discussion with 12 pregnant women.
- Observation during field visits.
- Structured questionnaire with 33 pregnant women.

### 4.6.1 Result of Qualitative Approaches

#### **Introduction of the village**

O’ Smarch village is located at Samrong district, Oddar Meanchey province, 46 km far from Oddar Meanchey municipality to the northwest. The majority is Khmer ethnic group, even though some people are half-blood but they claimed to be real Khmer (UNHCR survey, 1999). Total population is 4723 (2328 male, 2395 female) and 1155 families (source: village level, Dec 2000). There is forest and mountains lying surround on the northeast of the village. 50% of the population were returnees from the refugee camps in Thailand and returned back under an assistant of UNHCR. Due to the land was heavily mines area and there is lack of the natural water resource inside/nearby the village, hence the agriculture is limited. Vegetable garden is rarely seen around the houses. However farmer and woodcutter are the main occupation of the people but they have to go far away about 4 –5 km from their residents (source: UNHCR survey, 1999).

According to open the border market and casino, consequently created some labor jobs for the local people to be construction men. However these types of job do not generate regular income. Another career is civil servant as a soldier is found in this area. This career generates more regular income but it is very low (700 bath/month). The poverty is one big problem of the population here.

During war period before 1993 and in 1997-1999, all facilities were destroyed including school and health center. Up to now there is no existing health center in this village while the two schools are on the process of building and not function yet. Also a small market is not seen as well.

According to no health center available in the village, therefore the people use self-treatment as a first choice and some of them come down to the neighbor village to seek health care from Malteser O' Pork health post. Due to geographic and no public transportation to the next village, thus the cost for seeking health care in O'Pork health post must add transportation fee, which is about 40-60 bath/round trip by motorbike or 150 by car. This is a limitation of utilizing health service from the health post.

#### **4.6.1.1 Findings from In-depth Interview**

##### **In-depth interview pregnant women:**

Three pregnant women were interviewed and all of them are at the second trimester of pregnancy. One said that nausea and vomiting is the most problem for her now while the rest two claimed not to have any problem on health. All of them refused about any prohibited food and behavior during pregnancy. In case of sick, first

of all, they went to the medicine shops. Some time they requested medicine themselves and sometime consulted with the medicine seller, it depended on the illness. During pregnancy they claimed to concern more about the medicine using but still go to use the service at the medicine shops. Three of them never been for Anti Natal Care (ANC) clinic at O'Pork health post.

**In-depth interview medicine retailer/ clinic owner:**

There are about 13 medicine shops including clinic in the village. About 8 of them are small size and attached with consumable goods in the same shop while 5 are bigger and have more medicines display in the cupboards. 3 of 5 big one have microscopes. The interviews were done with one big medicine shop owner, one small medicine shop owner and one clinic owner.

*At the small medicine shop:*

The retailer is a daughter of the owner of the shop. She is 20 years old, graduated at grade 5 and has no previous training education about medicine before. She has been involved in medicine selling business about 8 months. The medicine such as paracetamol, Tiffy, Decolgen and antibiotic are available here. She claimed not to sell anti malarial drug in her shop. She said that all clients who come to buy medicine here prescribe medicine by themselves. Most common illness was fever, cold and stomach pain.

*For the big medicine shop:*

This shop has various kinds of medicines in the cupboards in front of the shop including microscopy. The owner is a couple at age 23 years old (wife) and

28 years old (husband). They moved from Bratabong to run a business here. At early stage of interview the husband was not at home thus the author interviewed only the wife's background. She graduated at grade 12 and has been settle down and sell the medicine here for 1 year. She said that she got train from her relative who sells the medicine in Siemreap. There are many kinds of antibiotic such as ampicillin, bactrim, metronidazole available. Similarly with the first shop, she claimed not to sell anti malarial drugs here. And from her experience the best drug to use for malaria is artesunate and mefloquine. At the end her husband came back and looked unhappy with us and tried to cut all what his wife said especially about malarial drugs. Probably he may think that we came from Malteser to check the medicine in the market whether it is stolen one or not.

*The owner of the clinic:*

This clinic is located almost the end (northern part) of the village close to the forest. This clinic is belonged to a couple at middle age (35- 45 years old) and moved from Phnom Phen to settle down here for 2 years to run the clinic business. The husband said he was a health personal and work in Phnom Phen before with government and his wife got train from her relative to be a midwife.

There were many injection medicines in this clinic-included paracetamol, syntocinol and quinine. Most of cases were treated by him was malaria. By last year he has seen about 30-40 cases of malaria. He did prescribe medicine by signs and symptoms, no laboratory test. Quinine and tetracyline are the main treatment for malaria if clients did not get better he suggested them to go to O'Pork clinic.

For the wife, she has responsibility for delivery service. She said that she did delivery about 15 cases for last year and non-of them had complication. There is no service for anti natal care and she never gives any health messages to her clients regards to pregnancy.

#### **In-depth interview Traditional Birth Attendant (TBA)**

One TBA was interviewed: she was a widow and living together with her daughter and family here for 3 years. She is 65 years old and has been involved for this business for about 20 years. She said that she got training from her relative who was a TBA before. By last year she did about 15 cases of delivery and had no complication with anyone. She refused to have any traditional belief on food/herb for pregnant woman and she never advised them about prohibited food or medicine.

#### **In-depth interview Medic/Midwife Malteser O'Pork Health Post:**

The health service here is aimed to provide not only for the population in O'Pork village but also in O'Smarch village. But since the beginning there was a problem about land in O'Smarch and thus Malteser asked for the permission from the government to establish a health post in O'Pork but at the end of the village and close as much as possible with O' Smarch village.

At the beginning the service was free of charge and later has been changed to have service fees six months ago in order not to parallel with the government service in elsewhere within the country. The fee start with 20 bath for the first visit then if the client come back within 2 weeks with the same disease, there will

be no extra charge. However for Anti Natal Care clinic is different, client will pay only for first visit and continue using free service until delivery.

Most of the health problems here are URI, diarrhea. Malaria cases still presented here included in pregnant women. The national malaria guideline for treatment is adopted here. Some pregnant women were positive again after treated with quinine in one month. The drug resistant is not clarified here due to most of patients did not come for follow up especially pregnant women. They did come mostly only the first time to get tetanus (most of them are not primigravida) and later delivery at home.

#### **4.6.1.2 Findings from Focus Group Discussion**

The focus group discussion was done in the area of a house in the middle of the village. Twelve pregnant women were participated. All participants are at age between 22-35 years old. Most of them are housewives. No one of them is a civil servant/teacher/health worker.

#### **Findings:**

##### **A) Health problem of pregnant women**

The common illness of pregnant women in this community are common cold, weak and fever. One of participants said that malaria is a health problem because she just had malaria one month before the focus group discussion was conducted. Six participants stated of having malaria before they have become pregnancy. Eight participants knew that malaria is caused by mosquito bite and another four added that

consuming unclean food is also a cause of malaria transmission. All of them knew that fever, headache, chilling and sweat are the signs and symptoms of malaria.

One of participants who had malaria again during this pregnancy said that she did not have any signs but she went for ANC at health post. She got tested for malaria there and the result shown was positive and thus she got treatment for 7 days with quinine and never returned back to ANC clinic again.

#### **B) Treatment seeking behavior**

Three of participants said that there are medicine shops close to their houses. There they could get various kinds of medicine including anti-malarial drugs such as quinine, chloroquine and mefloquine. In case of being sick and not that serious they went to buy medicine at the shop first because it was more convenient and saved money for transportation to the health post. While another three participants said during pregnancy if they are sick they prefer to see a medic at health post to ensure safety for the baby in case they need to take medicine.

#### **C) Prevention of malaria**

Six of participants knew that using bed nets could prevent malaria. All participants stated they had bed nets, however they did not use them regularly because sometimes the weather was too hot and they could not really sleep under them. Four participants had experience staying overnight in the field and forest. They did not use bed nets because they left them for their kids at home.



#### **4.6.1.3 Findings from Observations**

Observation is one of the data collection methods used for qualitative approached. It was done in O'Smarch village by using observation guideline. The aim was to identify socio-economic and environment such as condition of the house and its surrounding, geographic of the village and people behavior in daily life on practice towards malaria prevention.

##### **A) House condition**

Ten houses of pregnant women were observed. Half of all observed houses were built like cottages with wooden walls mixed with thick papers and plastic sheets, and leaf roofs while another half were built with wooden walls only and have tin roofs. Non of window screens were found in all houses included doors. The ceiling was not found in any houses.

##### **B) Demographic**

The clusters of the households were found densely along the main road inside the village (see: appendix, map). On the right side of the main road was more crowded than the left side. Up to the northern part of the village there are clusters of small houses and having forest nearby. The people who lived in that area looked poorer than the people who lived in the south.

##### **C) Physical setting**

Among ten observed houses, non-of them had private sleeping room. Five big houses had small partitions inside between bed area and the rest. Every house

had bed nets hung and two houses were seen with two bed nets. Most of nets looked quite old and many holes. During observation on daytime, mosquitoes were seen inside the houses.

#### **D) Surrounding of the house and domestic pet**

Not all houses had pet. There were three pigs in one observed house. Many dogs were seen walking on the roads but not inside the houses. Some chickens were seen mostly in the area of the houses, which were located the north. The houses in the north of the village looked smaller and poorer than the houses in the south. There was no lake or ponds in the village. But at the central part of the village there was a small drainage stream and in some parts had stagnant water and mosquito larva were found here too. The vegetable garden was not seen around or near by the houses.

#### **E) Location of health service and clinic and other facilities**

There was no government health post existing in the village even a small market. But there was a big market close to the border between Thai and Cambodia outside the village. Two public schools are on process of building and not function yet. There were 13 medicine shops, all five big one were located at the central and southern part of the village which seems to be better in terms of economic status. There was one existing office of a NGOs who has been working on HIV/AIDS education.

### **4.6.2 Result of Quantitative Approach (KAP structured questionnaire)**

#### **4.6.2.1 Demographic Characteristics of Respondents**

**Table 4.1 : Distribution of age of respondents**

| <b>Age of respondents</b> | <b>frequency</b> | <b>percentage</b> |
|---------------------------|------------------|-------------------|
| 17 - 20 years old         | 6                | 18.2              |
| 21 - 25 years old         | 7                | 21.2              |
| 26 - 30 years old         | 8                | 24.2              |
| 31 – 35 years old         | 9                | 27.3              |
| 36 – 39 years old         | 3                | 9.1               |
| <b>Total</b>              | <b>33</b>        | <b>100</b>        |

Evidently about 70 % of respondents are age between 21 – 35 years old.

**Table 4.2: Distribution number of children of respondents**

| <b>Number of children</b> | <b>frequency</b> | <b>percentage</b> |
|---------------------------|------------------|-------------------|
| none                      | 2                | 6.1               |
| 1 - 2                     | 18               | 54.6              |
| 3 - 4                     | 8                | 24.2              |
| 5 - 6                     | 5                | 15.1              |
| <b>Total</b>              | <b>33</b>        | <b>100</b>        |

Only 6 % of respondents are primigravida who have more risk if they get malaria. However this number may not represent for the entire population due to small sample size.

**Table 4.3: Distribution number of abortion and causes**

| Characteristics                 | frequency | percentage |
|---------------------------------|-----------|------------|
| <b>Abortion</b>                 |           |            |
| ▪ None                          | 20        | 60.6       |
| ▪ One time                      | 4         | 12.1       |
| ▪ Two times                     | 9         | 27.3       |
| <b>Total</b>                    | 33        | 100        |
| <b>Cause of fist abortion</b>   |           |            |
| ▪ Accidental                    | 11        | 84.6       |
| ▪ Intended abortion             | 1         | 7.7        |
| ▪ Spontaneous abortion          | 1         | 7.7        |
| <b>Total</b>                    | 13        | 100        |
| <b>Cause of second abortion</b> |           |            |
| ▪ Accidental                    | 5         | 55.6       |
| ▪ Intended abortion             | 1         | 11.1       |
| ▪ Spontaneous abortion          | 3         | 33.3       |
| <b>Total</b>                    | 9         | 100        |

40 % of respondents have had experienced for abortion and 27 % of respondents have had two times abortion. This is one factor to increase risky of abortion in case they get malaria during pregnancy.

**Table 4.4 : Distribution of religion**

| Religion     | frequency | percentage |
|--------------|-----------|------------|
| Buddhism     | 32        | 97.0       |
| Christian    | 0         | 0.0        |
| Islam        | 1         | 3.0        |
| <b>Total</b> | 33        | 100        |

This table showed homogeneous of religion in this area which corresponds with the country data.

**Table 4.5 : Distribution of the size of family**

| <b>Size of family</b> | <b>frequency</b> | <b>percentage</b> |
|-----------------------|------------------|-------------------|
| Small ( 2-3 persons)  | 16               | 48.4              |
| Medium ( 4-5 persons) | 12               | 36.4              |
| Big ( 6-8 persons)    | 5                | 15.2              |
| <b>Total</b>          | <b>33</b>        | <b>100</b>        |

The family size is ranged between 2-8 persons. More than 50% of respondents stayed in medium and up to big families. These numbers shows the quantity needs of bed nets in each family to prevent malaria.

**Table 4.6 : Distribution of level of education**

| <b>Level of education</b>       | <b>frequency</b> | <b>percentage</b> |
|---------------------------------|------------------|-------------------|
| Cannot read/write               | 15               | 45.5              |
| 1-3 year of schooling           | 12               | 36.4              |
| 4-6 year of schooling           | 4                | 12.1              |
| More than six year of schooling | 2                | 6.4               |
| <b>Total</b>                    | <b>33</b>        | <b>100</b>        |

The level of education showed that 45 % of respondents cannot read and write and 36 % were educated primary school level, which related to insufficient reading and writing. This is an important factor to concern in developing materials and media to promote malaria prevention in this target group.

**Table 4.7 : Distribution of occupational**

| <b>Type of occupational</b> | <b>frequency</b> | <b>percentage</b> |
|-----------------------------|------------------|-------------------|
| Laborer                     | 2                | 6.1               |
| Farmer                      | 4                | 12.1              |
| Woodcutter                  | 8                | 24.2              |
| House wife                  | 14               | 42.4              |
| Shop seller                 | 4                | 12.1              |
| Rented motorbike            | 1                | 3.0               |
| <b>Total</b>                | <b>33</b>        | <b>100</b>        |

Type of occupational is important for understanding malaria transmission pattern in order to develop appropriate malaria prevention method. Evidently 36 % of participants are farmer and woodcutter. It shows their working places relate to field and forest, which probably are shelters for malaria vectors and thus increase risk for malaria transmission.

**Table 4.8 : Distribution of income level**

| <b>Income level (bath/year)</b> | <b>frequency</b> | <b>percentage</b> |
|---------------------------------|------------------|-------------------|
| Extremely poor (less than 5000) | 10               | 30.3              |
| Very poor (5000-20,000)         | 15               | 45.5              |
| Poor (more than 20,000-40,000)  | 6                | 18.2              |
| Fair (more than 40,000-60,000)  | 1                | 3.0               |
| Good (more than 60,000-80,000)  | 1                | 3.0               |
| <b>Total</b>                    | <b>33</b>        | <b>100</b>        |

Income level is represent power of accessibility to health care service and purchasing bed nets and other individuals prevention method such as coil, repellent and spray. The table shows that 94 % of participants are poor-extremely poor. Therefore self-treatment would be a first choice for them in order to safe cost and low practice of prevention may be applied here due to lack of materials.

**Table 4.9 : Distribution of length of stay**

| <b>Length of stay</b> | <b>frequency</b> | <b>percentage</b> |
|-----------------------|------------------|-------------------|
| Less than 6 month     | 3                | 9.1               |
| 6 months-1 year       | 7                | 21.2              |
| More than 1 yr.-2 yr. | 14               | 42.4              |
| More than 2 yr.-3 yr. | 3                | 9.1               |
| More than 3 yr.       | 6                | 18.2              |
| <b>Total</b>          | <b>33</b>        | <b>100</b>        |

Even though the majority of participants have been stay here for more than 1 year. However still 30 % of participants are new comer, which probably have low immune for malaria. Hence the chance to get malaria in this group is high and need to be concerned as well.

**Table 4.10 : Distribution of house's location**

| <b>Location of house</b> | <b>frequency</b> | <b>percentage</b> |
|--------------------------|------------------|-------------------|
| By forest and stream     | 1                | 3.0               |
| By forest and no stream  | 20               | 60.6              |
| No forest and by stream  | 0                | 0.0               |
| No forest and no stream  | 12               | 36.4              |
| <b>Total</b>             | <b>33</b>        | <b>100</b>        |

According to forest is a shelter for malaria vector and also stream can be a good breeding site for vector. Therefore the location of the house is reflect risky of malaria transmission. From the interview, more than 60% of participants have house close to forest, thus this number is indicate the population at risk of getting malaria.

**Table 4.11 : Distribution of mosquito screen available in the house**

| <b>Net available</b> | <b>frequency</b> | <b>percentage</b> |
|----------------------|------------------|-------------------|
| Yes                  | 0                | 0                 |
| No                   | 33               | 100               |
| <b>Total</b>         | <b>33</b>        | <b>100</b>        |



Non of participants replied to have mosquito screen in their house.

**Table 4.12 : Distribution of type of material for house construction**

| <b>Type of material</b>              | <b>Frequency</b> | <b>Percentage</b> |
|--------------------------------------|------------------|-------------------|
| Three walls uncompleted construction | 4                | 12.1              |
| Bamboo construction, leaf roof       | 1                | 3.1               |
| Wooden house                         | 28               | 84.8              |
| Concrete house                       | 0                | 0                 |
| <b>Total</b>                         | <b>33</b>        | <b>100</b>        |

All of participants have houses, which constructed from Bamboo and woods and some even have houses which uncompleted walls. This leads to possible chance for mosquito to come in their houses easily.

#### **4.6.2.2. Knowledge, Attitude and Practice towards malaria**

This part shows the distribution of the scores on knowledge and attitude as well as the median and mean of knowledge and attitude. For the knowledge the maximum scores could be reached is 16 while the maximum score for attitude could be 10.

**Table 4.13 : Distribution of level of knowledge**

| <b>Level of knowledge</b> | <b>Frequency</b> | <b>percentage</b> |
|---------------------------|------------------|-------------------|
| Low ( 0-10 scores)        | 28               | 84.8              |
| Fair (11-13 scores)       | 5                | 15.2              |
| High (14-16 scores)       | 0                | 0                 |
| <b>Total</b>              | 33               | 100               |

Note: Mean: 8.2, S.D: 3.1, Median: 9, Max: 13 and Min: 0

Most of participants (84.8%) had low level of knowledge. The minimum score was given “0” with one participant as well as the maximum score was given “13” with also one participant. The reason of these two participants probably is due to experience of having malaria.

**Table 4.14 : Distribution on knowledge towards cause and signs of malaria, and prevention**

| Question  | Yes |      | No |      | Do not know |      | Total |     |
|---|-----|------|----|------|-------------|------|-------|-----|
|   | F   | %    | F  | %    | F           | %    | F     | %   |
| <b>A. Malaria cause from...</b>                         |     |      |    |      |             |      |       |     |
| 1) working with no rest                                 | 3   | 9.1  | 11 | 33.3 | 19          | 57.7 | 33    | 100 |
| 2) ghosts   | 1   | 3.0  | 20 | 60.6 | 12          | 36.4 | 33    | 100 |
| 3) eating uncleanness food and unbilled water           | 16  | 48.5 | 11 | 33.3 | 6           | 18.2 | 33    | 100 |
| 4) mosquito bite  | 25  | 75.8 | 2  | 6.1  | 6           | 18.2 | 33    | 100 |
| 5) going to the forest and stay until late evening      | 29  | 87.9 | 0  | 0    | 4           | 12.1 | 33    | 100 |
| 6) not using bed nets                                   | 28  | 84.9 | 1  | 3.0  | 4           | 12.1 | 33    | 100 |
| 7) coughing spread from person to person                | 12  | 36.4 | 7  | 21.2 | 14          | 42.4 | 33    | 100 |
| <b>B. Signs of malaria.....</b>                         |     |      |    |      |             |      |       |     |
| 1) headache, body ache                                  | 25  | 75.8 | 2  | 6.1  | 6           | 18.2 | 33    | 100 |
| 2) fever and chill                                      | 27  | 81.8 | 0  | 0    | 6           | 18.2 | 33    | 100 |
| 3) yellow urine   | 10  | 30.3 | 5  | 15.2 | 18          | 54.5 | 33    | 100 |
| 4) bitterness in the mouth                              | 12  | 36.4 | 4  | 12.1 | 17          | 51.5 | 33    | 100 |
| <b>C. How malaria can be prevented...</b>               |     |      |    |      |             |      |       |     |
| 1) not working too much under the sun                   | 3   | 9.1  | 8  | 24.2 | 22          | 66.7 | 33    | 100 |
| 2) taking drugs regularly                               | 24  | 72.7 | 2  | 6.1  | 7           | 21.2 | 33    | 100 |
| 3) keeping mosquito away: by using coil, repellent etc. | 26  | 78.8 | 3  | 9.1  | 4           | 12.1 | 33    | 100 |
| 4) drainage of surrounding/eliminate water collection   | 22  | 66.7 | 5  | 15.2 | 6           | 18.2 | 33    | 100 |
| 5) sleeping under the bed nets                          | 28  | 84.8 | 2  | 6.1  | 3           | 6.1  | 33    | 100 |

For the cause of malaria: even though 75% of participants know that malaria causes from mosquito bite. However there were still 36% of participants did not know whether malaria causes from ghost or not and also almost 50% of participants believed that eating unclean food and unbilled water is a cause of malaria.

For malaria prevention: most of the participants could tell how to prevent malaria, however 20 % of participants did not know that avoiding from mosquito bite by using coil or repellents is one of the prevention method of malaria.

**Table 4.15 : Distribution degree of attitude towards malaria**

| <b>Degree of attitude</b> | <b>Frequency</b> | <b>Percentage</b> |
|---------------------------|------------------|-------------------|
| Positive ( 8-10 scores)   | 2                | 6.1               |
| Uncertain (6-7 scores)    | 13               | 39.4              |
| Negative (0-5 scores)     | 18               | 54.5              |
| <b>Total</b>              | 33               | 100               |

Note: Mean: 5.4, S.D: 1.6, Median: 5, Max: 9 and Min:1

For the attitude: a full score could be “10” scores. For the result of study score was ranging from the lowest which was “1” to the highest score which was “9” scores. Only 6% of participants have positive attitude while 54% of participants have negative attitude towards malaria. This probably affects to the real practice of participants on malaria prevention and treatment seeking behavior.

**Table 4.16 : Distribution on attitude towards malaria and prevention.**

| Question  | Agree |      | Disagree |      | Uncertain |      | Total |     |
|---|-------|------|----------|------|-----------|------|-------|-----|
|   | F     | %    | F        | %    | F         | %    | F     | %   |
| 1) Malaria cause from ghost                                   | 1     | 3.0  | 19       | 57.6 | 13        | 39.4 | 33    | 100 |
| 2) Malaria cannot be cured                                    | 26    | 78.8 | 3        | 9.1  | 4         | 12.1 | 33    | 100 |
| 3) Malaria is not a serious disease                           | 27    | 81.8 | 3        | 9.1  | 3         | 9.1  | 33    | 100 |
| 4) Pregnant women can even die from malaria                   | 25    | 75.8 | 1        | 3.0  | 7         | 21.2 | 33    | 100 |
| 5) Using bed nets regularly can prevent yourself from malaria | 27    | 81.8 | 3        | 9.1  | 3         | 9.1  | 33    | 100 |

From the result in the table above presents that most of participants answered that pregnant could die from malaria. However they also had controversial answer that malaria is not a serious disease. Furthermore almost 80% of participants perceived that malaria couldn't be cured and still almost 20% disagree and uncertain with using bed nets can prevent individuals from malaria.

**Table 4.17 : Distribution of practice towards malaria prevention and treatment seeking behavior**

| Practice behavior  | Regularly |      | Never |      | Sometimes |      | Total |     |
|--|-----------|------|-------|------|-----------|------|-------|-----|
|  | F         | %    | F     | %    | F         | %    | F     | %   |
| 1) Do you use bed nets?  | 32        | 81.8 | 0     | 0    | 1         | 3.0  | 33    | 100 |
| 2) Does everyone in the house sleep under bed nets?                                  | 31        | 93.9 | 0     | 0    | 2         | 6.1  | 33    | 100 |
| 3) Have you ever slept outside late in the evening/at night?                         | 1         | 3.0  | 0     | 0    | 32        | 97.0 | 33    | 100 |
| 4) If you stay outside in the evening or at night, do you use any prevention method? |           |      |       |      |           |      |       |     |
| ▪ Use bed nets   | 10        | 30.3 | 19    | 57.6 | 4         | 12.1 | 33    | 100 |
| ▪ Spray  | 2         | 6.1  | 30    | 90.9 | 1         | 3.0  | 33    | 100 |
| ▪ Coil   | 5         | 15.2 | 21    | 63.6 | 7         | 21.2 | 33    | 100 |
| ▪ Drive them away with cloth   | 7         | 21.2 | 10    | 30.3 | 16        | 48.5 | 33    | 100 |
| ▪ Fire woods/burn herbs  | 3         | 9.1  | 22    | 66.7 | 8         | 24.2 | 33    | 100 |
| Practice behavior  | Regularly |      | Never |      | Sometimes |      | Total |     |
|  | F         | %    | F     | %    | F         | %    | F     | %   |
| 5) What do you do when you (or your family) get fever/malaria?                       |           |      |       |      |           |      |       |     |
| ▪ Self medication with “Ya Chud”   | 6         | 18.2 | 20    | 60.6 | 7         | 21.2 | 33    | 100 |
| ▪ Self medication with “anti malarial drugs”   | 3         | 9.1  | 26    | 78.8 | 4         | 12.1 | 33    | 100 |
| ▪ Go to health post  | 22        | 66.7 | 3     | 9.1  | 8         | 24.2 | 33    | 100 |
| ▪ Go to see “Krue Khmere”  | 3         | 9.1  | 30    | 90.9 | 0         | 0    | 33    | 100 |

80% of participants replied that they sleep under bed nets regularly. While asking about using mosquito nets when they stay/sleep outside the house only 30% of participants used bed nets. This may be due to the other prevention methods on were applied or they did not concentrate on the question and answer or the question confused them.

For treatment seeking behavior: 66% of participants stated that they have been regularly to the health post when they got sick while 24% of them have been sometime and 9% of them never used the service. Self-medication with anti malarial drugs were applied regularly 9% and 24% were applied sometimes. This is in important for drug resistant issue in case they did not treat themselves properly.

#### **4.7 Discussion**

Malaria related very closed with socio-economic and environments. The study area is locate near the mountains and forest, therefore it is a good shelter for malaria vector. According to the land was a heavily mine land before, thus the land for cultivation is very limited, it depends on mine clearing which is taking place now. Therefore it was hardly seen vegetable garden around the community. However most of the people are still farmer and woodcutter. This included pregnant women and children. Due to no regular income, so the poverty is the main problem in the area, which affect to their quality of life especially on health aspect.

Almost 50% of participants cannot read and write. The reason probably because there were civil wars for many year in the country which destroyed many infrastructures and educational system. This level of education is may be one of the factors, which affect to their knowledge and believe towards malaria and health seeking behavior.

From the KAP survey on pregnant women towards malaria have found that most of participants knew that malaria transmitted from mosquito bite to human. However some of them still believed in ghost and perceived that eating and drinking unhygienic foods and coughing from person to person were causes of malaria. This more or less showed that they probably did not know exactly what malaria causes from. The reason that they could give the right answer because some of them used to stayed in the refugee camps where often promote about mosquito control such as spraying, so they may take it for grant.

About knowledge on prevention: the interesting point was 72% of participants replied that malaria could be prevented from taking drugs regularly. This showed their perceived which related to inappropriate drug use, which would affect later to drug resistant.

On attitude: 78% of participants perceived that malaria could not be cured. By the controversial sentence “ malaria is not a serious disease” 81% of them agree on that. This showed their less awareness towards malaria, which would affect to their practice on malaria prevention and treatment seeking behavior.



For practice: most of participant (93%) replied that they slept under bed nets regularly. But from observation found that many of the observed bed nets were not in good condition to complete mosquito bite protection. And also limitation of number of bed nets in each family. From observation ten houses, only three houses were found bed nets more than one while the average of the family size was about four. Thus all of them could not fit in one net and while they went to the forest this problem was more critically. This issue needs cooperation which government, CNM (Cambodia national malaria control), WHO and NGOs who work in the area to prioritize the problem and later initiate bed nets distribution campaign with other malaria control activities.

For treatment seeking behavior aspect, self-medication was in the top rank of their choices. The reasons may be due to their low economic status and unavailable of government health service in the area. This issue also needs high attention and cooperates from the government, CNM, community as well as drugs sellers in order to provide basic proper medical care to the population.

In the conclusion: pregnant women in this village are the population at risk for malaria as well as the entire population. The effect of malaria to pregnant women is more severe than any other groups such as increasing maternal death, abortion, anemia, stillbirth, premature labor and low birth weigh furthermore malaria can transmit through placenta to baby as well.

In general there are three strategies used to control malaria worldwide: 1) vector control, 2) interrupt transmission from vector to human and 3) early detection and

treatment (EDT). It has been proved in many places that combining strategies are effective for malaria control especially on pregnant women prompt treatment is really recommended. Therefore the promotion of IEC and EDT through ANC would be an appropriate proposed intervention for pregnant women in O'Smarch village.

#### **4.8 Lesson Learned**

The situation analysis was carried out for 10 days in O' Smarch village. The qualitative and quantitative approaches were applied for data collection. All techniques are important and need clear purpose before go to the field to collect all data otherwise the data obtained may not fulfill the hypothesis.

For instruments of all technique used; the research team must be cleared and understand, what question(s) really mean in order to get the meaningful answer. In case of cross language was used between the researcher and the data collection team, re-demonstration may be need to practice before going to the field.

For the focus group discussion (FGDs) which was conducted with 12 participants. All participants sat in an oval shape instead of circle and the facilitator sat in wide pole. This setting later caused a problem of motivation all participants due to the facilitator could not see all of them. It is really recommend that a circle setting is appropriate for FGDs and in case of limitation of spacing an oval shaped could be applied but the facilitator must sit at one site of the length pole.

## 4.9 Limitations

- According to the country health information system is on going to develop in recent years. Therefore the review secondary data from the government and health authorities were limited.
- During performed interview drugs sellers: some of them did not say it openly especially about the drug available in their shops. Thus the research team might not get the real picture from the interview and this may distort the interpretation of the real situation.
- Some of questions in attitude part that were used for data exercise are not really measure attitude of the participants, instead they measured more on knowledge. Thus some of these questions may need to be revised before applying in the field again.