

## CHAPTER IV



### RESULTS

This research studied Knowledge, Attitude and Practice regarding of liver fluke infection and also demographic factors of “Yao nationality” population in Ban Tonpeung, Moo 16, Tumbon Romyen, Chiangkham district, Phayao province, 184 of total. The results would be presented in table and description, divided into 5 parts.

Part 1 Demographic factors of sample group

Part 2 Knowledge of liver fluke

Part 3 Attitude on liver fluke

Part 4 Practice regarding of liver fluke

Part 5 Association between specific variables

#### **4.1 Part 1 Demographic Factors of the Sample Group**

The sample group, 184 subjects in total, consisted of 91 males (49.50%) and 93 females, (50.50%)

The group had an average age of 32.65 years, minimum 15 and maximum 54. By age group, the group of 15 – 25 years held the biggest number (33.20%) while the group of 26 – 35 and 36 – 45 years were equal (25.50%). The least was the group of 46 – 55 years (15.80%)

By marital status, 72.80% of sample group was married, 20.10% was not married, and 7.10% was widow or divorced or separated. The 39.70% of sample group were family leaders, 37.00% were wife or husband of the leader, 22.80% and 0.05% were children and inhabitants respectively.

Education level of the sample group, 80 of them (43.50%) were illiterate in Thai but 28.80% graduated primary school and 27.70% graduated or were in progress in secondary school or higher education.

Major occupation, most of them (69.60%) were farmers, 15.80% were laborers, 8.20% were students and 6.50% were of other jobs e.g. seller. (Shown in Table 2)

**Table 2: Demographic characteristics of sample group**

Demographic characteristic	Number	Percentage
1. Sex		
- Male	91	49.50
- Female	93	50.50
2. Age group (years)		
15 – 25	61	33.20
26 – 35	47	25.50
36 – 45	47	25.50
46 – 55	29	15.80
Mean = 32.65, SD = 0.855		
Min = 15, Max = 54		
3. Marital status		
- Single	37	20.10
- Married (coupled)	134	72.80
- Widow, divorced, separated	13	7.10

**Table 2: Demographic characteristics of sample group (Cont.)**

Demographic characteristic	Number	Percentage
4. Rank in family		
- Leader	73	39.70
- Husband / wife	68	37.00
- Children	42	22.80
- Inhabitant	1	0.50
5. Education level		
- Never attended school	80	43.50
- Primary school	53	28.80
- Secondary school or higher	51	27.70
6. Occupation		
- Farmer	128	69.90
- Laborer	29	15.80
- Student	15	8.20
- Others	12	6.50

## 4.2 Part 2 Knowledge about Liver Fluke

According to the assessment of liver fluke knowledge of sample group, 184 persons, over 80 percents had correct knowledge on

1. What causes liver fluke
2. To control the transmission of liver fluke to others
3. The elimination of liver fluke in food before consumption

But over 50 percents of sample group still had misconception on

1. Initial signs of liver fluke existence
2. Duration of liver fluke inhabiting in body
3. Which organ the liver fluke inhabits in (Shown in Table 3)

**Table 3: Number and percentage of sample group having correct knowledge about liver fluke infestation**

Knowledge	Number	Percentage
1. What cause liver fluke	163	88.60
2. To control the transmission of liver fluke to others	151	82.10
3. Elimination of the fluke in food before consumption	149	81.00
4. Symptoms of severe case	146	79.30
5. How to protect one-self from the liver fluke	124	67.40
6. Food containing liver fluke	116	63.00
7. How to detect and control liver fluke in one-self	98	53.30
8. What examination can detect liver fluke spore	88	47.80
9. Time duration of its existence in the body	67	36.40
10. Initial signs of lever fluke existence	34	18.50
11. Body organ where the mature fluke inhabits	28	15.20
Mean = 6.326      Maximum = 1.00      Minimum = 10.00      SD = 2.203		

Then classified the total scores of sample group in Mean  $\pm$  SD form. Most of them, 137 persons (74.50%) had moderate level of knowledge, 29 (15.80%) and 18 (9.80%) had high and low level of knowledge respectively. (Shown in Table 4)

**Table 4: Level of knowledge toward liver fluke infestation**

Level of knowledge	Number	Percentage
Low	18	9.80
Moderate	137	74.50
High	29	15.80
Total	184	100

### **4.3 Part 3 Attitude toward Liver Fluke Infestation**

It was found that among 184 samples, over 70 percents of them had correct concept in accordance with public health practice that

1. Raw or half-cooked fish consumption poses higher risk of liver fluke than cooked fish consumption
2. The existence of liver fluke poses high risk of liver cancer
3. The use of proper toilet controls the liver fluke distribution
4. Even a healthy person can get liver fluke if consumes raw fish

But at least 20 percents of sample group had following misconception

1. Raw-fish Laab (a Thai dish) is tastier than cooked-fish Laab
2. Fermented fish are germ free not necessary to cooked before eating
3. Adding fresh lemon juice in to raw fish laab or koy pla dib can eliminate the liver fluke
4. Making fish cooked is a waste of time

**Table 5: Attitude and belief in liver fluke**

Attitude/belief	Agree		Uncertain		Disagree	
	n	%	n	%	N	%
1. Raw or half-cooked fish consumption poses higher risk of liver fluke than cooked fish consumption	149	81.00	26	14.10	9	4.90
2. The existence of liver fluke poses high risk of liver cancer	136	73.90	31	16.80	17	9.20
3. The use of proper sanitary latrine controls the liver fluke distribution	136	73.90	36	19.60	12	6.50
4. Even a healthy person can get liver fluke if consumes raw fish	130	70.70	32	17.40	22	12.00
5. Liver fluke is terrifying	126	68.50	34	18.50	24	13.00
6. Cured patient could relapse if continue eating raw fish again	123	66.80	40	21.70	21	11.40
7. Liver fluke can be fatal	121	65.80	54	29.30	9	4.90
8. Big or small raw fresh-water fish same posed high risk of liver fluke	97	52.70	53	28.80	34	18.50
9. Those who like eating raw fish should seek stool exam	96	52.20	55	29.90	33	17.90
10. Eating raw fish with drinking alcohol can eliminate the liver fluke	20	10.90	62	33.70	102	55.40
11. Adding ants into raw fresh-water fish dish can eliminate the liver fluke	24	13.00	62	33.70	98	53.30
12. True man must eats raw fish Laab	32	17.40	15	8.20	137	74.50
13. Raw fish Laab serving to guest is very honorable	32	17.40	22	12.00	130	70.70
14. Liver fluke is curable so not necessary to stop eating raw fish	33	17.90	29	15.80	122	66.30
15. Making fish cooked is a waste of time	36	19.60	13	7.10	135	73.40
16. Adding fresh Lemon juice in to raw fish Laab or koy pla dib can eliminate the liver fluke	38	20.70	61	33.20	85	46.20
17. Fermented fish not necessary to cooked before eating	44	23.90	45	24.50	95	51.60
18. Raw fish laab is tastier than cooked fish laab	62	33.70	34	18.50	88	47.80
Mean = 25.20	Maximum = 34		Minimum = 5		SD = 5.91	

When ranking attitude using total scores in Mean  $\pm$  SD form, it was found that 88 cases (47.50%) had moderate level of attitude, 68 (37.00%) and 28 (15.20%) had high and low level of attitude. (Shown in Table 6)

**Table 6: Level of attitude about Liver fluke**

Level of attitude	Number	Percentage
Low	28	15.20
Moderate	88	47.80
High	68	37.00
Total	184	100

#### 4.4 Part 4 Practice Regarding of Liver Fluke Prevent and Control

Results of the study on raw or half-cooked fish consumption practice in sample group of 184 cases was that 135 of them (73.40%) used to eat raw or half-cooked fish.

Types of food with raw or half-cooked fish that used to be eaten by the sample group were raw fish “Laab” (67.74%), raw fish “Koy” (27.72%), freshly fermented fish “Pla Raa and Som Pla Dib”(23.91%).

Frequency of consuming raw or half-cooked fish of the sample group was as follows; 54.07% ate less than once a month, 34.07% ate once a month, and only 0.74% ate more than once a week. (Shown in Table 7)

**Table 7: Practice of raw or half-cooked fish consumption**

<b>Behavior</b>	<b>Number</b>	<b>Percentage</b>
1. Eating raw or half-cooked fish		
- Eat it or used to eat it	135	73.40
- Never eat it	49	26.60
2. Type of food used to eat		
- Laab Pla Dib	134	67.74
- Pla Ra Dib	44	23.91
- Koy Pla Dib	51	27.72
- Yang Pla	51	27.72
- Pla Som / Pla Jom Dib	44	23.91
3. Frequency of raw or half-cooked fish eating		
- Once a week	1	0.74
- A few times a month	15	11.11
- Once a month	46	34.07
- Less than once a month	73	54.07

The stool examination for liver fluke detection of the sample group, showed that 79 cases (42.90%) never had stool exam and 105 cases (57.10%) used to have stool exam. The results of such examination was that 36 of the sample group (34.29%) detected liver fluke and 69 cases (65.71%) did not.

Among those, 100 % had the examination at health center. (Shown in Table 8)



**Table 8: Stool examination for liver fluke detection**

<b>Stool examination</b>	<b>Number</b>	<b>Percentage</b>
1. Stool examination		
- Yes	105	57.10
- Never	79	42.90
2. Place of examination		
- Health center	105	100.0
3. Results of examination		
- Positive	36	34.29
- Negative	69	65.71
- Total	105	100.0

Treatment after the fluke detected, 35 cases (97.22%) was treated with Paziquantel, and only 1 case had no treatment. After treatment, 20 cases (55.56%) had follow up exam. Among them, 18 cases (90.00%) were negative and 2 cases (10.00%) were positive.

Among those detected with the liver fluke, 26 cases (72.22%) continued eating raw or half-cooked fish and 10 cases (27.28%) stopped eating it. (Shown in Table 9)

**Table 9: Treatment and control practice of sample group**

<b>Behavior</b>	<b>Number</b>	<b>Percentage</b>
1. Treatment after detected positive		
- Treated	35	97.22
- Untreated	1	2.78
2. Follow up stool examination		
- Yes	20	55.56
- No	16	44.44
3. Result of the follow up		
- Positive	2	10.00
- Negative	18	90.00
4. Resume to eat raw fish		
- No	10	27.78
- Yes	26	72.22

As regards to using the toilet of the sample group, 183 cases (99.50%) had toilet at home. And among them, 75.00% always used toilet for excretion whilst 25.00% still used wood, bush, or riverbank as toilet. (Shown in Table 10)

**Table 10: Toilet use practice of sample group**

<b>Practice</b>	<b>Number</b>	<b>Percentage</b>
1. Had sanitary toilet at home		
- Yes	183	99.50
- No	1	0.50
2. Toilet use		
- Always	138	75.00
- Sometimes	46	25.00
3. Excretion site beside toilet		
- Wood and bush	43	93.48
- Riverbank	3	6.52

As regards the information of liver fluke, most of the sample group received from radio and television (51.00%), then from public poster in the village (49.50%), and from health volunteer and health staff (33.70% and 27.70% respectively). (Shown in Table 11)

**Table 11: Information of liver fluke received from media**

Media	received		Never received	
	N	%	N	%
1. Radio and television	94	51.10	90	48.90
2. Public poster	91	49.50	93	50.50
3. Health volunteer	62	33.70	122	66.30
4. Health staff	51	27.70	133	71.30
5. Village public announcement	46	25.00	138	75.00
6. Others	20	10.90	164	89.10

Among them, number of type of media from which the sample group received about liver fluke: 49 cases learned from 1 type of media, 53 cases from 2 types, 26 cases from 3 types, 20 cases from 4 types, and 10 cases from 5 types of media. However, 26 cases never got information from any media at all. (Shown in Table 12)

**Table 12: Number of types of media from which the sample group got information**

Number of type	Number of case	Percentage
- Never at all	26	14.10
- 1 type	49	26.60
- 2 types	53	28.80
- 3 types	26	14.10
- 4 types	20	10.90
- 5 types	10	5.40
Total	184	100.00

#### **4.5 Part 5 Association Between Specific Variables**

Outcomes of association analysis of demographic characteristic i.e. sex, education level, age group, and occupation with the level of knowledge about liver fluke of the sample group.

##### **Sex**

Male and female had no significant difference in level of knowledge about liver fluke (P-value = 0.3960)

##### **Educational level**

Education level had significant association with level of knowledge about liver fluke (P-value = 0.0277). Higher educated sample group had higher level of knowledge than the non-educated one.

**Age group**

Age associated with level of knowledge about liver fluke significantly (P-value = 0.0004). The younger they were, the better they knew about liver fluke.

**Occupation**

Occupation associated insignificantly (P-value = 0.4900) with level of knowledge about liver fluke. (Shown in Table 13)

**Table 13: Association Among Demographic characteristic with Level of Knowledge of Liver fluke**

Demographic Characteristic	Level of Knowledge						X <sup>2</sup>	df	P-value
	Low		Moderate		High				
	n	%	n	%	n	%			
<b>1. Sex</b>									
- Male	9	9.90	71	78.00	11	12.10	1.851	2	0.3960
- Female	9	9.70	66	71.00	18	19.40			
<b>2. Education level</b>									
- Illiterate	4	5.00	74	92.50	2	2.50	41.63	6	0.02770*
- Primary school	3	5.70	41	77.40	9	17.00			
- Secoundary scool or higher	11	21.60	22	43.10	17	35.30			
<b>3. Age group (years)</b>									
- 15-25	13	21.30	33	54.10	15	24.60	31.45	6	0.000*
- 26-35	0	0	36	76.60	11	23.40			
- 36-45	3	6.40	41	87.20	3	6.40			
- 46-55	2	6.90	27	93.10	0	0			
<b>4. Major Occupation</b>									
- Student	2	13.30	7	46.70	6	40.00	12.63	6	0.4900
- Laborer	3	10.30	23	79.30	3	10.30	00		
- Farmer	13	10.00	99	77.30	16	12.50			
- Other	0	0	8	66.70	4	33.30			

Outcomes of association analysis of demographic characteristic i.e. sex, education level, age group, and occupation with the level of attitude on liver fluke of the sample group.

**Sex**

Male and female had a significant difference at 0.05 in level of attitude on liver fluke (P-value = 0.011) Female had better attitude than male did.

**Educational level**

Education level had a significant association with level of attitude on liver fluke at 0.05 (P-value = 0.0042). With higher education, they had better attitude than the sample group with no education.

**Age group**

Age associated with level of attitude on liver fluke significantly at 0.05 (P-value = 0.0004). The younger they were the better attitude on liver fluke they had.

**Occupation**

Occupation associated significantly at 0.05 (P-value = 0.0060) with level of attitude on liver fluke. Students had better attitude on liver fluke than farmers and laborer did. (Shown in Table 14)

**Table 14: Association Among Demographic characteristic with the level of Attitude about Liver fluke**

Demographic Characteristic	Level of Attitude						X <sup>2</sup>	df	P-value
	Low		Moderate		High				
	n	%	n	%	n	%			
<b>1. Sex</b>									
- Male	8	8.80	51	56.00	32	35.20	9.039	2	0.011*
- Female	20	21.50	37	39.80	36	38.70			
<b>2. Education level</b>									
- Never attended school	22	27.50	47	58.80	11	13.80	38.79	4	0.0042*
- Primary school	4	7.50	19	35.80	30	56.60	6		
- Secondary School or higher	2	3.90	22	43.10	27	52.90			
<b>3. Age group (years)</b>									
- 15-25	3	4.90	24	39.30	34	55.70	44.17	6	0.0004*
- 26-35	3	6.40	27	57.40	17	36.20	9		
- 36-45	8	17.00	23	48.90	16	34.00			
- 46-55	14	48.30	14	48.30	1	3.40			
<b>4. Major Occupation</b>									
- Student	2	13.30	1	6.70	12	80.00	18.29	6	0.0060*
- Laborer	3	10.30	17	58.60	9	31.00	6		
- Farmer	23	18.00	64	50.00	41	32.00			
- Other	0	0	6	50.00	6	50.00			



Outcomes of association analysis of demographic characteristic i.e. sex, education level, age group, and occupation with the practice of raw or half-cooked fish consumption of the sample group.

### **Sex**

Male and female had a significant difference at 0.05 (P-value = 0.0060) of the behavior of raw or half-cooked fish consumption. Male had more practice of raw or half-cooked fish consumption than female did.

### **Educational level**

Education level had a significant association with the practice of raw or half-cooked fish consumption at 0.05 (P-value = 0.0008). The sample group with no education had more behavior of raw or half-cooked fish consumption than the one with education.

### **Age group**

Age associated with the practice of raw or half-cooked fish consumption significantly at 0.05 (P-value = 0.0045). The younger they were, the less behavior of raw or half-cooked fish consumption they had.

### **Occupation**

Occupation associated significantly at 0.05 (P-value = 0.0060) with the practice of raw or half-cooked fish consumption. Students had less behavior of raw or half-cooked fish consumption than farmer did and laborer did. (Shown in Table 15)

**Table 15: Association Among Demographic characteristic with Practice of raw fish consumption**

Demographic Characteristic	Raw fish consumption				X2	df	P-Value
	Eat		Never eat				
	n	%	n	%			
<b>1. Sex</b>							
- Male	81	89.00	10	11.00	22.5442	1	0.0060*
- Female	54	58.10	39	41.90			
<b>2. Education level</b>							
- Never attended school	74	92.50	6	7.50	26.6760	2	0.0008*
- Primary school	32	60.40	21	39.60			
- Secondary School or higher	29	56.90	22	43.10			
<b>3. Age group (years)</b>							
- 15-25	28	45.90	33	54.10	35.9625	3	0.0045*
- 26-35	40	85.10	7	14.90			
- 36-45	40	85.10	7	14.90			
- 46-55	27	93.10	2	6.90			
<b>4. Major Occupation</b>							
- Student	3	20.00	12	80.00	24.4980	3	0.0000*
- Laborer	21	72.40	8	27.60			
- Farmer	10	78.90	27	21.10			
- Other	1	83.30	2	16.70			
	10						

Outcome of analysis of the association of level of knowledge and the practice of raw or half-cooked fish consumption of the sample group was that the sample group with different level of knowledge had insignificant difference at 0.05 (P-value = 0.2160) in the behavior of raw or half-cooked fish consumption. (Shown in Table 16)

**Table 16: Association Among Level of Knowledge of Liver fluke with Practice of raw fish consumption**

Level of Knowledge	Eat		Never eat		X <sup>2</sup>	df	P-Value
	n	%	n	%			
Low	12	66.70	6	33.30	3.060	2	0.2160
Moderate	105	76.60	32	23.40	0		
High	18	62.10	11	37.90			

When analyzed the association of level of knowledge, item by item, of the sample group and the practice of raw or half-cooked fish consumption, the findings were as follows :

- The sample group having different knowledge about what caused liver fluke had insignificant difference of practice of raw or half-cooked fish consumption at 0.05 (P-value = 0.174).
- The sample group having different knowledge about what food caused liver fluke had significant difference of practice of raw or half-cooked fish consumption at 0.05 (P-value = 0.005). The sample group with proper knowledge had less behavior of raw or half-cooked fish consumption.

- The sample group having different knowledge about what organ the mature liver fluke inhabited in had insignificant difference of practice of raw or half-cooked fish consumption at 0.05 (P-value = 0.801).
- The sample group having different knowledge about how to detect liver fluke had insignificant difference of practice of raw or half-cooked fish consumption at 0.05 (P-value = 0.234).
- The sample group having different knowledge about how to control the spreading of liver fluke had insignificant difference of behavior of raw or half-cooked fish consumption at 0.05 (P-value = 0.598).
- The sample group having different knowledge about initial signs of having liver fluke had insignificant difference of practice of raw or half-cooked fish consumption at 0.05 (P-value = 0.403).
- The sample group having different knowledge about severe symptoms of liver fluke had a significant difference of practice of raw or half-cooked fish consumption at 0.05 (P-value = 0.012). The group having proper knowledge had less behavior of raw or half-cooked fish consumption than the group with improper knowledge.
- The sample group having different knowledge about how to cook to prevent liver fluke had insignificant difference of practice of raw or half-cooked fish consumption at 0.05 (P-value = 0.773).
- The sample group having different knowledge about time duration of liver fluke inhabiting in the body had insignificant difference of practice of raw or half-cooked fish consumption at 0.05 (P-value = 0.688).

- The sample group having different knowledge about how to protect oneself from liver fluke had insignificant difference of practice of raw or half-cooked fish consumption at 0.05 (P-value = 0.688).
- The sample group having different knowledge about how to detect and how to treat when liver fluke detected had insignificant difference of practice of raw or half-cooked fish consumption at 0.05 (P-value = 0.763).

Details are shown in Table 17.

**Table 17: Association Among Knowledge item by item with Practice of raw fish consumption**

Item of Knowledge	Eat raw fish		Never eat raw fish		X <sup>2</sup>	df	P-Value
	n	%	n	%			
1. What cause of liver fluke							
- Correct	117	71.80	46	28.20	1.849	1	0.174
- Incorrect	18	85.70	3	14.30			
2. Food containing liver fluke							
- Correct	77	66.40	39	33.60	7.850	1	0.005*
- Incorrect	58	85.30	10	14.70			
3. Body organ where the mature fluke inhabit							
- Correct	20	71.40	8	28.60	0.64	1	0.801
- Incorrect	115	73.70	41	26.30			
4. What examination can detect the liver fluke							
- Correct	61	69.30	27	30.70	1.147	1	0.234
- Incorrect	74	77.10	22	22.90			

**Table 17: Association Among Knowledge item by item with Practice of raw fish consumption (Cont.)**

Item of Knowledge	Eat raw fish		Never eat raw fish		X <sup>2</sup>	df	P-Value
	n	%	n	%			
5.To control the transmission of liver fluke to other							
- Correct	112	74.20	39	25.80	0.278	1	0.598
- Incorrect	23	69.70	10	30.30			
6.Food containing liver fluke							
- Correct	23	67.60	11	32.40	0.699	1	0.403
- Incorrect	112	74.70	38	25.30			
7.Symtoms of severe case							
- Correct	101	69.20	45	30.80	6.357	1	0.012*
- Incorrect	34	89.50	4	10.50			
8.Elimination of the liver fluke in food before consumption							
- Correct	25	71.40	10	28.60	0.083	1	0.773
- Incorrect							
9.Time duration of its existence in body							
- Correct	48	71.60	19	28.40	0.161	1	0.688
- Incorrect	87	74.40	30	25.60			
10.How to protect our-self from liver fluke							
- Correct	86	69.40	38	30.60	3.137	1	0.077
- Incorrect	49	81.70	11	18.30			
11. How to detect and control liver fluke in our-self							
- Correct	71	72.40	27	27.60	0.091	1	0.763
- Correct	64	74.40	22	25.60			

Outcome of analysis of the association between level of attitude and practice of raw or half-cooked fish consumption was that the sample group with different level of attitude had significant difference of practice of raw or half-cooked fish consumption at 0.05 (P-value = 0.0450). The sample group with high attitude had less Practice of raw or half-cooked fish consumption than the group with low attitude. (Shown in Table 18).

**Table 18: Association Among Level of Attitude about Liver fluke with Practice raw fish consumption**

Level of Attitude	Eat raw fish		Never eat raw fish		X <sup>2</sup>	df	P-Value
	n	%	n	%			
Low	23	82.10	5	17.90			
Moderate	69	78.40	19	21.60	5.8210	2	0.0450
High	43	63.20	25	36.80			