CHAPTER IV

DATA EXERCISE

Evaluation of the 1998 Provincial Diarrhea Education Program: Chonburi Health Education Program to Promote Health Behavior with the Objective of Decreasing the Acute Diarrhea Morbidity Rate in Sriracha District

4.1 Introduction

From the Watana, K. et al.' study (1997) of community health problems at Mou 3–4 Villages of Najomthien Subdistrict, Sattahip District, Chonburi Province, it was found that the villagers identified improper garbage disposal as their community's health problem. This problem was perceived to be closely related to acute diarrhea. The researchers also found by in-depth interviews that 40% of the respondents (12 in 30) perceived diarrhea as a noncommunicable disease, and only 36.67% of respondents (11 in 30) were using ORS while 83.33% of them were buying drugs as a medical intervention, (e.g. Lomotil, Noxy, Eldoform). Many questions were asked about these issues in the Provincial Public health Administrative Committee's discussion to set provincial health problem priorities and acute diarrhea was raised to the first priority (see Table 4.1.1) on the 27th October 1997.

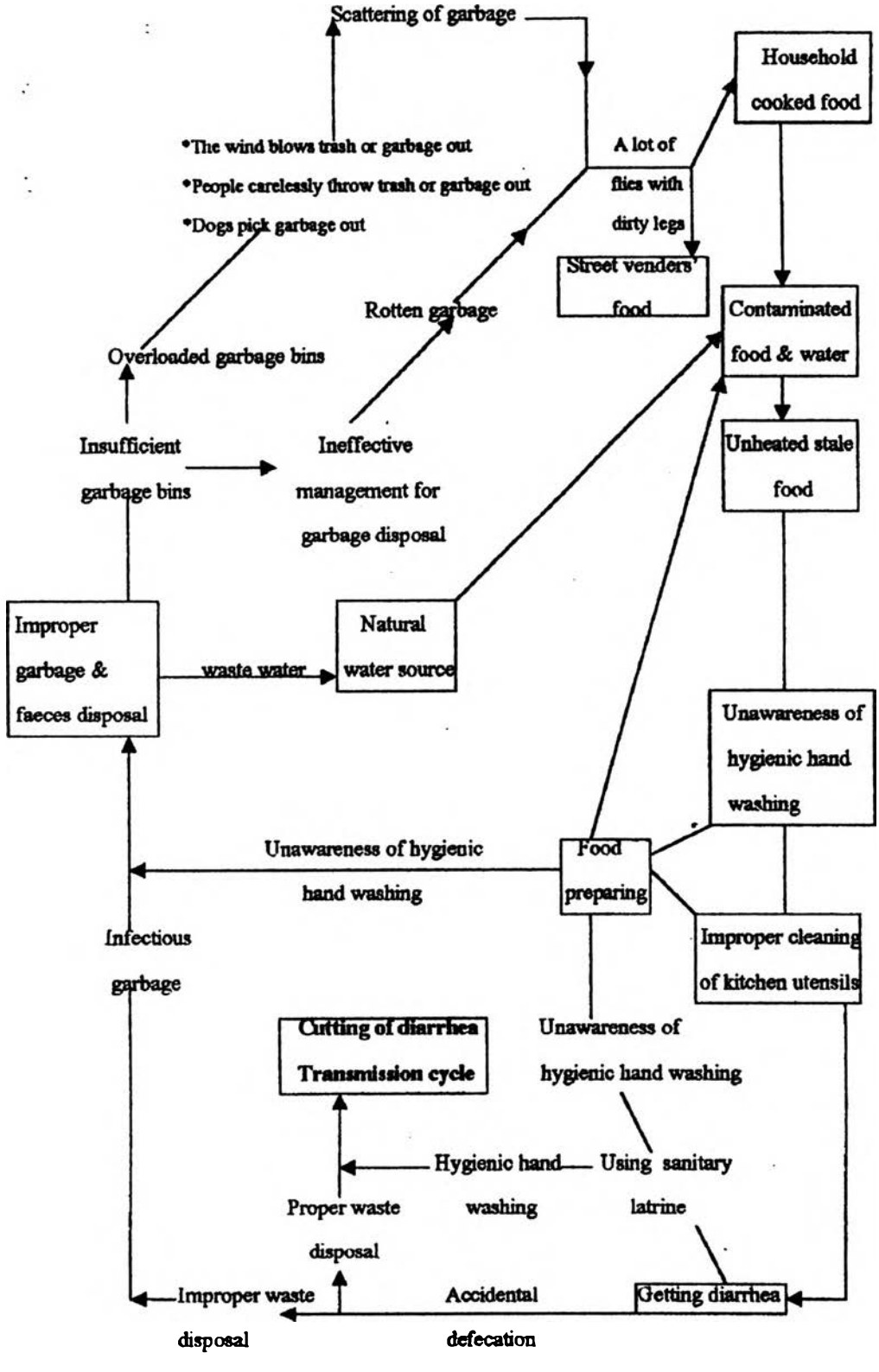
Table 4.1.1 : Priority Setting Scores of Chon Buri Health Problems

Priority Setting	Health Problem	Total Score	Multiplied Scores						
			Magnitude		Severity		People Concern		Solving Probability
1	Acute Diarrhea	16	4	X	2	X	1	X	2
2	Accident	12	4	X	3	X	1	X	1
3	AIDS in Mother & Child	9	3	X	3	X	1	X	1
4	AIDS	8	1	X	4	X	2	X	1
5	Environmental Health	8	2	X	2	X	2	X	1
6	Drug Abuse	3	1	X	1	X	3	X	1

Therefore, a program to solve acute diarrhea was the highlight of Chon Buri Provincial Public Health Policy, and the head of the Communicable Disease Control Section acted as the program manager, creating the 1998 Chon Buri Provincial Health Education Program to Promote Health Behavior with the Objective of Decreasing the Acute Diarrhea Morbidity Rate in Sriracha district. The strategy, with program budget and time limitations, consisted of:

1. Application of Kwanreun Watana's concept for mapping the diarrhea communication cycle (see Figure 4.1.1), the WHO instruction for treatment and prevention of diarrhea (WHO, 1992) and the WHO Manual for the Treatment of Acute Diarrhea (WHO, 1984), for teaching material production;
2. Brain storming discussion among 12 diarrhea educators for teaching material development;
3. Selection of a target sample between the ages 12 – 14 years old or those studying in the first year of governmental secondary school;

Figure 4.1.1 Watana K's Concept Mapping of Diarrheal Transmission Cycle



4. Selection of a target area for program implementation based on the following criteria:
    4.1 The district that has acute diarrhea morbidity rate greater than 100/100,000 population;
    4.2 The district that had severe diarrhea cases in the past three years (1995-1997) ;
    4.3 The district that implemented the "Healthy City Program" in 1998;
    4.4 The district which has more than one governmental secondary school.
5. Training of Tambon health personnel by provincial team teaching demonstrations;
6. Monthly diarrhea education for village health volunteers by Tambon health personnel;
7. The target sample or the target adolescents and village health volunteers are responsible for transmitting the diarrhea message to their parents/caretakers or family members or neighbourhood by work-of-mouth communication or reminding;
8. Program assessment of:
    8.1 Teaching effectiveness (provincial educator performance, teaching material and target adolescents' knowledge) assessed by the communicable disease control section (C.D.C section);
    8.2 Hand washing behavior of target adolescents and Sriracha people evaluated by the health education section;

8.3 Sanitary latrine utilization by target adolescents and Sriracha people, assessed by the Environmental Health and Occupational Health Section;

8.4 Hygienic food consumption behavior of target adolescents measured by the C.D.C. section;

8.5 Impact of Sriracha acute diarrhea morbidity rate assessed by the C.D.C. section;

8.6 Impact of acute diarrhea prevention and self-care behavior of adolescents' parents/caretakers.

The assessment in 8.6 was my data exercise to complete this provincial program evaluation.

4.2 Objectives

This data exercise was done to describe changes in the target group's behavior in acute diarrhea prevention and self-care and included relevant information affected by the 1998 provincial health education program and collected relevant information concerning behavior changing processes of adolescents' parents/caretakers with respect to delivery of acute diarrhea prevention and self-care messages by the adolescents to their parents/caretakers. This information is useful in choosing either the conservation method or PAR as the appropriate strategy to develop people's behavior in acute diarrhea

prevention and self-care. Therefore, qualitative and quantitative techniques have been used in the study design of my data exercise.

4.3 Study Design

The study is a cross sectional descriptive study to collect information about the changes in behavior of target group and the relevant information to discover what happened before, during and after implementation of the 1998 provincial diarrhea education program at Sriracha district, using quantitative technique and especially using focus group discussion technique in adolescent group and teacher parents/caretakers groups for checking validity and reliability of quantitative information.

4.4 Study Population and Sample

The target population of this study consisted of the parents/caretakers of the registered adolescents studying in the first year of Sriracha governmental schools during the 1998 educational year:

1.	Sriracha school	650	persons
2.	Surasak Widhayaknow school	142	persons
3.	Bung-Sriracha Phitayakhom school	110	persons
4.	Thung Sukhalphithaya school	347	persons
	Tatal	1,249	persons

The sample size, which would be drawn from the population with the expectation that 50% of them received the message from the adolescents and there was no more 10% of acceptable error at 95% confidence interval, was calculated from the formula below (Wanichbancha, 1997:6)

$$N = Z^2 PQ / d^2$$

$$= (1.96)^2 (0.5) (0.5) / (0.1)^2$$

$$= 96$$

Another formaula (Kitpreedaborisuit, 1997 : 71):

$$\text{Sample size (n)} = \frac{N}{1 + N(e)^2}$$

N = population size

e = proportion of acceptabel error

$$n = \frac{1249}{1 + 1249 (0.1)^2}$$

$$= 92.59$$

$$\approx 93$$

96 was the sample size selected because it matched the criteria for drawing sample (see the second criteria)

Criteria for drawing sample

1. Using simple random sampling for villages in each health center's area of responsibility and matching the sampling with registered village addresses of the adolescents.

2. Random picking of eight houses per each area for which the health centers (12 health centers) are responsible.
3. Addition of 15 samples by convenience sampling (Marshall, 1996) for substitution for incomplete answered questionnaires or the dropout respondents.

4.5 Data Collection Methods

Because of time and resources limitations, only 15 of the interview questionnaires were tried out with interview time checks and ask for appropriate wording about the behavior items. One questionnaire for interviewing and other fourteen were tried out with 14 informants (not respondents) in focus group discussion. This study used both quantitative and qualitative techniques to collect the data.

4.5.1 Questionnaire interview; Using a questionnaire modified by a group of Sriracha people, invited by Sriracha health personnel, to participate in trying it out, both pre and post test data was collected. The post-test was manipulated after program implementation for two weeks.

4.5.2 Focus group discussion; Two kinds of focus group discussion were performed; the first was adolescent focus group discussion and the second was teacher-parents-caretaker focus group

discussion. The first consisted of four groups (from four school) of 10 adolescents selected by non-probability sampling or convenience sampling (Marshall, 1996). They discussed what happened after they perceived Diarrhea Information. The second consisted of 10 persons (one teacher, one father, four mothers and four caretakers), selected by convenience sampling also, who discussed what they were told and how much time they had spent on talking with their children.

4.6 Operation plan for data exercise

4.6.1 Performing the evaluation of the 1998 Provincial diarrhea Education Program, Chon Buri Provincial Health Education Program to Promote health Behavior with the Objective of Decreasing the Acute Diarrhea Morbidity Rate in Sriracha disirict, was presented to request the Provincial Public Health Administrative Committee's permission to proceed.

4.6.2 Coordinating with provincial Secondary School Education and the four Sriracha governmental schools (28^{th} Oct. – 16^{th} Dec. 1997) to make an address record of registered pupils (adolescents) in the first year of those schools.

4.6.3 Questionnaire construction emphasized acute diarrhea prevention and self-care behaviors, resulting from discussion with academic

advisors, literature review, and discussion with provincial public health technical officers (29th Oct. – 24th Nov. 1997).

4.6.4 Coordinating with the district health officer and other health personnel to try out the questionnaire by interviewing and focus group discussion (24th Dec. 1997 and 9th Jan. 1998). It took 20 – 30 minutes long for each respondent interview.

4.6.5 Modification of the questionnaire.

4.6.6 Explanation of the context of the questionnaire to the interviewers, one health personnel from each of 12 health center, on 25th Dec. 1997.

4.6.7 Pre - test data collection (26th Dec. 1997 - 6th Jan. 1998) and checking for completion of the answered questionnaires.

4.6.8 Performing interviewers discussion for constraints and planning posttest data collection (7th Jan. 1998).

4.6.9 Post – test date collection for evaluation (two weeks after teaching the adolescents: 2, 5, 6, and 17th Feb. 1998) comparing with pre-test data and the findings from the two types of focus group discussions (four groups of 10 adolescents, and the teacher-parents-caretaker group) performed on 12, 25-27th Feb. 1998.

4.6.10 Data analysis using computerized windows program of statistical package for social science (SPSS for WINS).

4.6.11 Findings presentation using descriptive statistics.

4.6.12 Difference testing of agreement, about practicing behavior in each group of respondents separated by diarrhea information source

(Adolescent and Not adolescent), between, before and after PAR process using Mc Nemar test (see Appendix H).

4.6.13 Difference testing of agreement, about practicing behavior before PAR process, between the two groups of respondents mentioned in 3.6.12 using Chi-square test (see Appendix I)

4.7 Findings

4.7.1 Quantitative evaluation findings

From 86 complete questionnaires (89.6% of the target), most of the respondents (48.8%) were adolescents' mothers. The remainder were their fathers, uncles/aunts, grandparents and other (25.6% , 18.6% , 4.7% and 2.3% respectively), 54.7% of the adolescents were female, their average age was 13 (min. = 12, Max = 15). The remaining data was analyzed and divided into five categories :-

4.7.1.1 Demographic information

4.7.1.2 Access to diarrheal information (Pre and Post- program implementation)

4.7.1.3 Personal hygiene information for acute diarrhea prevention

4.7.1.4 Self-care behaviors information for acute diarrhea primary treatment

4.7.1.5 Miscellaneous information using hypothesis testing statistics mentioned in 4.6.12 and 4.6.13

4.7.1.1 Demographic information

Demographic information of the respondents is shown in table 4.7.1.1

Table 4.7.1.1 : Number and Percentage of Respondents by demographic Information (n = 86)

Demographic Information	Number	Percentage
Tambon the lives in		
1. Bang-Phra	24	27.9
2. Nong-Kharm	21	24.4
3. Khao-Khansong	2	2.3
4. Bowin	8	9.3
5. Bung	8	9.3
6. Surasak	15	17.5
7. Thung-Sukhla	8	9.3
(Lamchabang Municipality Area)		
Village they live in		
1. Bang - Phra		
Mou 3	8	9.3
Mou 6	8	9.3
Mou 7	5	5.8
Mou 8	3	3.5
2. Nong-Kharm		
Mou 2	1	1.2
Mou 3	4	4.7
Mou 4	5	5.8
Mou 6	1	1.2
Mou 7	2	2.3
Mou 8	1	1.2
Mou 9	4	4.7
Mou 10	3	3.5

Table 4.7.1.1 (cont.)

Demographic Information	Number	Percentage
3. Khao-Khansong		
Mou 1	1	1.2
Mou 6	1	1.1
4. Bowin		
Mou 2	2	2.3
Mou 3	2	2.3
Mou 5	4	4.6
5. Bung		
Mou 2	8	9.3
6. Surasak		
Mou 3	15	17.4
7. Thung – Sukhla		
Mou 11	8	9.3
Age Group		
1. <20 (Legal Immature Age Group)	2	2.3
2. 20-44 (Early Labor Age Group)	55	64.0
3. 45-59 (Golden Age Group)	6	7.0
4. 60-Higher (Elderly/old Age Group)	8	9.3
5. Unknown	15	17.4
Education Level		
1. No school attendance	3	3.5
2. Prathom 4	41	47.7
3. Prathom 6/7	19	22.1
4. Mathayom 3	15	17.4
5. Mathayom 6	3	3.4
6. Bachelors degree	1	1.2
7. Others	4	4.7

Table 4.7.1.1 (cont.)

Demographic Information	Number	Percentage
Occupation		
0. None/House keeper	16	18.6
1. Trader/Storekeeper	18	20.9
2. Agriculturist	4	4.7
3. Laborer	25	29.1
4. Factory employee	10	11.6
5. Governmental officer	7	8.1
6. Others	6	7.0
Income per month (Baht)		
1. <5,000	20	23.3
2. 5,000-9,999	43	50.0
3. 10,000-14,999	15	17.4
4. 15,000-19,999	3	3.5
5. 20,000-24,999	2	2.3
6. >25,000	2	2.3
7. Unknown	1	1.2
Number of family members		
1. 2 persons	2	2.3
2. 3 prs.	10	11.6
3. 4 prs.	37	43.0
4. 5 prs.	21	24.4
5. 6 prs.	8	9.3
6. 7 pre.	4	4.7
7. >7 prs.	4	4.7
Number of under-5-year children in family		
1. None	65	75.6
2. One	18	20.9
3. Two	3	3.5

The respondents were distributed in all six Tambons and in some parts of the urban area of Sriracha District. Most of the respondents lived in Tambon Bang-Phra and Nong-Kharm (27.9% and 24.4% respectively), were 20-44 years of age (Mean = 40, Min. = 16 Max = 76), had an education level at Prathom 4 (47.7%), were laborers (29.1%) and had sufficient monthly incomes (65.1%) in the range of 5,000-9,999 Bant (Mean = 8,520.93 , Min = 300, Max = 40,000) for four family members (43.0%) and most had no children of 0-5 years of age (75.6%)

4.7.1.2 Access to diarrheal information (Before and After program implementation)

After program implementation only 82 of 86 answered questionnaires were selected, because of uncompleted answers and the respondents were not the same persons as before.

Table 4.7.1.2 : Number and Percentage of Respondents with Access to Diarrheal Information (n = 82)

Access to Diarrheal Information	Number		Percentage	
	Before	After	Before	After
Diarrheal information source				
Neighbours	2	1	2.4	1.2
Radio/T.V./Newspaper	34	6	41.5	7.3
Helath workers	1	5	1.2	6.1
Mixed without adolescent	2	10	2.4	12.1
Mixed with adolescent	2	26	2.5	31.7
Adolescent only	0	21	0	25.6
Never received	41	13	50.0	15.9
Knowledge about diarrhea communication				
Can Diarrhea be communicated?				
No	22	8	26.8	9.8
Yes	52	69	63.4	84.1
Uncertain	8	5	9.8	6.1

Before implementation of the 1998 provincial education program (26th Dec. 1997-6th Jan. 1998) the percentage of respondents who had heard about diarrheal information, was equal to the percentage who had not. The percentage

of respondents who had heard diarrheal information from the adolescents after program implementation was 57.3% showing an increase of 54.8% compared with the percentage before program implementation (57.3% - 2.5%) There were 26.8% of respondents who thought that diarrhea was not a communicable disease and another 9.8% was not sure. These two percentages equal 36.6% corresponding with Watana K.et al. (1997) finding that 40% of respondents at Mou 3-4 Tambon Najomthien, Chon Buri Province did not think and were not sure diarrhea was communicable disease (See Table 4.7.1.2)

4.7.1.3 Information of Personal Hygiene for Acute Diarrhea Prevention (Comparing Before and After Program Implementation)

Table 4.7.1.3 : Number and Percentage of Respondents by Acute Diarrhea Prevention Behavior (n = 82)

Access to Diarrheal Information	Number		Percentage	
	Before	After	Before	After
Hand washing with water and soap Before cooking				
- No	5	0	6.1	0
- Yes	48	59	58.5	72.0
- Sometimes	16	12	19.5	14.6
- Water only	13	11	15.9	13.4
Hand washing with water and soap after Defecation/sanitary latrine using				
- No	2	0	2.4	0
- Yes	63	75	76.8	91.5
- Sometimes	10	5	12.2	6.1
- Water only	7	2	8.6	2.4
Hand washing with water and soap Before eating				
- No	10	2	12.2	2.4
- Yes	29	52	35.4	63.4
- Sometimes	30	20	36.6	24.4
- Water only	12	7	14.6	8.6
- Unknown	1	1	1.2	1.2

Table 4.7.1.3 (cont.)

Access to Diarrheal Information	Number		Percentage	
	Before	**After**	**Before**	**After**
More careful of hand washing and cleanness of drinking water, when diarrhea occurred in the family				
- No	10	0	12.2	0
- Yes	51	74	62.2	90.3
- Sometimes	17	6	20.7	7.3
- Never done	3	2	3.7	2.4
- Water only	1	0	1.2	0
Eating only freshly prepared food				
- No	0	1	0	1.2
- Yes	78	79	95.1	96.3
- Sometimes	4	2	4.9	2.5
Awareness of prepared food covering				
- No	0	1	0	1.2
- Yes	80	77	97.6	93.9
- Sometimes	1	2	1.2	2.4
- Unknown	1	2	1.2	2.5
Refusal of inadequately heated food				
- No	9	5	11.0	6.1
- Yes	63	70	76.8	85.4
- Sometimes	10	7	12.2	8.5
Drinking only boiled water				
- No	23	8	28.0	9.8
- Yes	19	32	23.2	39.0

Table 4.7.1.3 (cont.)

Access to Diarrheal Information	Number		Percentage	
	Before	After	Before	After
- Sometimes	19	13	23.2	15.8
- Bottled water / rain water / deep well water	21	29	25.6	35.4
In the case of accidental watery defecation on the floor, clean the floor by moving feces out as much as possible to the toilet and then wash with detergent and water				
- No	10	0	12.2	0
- Yes	52	69	63.4	84.2
- Sometimes	9	6	11.0	7.3
-				
- Disinfection after moving feces our and then wash out with water only	1	0	1.2	0
- Moving feces out with paper, than wash out with water	5	2	6.1	2.4
- Never done / No experience	5	5	6.1	6.1
In the case of accidental watery defecation on the ground, the feces would be buried.				
- No	11	2	13.4	2.5
- Yes	62	73	75.6	89.0
- Sometimes	4	5	4.9	6.1
- Cover with sand than move out to the public	3	0	3.7	0

Table 4.7.1.3 (cont.)

Access to Diarrheal Information	Number		Percentage	
	Before	After	Before	After
parbage bin	2	1	2.4	1.2
- Never done / No experience	0	1	0	1.2
- Unknown				
Food preparation floor is higher than 50 cm (= 60 cm)				
- No	6	0	7.3	0
- Yes	73	81	89.0	98.8
- Sometimes	2	1	2.5	1.2
- Unknown	1	0	1.2	0
Not to throw garbage out carelessly				
- No	72	81	87.8	98.8
- Yes	4	1	4.9	1.2
- Sometimes	5	0	6.1	0
- Collect it on the ground waiting for burning / burying	1	0	1.2	0
Collect household garbage in covered bin				
- No	10	4	12.2	4.9
- Yes	48	60	58.5	73.2
- Sometimes	2	1	2.5	1.2
- Collect it on the ground / in the pit waiting for burning/burying	10	4	12.2	4.9
- Collect it in shopping bag	1	0	1.2	0
- Collect it in uncovered bin	11	13	13.4	15.0

Table 4.7.1.3 (cont.)

Access to Diarrheal Information	Number		Percentage	
	Before	After	Before	After
In the case of accidental watery defecation on the floor, clean the floor by moving feces out as much as possible to the toilet and then wash with detergent and water				
- No	10	0	12.2	0
- Yes	52	69	63.4	84.2
- Sometimes	9	6	11.0	7.3
- Disinfecting after moving feces out and then wash out with water only	1	0	1.2	0
- Moving feces out with paper, then wash out with water	5	2	6.1	2.4
Never done / No experience	5	5	6.1	6.1
In the case of accidental watery defecation on the ground, the feces would be buried.				
- No	11	2	13.4	2.5
- Yes	62	73	75.6	89.0
- Sometimes	4	5	4.9	6.1
- Cover with sand than move out to the public parbage bin	3	0	3.7	0
- Never done / No experience	2	1	2.4	1.2
- Unknown	0	1	0	1.2

Table 4.7.1.3 (cont.)

Access to Diarrheal Information	Number		Percentage	
	Before	After	Before	After
In the case of feces spattered on clothes, rinse it out with into toilet before washing the clothes as usual.				
- No	19	1	23.2	1.2
- Yes	42	62	51.2	75.6
- Sometimes	5	5	6.1	6.1
- Throw the spattered clothes out to the public bin	6	2	7.3	2.4
- Buries the spattered clothes	0	3	0	3.7
- Rinse out with water to the ground before usual washing	3	0	3.7	0
- After rinsing, soak the clothes in disinfectant solution or boiling water for 20-30 min., then wash as usual	1	2	1.2	2.4
- Never done / No experience	1	2	1.2	2.5
- Unknown	5	5	6.1	6.1
Clean anus with soap and water after defecation				
- No	11	2	13.4	2.4
- Yes	64	76	78.1	92.7
- Sometimes	5	2	6.1	2.4
- Water	2	0	2.4	0
- Unknown	0	2	0	2.5

Table 4.7.1.3 described respondents' changes in selection of appropriate acute diarrhea prevention behaviors before and after the provincial program implementation. It showed that most of the respondents agreed with nearly all of the required acute diarrhea prevention behaviors and there was an increasing trend or improvement of awareness (except awareness of covering prepared food) in the percentage of respondents' agreement 2 weeks after the program implementation.

Those improvements were:

a. Agreement with "Hand washing with water and soap before cooking, after defecation and before eating" increased., 58.5% to 72.0% , 76.8% to 94.5% and 35.4% to 63.4% respectively.

b. Agreement with awareness of cleanliness of food and water.

- More careful of hand washing and cleanliness of food and drinking water when diarrhea occurred in the family increased from 62.2% to 90.3%
- Eating only freshly prepared food increased from 95.1% to 96.3%
- wareness of covering prepared food decreased from 97.6% to 93.9%
- Refusal to eat unheated stale food increased from 76.8% to 89.0%
- Refusal of inadequately heated food increased from 76.8% to 85.4%
- Drinking only boiled water increased from 23.2% to 39.0%, it is a greater increase than the percentage increase of respondents who drank other kinks of clean water, from 25.6% to 35.4%
- Boiled/ warm the food purchased from street-food venders increased from 50.0% to 65.9%

- Washing cooking utensils and eating accessories with detergent solution increased from 95.1% to 100%

c. Agreement with sanitary behaviors

- Defecation in sanitary latrine was 100% agreement before and after implementation.
- Awareness of sanitary latrine cleanliness increased from 96.3% to 98.8%
- 60 cm height of food preparation floor increased from 89.0% to 98.8%
- Not throwing garbage out carelessly increased from 87.8% to 98.8%
- Collecting household garbage in a covered bin increased from 58.5% to 73.2%
- Required sanitary disposal of feces on the floor and the ground increased from 63.4% to 84.2% and from 75.6% to 89.0% respectively.
- Required sanitary disposal of feces spattered on clothes increased from 51.2% to 75.6%

d. Agreement with other personal hygiene, anus washing with soap and water after defecation from 78.1% to 92.7%

4.7.1.4 Self-care Behavior Information for Acute Diarrhea Primary Treatment

Table 4.7.1.4 : Number and Percentage of Respondents by Self-care Behavior for Acute Diarrhea Primary Treatment (n = 82)

Self-care Behavior	Number		Percentage	
	Before	After	Before	After
Eating clean food more frequently in small quantities				
- Yes	66	69	80.5	84.2
- Not accustomed to	8	11	9.8	13.4
- Unreasonable to practice	7	0	8.5	0
- Not know	0	1	0	1.2
- Never done/no experience	1	0	1.2	0
- Unknown	0	1	0	1.2
Drinking freshly dissolved ORS (In 24 hr.after being dissolved)				
- Yes	59	68	72.0	82.9
- Not accustomed to	6	5	7.3	6.1
- Unreasonable to practice	10	7	12.2	8.5
- Never done	5	2	6.1	2.5
- Unknown	2	0	2.4	0
Not taking medicine without professional direction				
- No	37	52	45.1	63.4
- Not accustomed to	9	7	11.0	8.6
- Unreasonable to practice	29	20	35.4	24.4
- Go to private clinic	3	0	3.7	0
- Taken Salol – Menthol	2	1	2.4	1.2
Mixture	1	1	1.2	1.2
- Taken Stomachica Mixture	0	1	0	1.2
- Taken Household Drug	1	0	1.2	0
- Unknown				

Table 4.7.1.4 (cont.)

Self-care Behavior	Number		Percentage	
	Before	**After**	**Before**	**After**
Not taking any antidiarrheal agent				
- No	39	55	47.6	67.1
- Not accustomed to	11	6	13.4	7.3
- Unreasonable to practice	21	17	25.6	20.7
- Go to private clinic	1	0	1.2	0
- Taken Noxy (Loperamide)	1	3	1.2	3.7
- Taken Lomotil (Diphenoxylate + Atropine)	9	0	11.0	0
- Unknow	0	1	0	1.2
More frequent breast feeding in under-5-year old age group				
- Not known	0	2	0	2.4
- No under-5-year old children	2	0	2.4	0
- Yes	51	54	62.2	65.9
- Not accustomed to	10	17	12.2	19.8
- Unreasonable to practice	6	3	7.3	3.6
- Go to private clinic	2	0	2.5	0
- No feeding	6	2	7.3	2.4
- Breast feeding as usual	1	0	1.2	0
- Unknown	4	4	4.9	4.9
Have the meals as usual				
- Yes	70	75	85.4	91.5
- Not accustomed to	5	0	6.1	0
- Unreasonable to practice	7	6	8.5	7.3
- Unknown	0	1	0	1.2

Table 4.7.1.4 (cont.)

Self-care Behavior	Number		Percentage	
	Before	After	Before	After
Increase one meal per day for two weeks				
- Yes	32	42	39.0	51.2
- Not accustomed to	16	20	19.5	24.4
- Unreasonable to practice	32	18	39.0	22.0
- Not known / No experience	0	1	0	1.2
- Unknow	2	1	2.5	1.2
Consult with health personnel, if not getting better in one day.				
- Yes	80	82	97.6	100.0
- Not accustomed to	2	0	2.4	0

From Table 4.7.1.4, all respondents agreed with the self-care item about "Going to consult with health personnel, if not getting better from acute diarrhea in one day", after implementation of the program (from 97.6% before to 100% after). The respondents also agreed with "Eating clean food more frequently in small quantities", "Drinking freshly dissolved ORS" and "Having the meals as usual" for self-care of acute diarrhea in higher percentages after program implementation (80.5% to 84.2% , 72.0% to 82.9% and 85.4% to 91.5% respectively).

The agreement of respondents about the other self care behaviors, such as "Not taking medicine without professional direction" , "Not taking any antidiarrheal agent", "more frequent breast feeding in under-5-year old age group", and "increase one meal per day for two weeks" also increased also after implementation of the program, but the percentages did not reach 70% (45.1% to 63.4% , 47.6% to 67.1% , 62.2% to 65.9% and 39.0% to 51.2% respectively).

4.7.1.5 Information of Respondents' Perception about Diarrhea

Table 4.7.1.5: Number and Percentage of Respondents by Perception about diarrhea (n = 82)

Perception about Diarrhea	Number		Percentage	
	Before	After	Before	After
History of getting diarrhea last year (1997)				
- In under-5-year old age group				
No	18	18	21.9	22.0
Yes	4	5	4.9	6.1
No under-5-year children	60	58	73.2	70.7
Unknown	0	1	0	1.2
- In 6-12-year old age group				
No	60	62	73.2	75.6
Yes	16	12	19.5	14.7
Forgotten	0	1	0	1.2
Unknown	6	7	7.3	8.5
- Respondents				
No	61	62	74.4	75.6
Yes	20	19	24.4	23.2
Unknown	1	1	1.2	1.2

Table 4.7.1.5 (cont.)

Perception about Diarrhea	Number		Percentage	
	Before	**After**	**Before**	**After**
Definition of diarrhea as liquid stool symptom				
One time/day	2	8	2.4	9.8
Two times/day	8	3	9.8	3.7
More than 2/day	4	3	4.9	3.6
Three times/day	34	49	41.5	59.8
More than 3/day	14	6	17.0	7.3
Four times/day	6	3	7.3	3.6
More than 4/day	13	9	15.9	11.0
Unknown	1	1	1.2	1.2
Definition of diarrhea as watery stool symptom				
One time/day	18	37	22.0	45.1
Two times/day	17	16	20.7	19.5
More than 2/day	2	2	2.4	2.4
Three times/day	16	17	19.5	20.8
More than 3/day	10	1	12.2	1.2
Four times/day	6	2	7.3	2.4
More than 4/day	9	5	11.0	6.1
Unknown	4	2	4.9	2.5
Definition of diarrhea as mucous stool with blood symptom				
One time/day	36	61	43.9	74.4
Two times/day	11	9	13.4	11.0
More than 2/day	4	2	4.9	2.4
Three times/day	10	5	12.2	6.1
More than 3/day	2	0	2.4	0

Table 4.7.1.5 (cont.)

Perception about Diarrhea	Number		Percentage	
	Before	After	Before	After
Four times/day	4	2	4.9	2.4
More than 4/day	4	0	4.8	0
Never got it	3	0	3.7	0
Unknown	8	3	9.8	3.7
What type of diarrhea frightened the respondents?				
Mucous stool with blood	67	55	81.7	67.1
Watery stool	6	14	7.3	17.1
Watery and mucous stool with	1	1	1.2	1.2
Blood Liquid stool	4	3	4.9	3.7
Liquid and mucous stool with	3	7	3.7	8.5
blood	1	2	1.2	2.4
All				
Would self-care protect oneself from diarrheal dehydration?				
Yes	82	82	100.0	100.0
What is the first medical intervention used in liquid stool treatment?				
No experience	1	0	1.2	0
ORS	13	18	15.9	22.0
Go to private clinic	19	17	23.2	20.7
Go to health center/nursing	24	14	29.3	17.1
room at				
Work place	23	30	28.0	36.6
Go to hospital	0	0	0	0
Take herbal medicine	0	3	0	3.6
Symptom observation	2	0	2.4	0
Unknown				

Table 4.7.1.5 (cont.)

Perception about Diarrhea	Number		Percentage	
	Before	After	Before	After
- For 6-12-year old age group				
ORS	18	27	22.0	32.9
Go to private clinic	18	16	22.0	19.5
Go to health center	22	12	26.8	14.6
Go to hospital	12	19	14.6	23.2
Go to buy drug	11	5	13.4	6.1
Symptom observation	0	3	0	3.7
Unknown	1	0	1.2	0
- For respondents				
No experience	2	0	2.4	0
ORS	25	33	30.5	40.2
Go to private clinic	13	8	15.9	9.8
Go to health center	16	8	19.5	9.8
Go to hospital	5	14	6.1	17.0
Go to buy drug	17	14	20.7	17.1
Symptom observation	2	4	2.4	4.9
Wait until get well	0	1	0	1.2
Unknown	2	0	2.5	0
What is the first medical intervention used in watery stool treatment?				
- For under-5-year old age group				
No experience	1	0	1.2	0
ORS	12	19	14.6	23.2
Go to private clinic	18	17	22.0	20.7
Go to health center/nursing room	26	10	31.7	12.2
At workplace	13	25	15.9	30.5
Go to hospital				

Table 4.7.1.5 (cont.)

Perception about Diarrhea	Number		Percentage	
	Before	After	Before	After
Go to buy drug	2	1	2.4	1.2
Take herbal medicine first	1	0	1.2	0
Symptom observation	7	10	8.5	12.2
Unknown	2	0	2.4	0
- For 6-12-year old age group				
ORS	20	29	24.4	35.3
Go to private clinic	14	12	17.1	14.6
Go to health center	23	10	28.1	12.2
Go to hospital	6	19	7.3	23.2
Go to buy drug	11	4	13.4	4.9
Symptom observation	7	8	8.5	9.8
Unknown	1	0	1.2	0
- For respondents				
No experience	2	0	2.4	0
ORS	21	32	25.6	39.0
Go to private clinic	9	8	11.0	9.8
Go to health center	15	8	18.3	9.8
Go to hospital	5	14	6.1	17.1
Go to buy drug	17	12	20.7	14.6
Symptom observation	10	7	12.2	8.5
Wait until get well	0	1	0	1.2
Unknown	3	0	3.7	0
What is the first medical intervention used in treatment of mucous stool with blood?				
- For under-5-year old age group				
No experience	1	0	1.2	0
ORS	1	7	1.2	8.5

Table 4.7.1.5 (cont.)

Perception about Diarrhea	Number		Percentage	
	Before	After	Before	After
Go to private clinic	18	22	22.0	26.8
Go to health center/nursing room	11	9	13.4	11.0
At workplace	42	39	51.2	47.6
Go to hospital	1	1	1.2	1.2
Go to buy drug	6	4	7.3	4.9
Symptom observation	2	0	2.5	0
Unknown				
- For 6-12-year old age group				
ORS	1	7	1.2	8.5
Go to private clinic	18	17	22.0	20.8
Go to health center	13	11	15.9	13.4
Go to hospital	37	38	45.1	46.3
Go to buy drug	6	5	7.3	6.1
Symptom observation	6	4	7.3	4.9
Unknown	1	0	1.2	0
- For respondents				
No experience	2	0	2.4	0
ORS	0	11	0	13.4
Go to private clinic	14	15	17.1	18.3
Go to health center	16	11	19.5	13.4
Go to hospital	34	32	41.5	39.0
Go to buy drug	9	8	11.0	9.8
Symptom observation	7	5	8.5	6.1

From Table 4.7.1.5, it was found that most of the respondents' family members did not get diarrhea in the last year (1997). There were 6.1% of under-5-year old age group, 14.7% of 6-12-year old age group and 23.2% of respondents who experienced diarrhea lest year (from after-implementation data).

About the definition of liquid stool diarrhea, the greatest percentage of respondents after program implementation defined each type of diarrhea as follows :

- 59.8% defined liquid stool diarrhea as liquid stool defecation three times per day, it increased 18.3% compared with the before-implementation data percentage.
- 45.1% defined watery stool diarrhea as watery stool symptom one time per day, it increased 23.1%
- 74.4% defined mucous stool with blood as the symptom one time per day, it also increased 32.5%

Most of respondents, 81.7% before and 67.1% after the program implementation, were frightened with bloody mucous stool. Only 17.1% of them were frightened with watery stool.

All of the respondents agreed that self – care would protect them from diarrheal dehydration. Most of the respondents chose different medical interventions in liquid stool treatment for the under-5-year old age group, 6-12-year old age group and themselves; 36.6% of them took the under-5-year old age group to the hospital, 32.9% and 40.2% used ORS for the 6-12-year old age

group and for themselves respectively. For watery stool treatment, it was similar to the liquid stool treatment but, in treatment of bloody mucous stool most of the respondents decided to get hospital care for their family and themselves corresponding to their fear of bloody mucous stool.

4.7.2 Qualitative evaluation findings

4.7.2.1 Adolescent focus group discussion

Four focus – group discussions of diarrheas educated adolescents were performed in the four target schools on $24^{th} - 26^{th}$ February 1998.

The first group had 12 adolescents from Sriracha School, the second had 10 adolescents from Surakakwidhayakhom School, the third has thirteen from Bung Sriracha School and the last one consisted of ten adolescents from Thungsukhalpithaya School. There were 27 males and 18 females. Nearly all of them (42 in 45) lived with their parents. Twenty – seven of them (60%) did not tell about diarrheal information because their parents worked at night (17 in 45). Some of them said " There was no chance to talk with my parents because my rest time was their working time. " " I only gave the pamphlet to them ". or " The letters in the pamphlet were too small for my grandmother." or " I forgot because it was a long time waiting for them to get good temper." The other said "I had many duties at home to do and when I finished, I forgot to tell them." or " I played a lot and forgot."

The remainder (18 in 45), who had told their parents/caretakers, had the problems too. Some said "I told my grand-parents, but they didn't listen to me." or " I reminded my grandmother about hand washing with soap and water, but she ignored what I had told her."

All of them, except one, have had acute diarrhea and 35 in 45 were different in defining diarrhea; some of them defined it as liquid stool symptoms two times per day, the others defined it as three or more. One of them defined it as watery stool symptoms two times per day, while another defined it as liquid stool one time per day. The one, who never got diarrhea as he can remember, said "I have normal defecation one time a day, I do not like to take any food except at meal-time".

About appropriate family health communicator, all of them did not agree with the training target being like them. They said "We are too young to speak confidentially with our parents." or " We think that our knowledge is not sufficient for the role of family health reminder or communicator; you better train the older like students in Mathayom 4-6." However, they wanted to know about diarrhea and gave an idea that the knowledge about health must be divided in context corresponding to each level of school education from elementary school, secondary to high school and college level, and instructed by health personnel or experienced persons.

The amazing finding from further dialogue in each of the focus group discussions, was the number of parent hours needed by the 12 – 13 years old adolescents. Forth three of them (95.6%) needed 5 – 7 parent hours per day and the two remainders needed 12 and 24 parent hours. One of the 43 adolescents added " Our parents would spend at least two hours in the morning and three hours in the evening for us"

4.7.2.2 From teacher-parents focus group discussion

This group discussion consisted of one teacher, one father, five mothers and three caretakers (one elder sister and two grand-mothers). All of them agreed with the list of acute diarrhea prevention and self-care behaviors and thought that they could practice these. Some of them said "Those behaviors are the right things we ought to do, but some items are not easy to practice." They all did not know how much time their children needed them being nearby. They were astonished, when I talk about the grown children up to 12-13 years of age still needing 5-7 parent hours per day. The only teacher in the group said "Parents are the most important element for their children's development, even though they have grown up to be teenagers, but most parents always think that teachers must take the task instead." The teacher added that no one knows the children as much as their parents and their parents were good models for health behavior, not the children. Some mothers said about their children that " I am too tired to pay attention to what my child is telling us." " I think that my child is teenager now, he/she wants to talk and play with their friends, not me."

And one father said " I do not live with my child, I come to visit him/her once a week."

4.8 Discussion

The findings above, revealed that only 57.3% of parents/ caretakers heard diarrheal information from the target adolescents. Therefore, 42.7% of them did not receive messages (see Table 4.7.1.2), contrasting with data collected by qualitative focus group discussion among the adolescents, showing 60.0% (27 in 45) of the adolescents did not transfer the diarrheal information to their parents / caretakers because of the two important constraints (see Chapter I p.7). First, they had no chance to talk with their parents and the second, their parents / caretakers pay less attention to what they had said. These corresponded to the findings resulting from teacher–parents group discussion (see 4.7.2.2)

Besides those mentioned above, data concerning diarrheal information source (Table 4.7.1.2) was analyzed to see the differences in agreement of behavior practicing between the respondent group (49 in 82) which received diarrheal information from adolescent called Group1 and the other group (33 in 82) which received the information from other sources only (Group 2). This data led to a new issue:

"Are there any differences in behavior practicing agreement between before and after the 1998 program implementation, both in the same group and different groups?"

To answer this question, the Mc Nemar Test and Chi-square Test were used in further data analysis. The results showed there were statistically significant differences as follows (see Appendix H in detail):

Group 1

There were nine differences on acute diarrhea prevention behavior and three on self-care in respondents' agreement, between before and after the program implementation. The results showed an increase of respondents agreeing with the behaviors as listed below:

Prevention behavior

- Hand washing before eating.
- Being more careful when diarrhea occurred.
- Drinking of boiled water.
- Boiling / warming food purchased from street-food venders.
- Collection of garbage in covered bin.
- Cleaning the floor as directed.
- Burying the feces in the ground.
- Washing the clothes as directed.
- Cleaning of anus with soap and water.

Self-care behavior

- Drink of freshly dissolved ORS.
- Not taking medicine without professional direction.
- Not taking any antidiarrheal agent.

Group 2

There was not found any difference in the respondents (Group 2) between before and after the program implementation.

However, significant differences on the behaviors agreement between respondents, group 1 and group 2, (both before and after) were found. Those differences (see Appendix I) are shown in the table below:

Behavior	Statistical Significant Differences	
	Before Implementation	After Implementation
Acute diarrhea preventing behavior		
Hand washing after defecation	✓	✓
Hand washing before eating		✓
More careful of hand washing and cleanliness of food and drinking water when diarrhea occurred in family		✓
Refusal to eat unheated stale food	✓	
Drink boiled water		✓
Collect household garbage in covered bin		✓
Clothes will be washed as directed		✓
Self-care behavior		
Drinking freshly dissolved ORS		✓
Not taking medicine without professional Direction		✓
Not taking antidiarrheal agent		✓
Increase one meal per day for two weeks	✓	✓

Group1 (after the program implementation) was different in behaviors practicing agreement (only 6 in 20 items of acute diarrhea prevention behavior and 4 in 8 items of self-care behavior), however, 57.1% (28 in 49) of the respondents in this group did not only receive diarrheal information from the adolescents but also from other resources (see Table 4.7.1.2). Table 4.7.1.2 also showed that two of respondents received diarrheal information from "the adolescents only" as information source before the program implementation but after program implementation the two did not receive the information from the adolescents (from the field data collection). That was why the two were added in group 1 (from 47 to 49) of further data analysis. Those findings made me change the target group in my proposed study (from adolescents to their parents/caretakers).

About acute diarrhea prevention and self-care behaviors, most of the respondents were pretty good in learning and exhibited good short term memory after program implementation, but it would be lost if there were no rehearsals. Besides what I had said above, there were many interesting data about diarrhea morbidity rates from the respondents.

- The numbers of under-5-year old age group, 6-12-year old age group and respondents (from Before-test answered questionnaires about "who got diarrhea last year (1997)" were 4 (4.9%) , 16 (19.5%) and 20 (24.4%) respectively (see Table 4.7.1.5)
- Most of respondent's houses (43%) had four members, 24.4% of them had five, 11.6% had three , 9.3% had six, 4.7% had eight , 4.6% has

seven and 2.3% had two (see Table 4.7.1.1), thus the total member in 86 households were 395 persons and 44 in 395 were sick last year (1997.)

Therefore, the morbidity rate of acute diarrhea was $\frac{44 \times 100{,}000}{395}$ = 11,139.24 per 100,000 population. The reported acute diarrhea morbidity rate of Chon Buri province in 1997 was 2,111/100,000 pop. It was approximately five times less than the calculated morbidity rate (11,139.24).

If the data above is valid, it would show that the adolescents' parents/caretakers have their own competency for acute diarrhea self-care, but lack prevention awareness. Especially, awareness of the warning sign symptoms for watery stool diarrhea and liquid stool diarrhea because, my data exercise showed that 81.7% of respondents would be frightened by bloody mucous stool, while only 7.3% and 4.9% were frightened by watery stool and liquid stool respectively which were changed to 17.1% and 3.7% respectively, in the two weeks after the 1998 provincial education program was implemented. This showed the weak point: people's lack of understanding the danger of diarrheal dehydration which would have been explained to them by diarrhea educators or diarrheal information communicators.

These were the reasons, as explained in detail in Chapter II, that made me choose participatory action research (PAR) at all levels beginning from the village community in my proposal to increase people's understanding of what they were expected to learn, applying their own knowledge, their own strategy

and their own needs to get long term memory storage. This type of memory will remind them, to practice good personal hygiene behavior for diarrhea prevention and to be aware of each type of diarrhea warning sign, and to manage self-care for body dehydration firstaid.

However, there were noticeable points for respondents agreement of acute diarrhea prevention and self-care behaviors:

- How appropriate is the required behavior?
- What is the percentage of required behavior items that will be appropriate to people's lifestyle?

These led to an additional data exercise.

The data were collected from 23 purposive samples consisting of four public health administrative officers (PHAO), ten public health technical officers (PHTO), three clerical officers, three office workers and two public hired motorcyclist by marking the acute diarrhea prevention and self-care behaviors list to answer two questions:

1. In your opinion, what are the appropriate acute diarrhea prevention behaviors which, if one who practices, will prevent acute diarrhea?
2. What are the appropriate acute diarrhea self-care behaviors, for those who treat oneselves or their family members that will protect them or family members from body dehydration danger?

The results are shown in table 4.8.1

Table 4.8.1 : Number of Voters Making a Decision of Appropriate Behaviors, by Occupation

Behavior	Voters N = 23					Total Voters
	PHAO n = 4	PHTO n = 11	CLERK n = 3	Worker n = 3	Motor-Cyclist n = 2	
1. Acute Diarrhea Prevention Behaviors (A.D.P.B.)						
1.1 Hand washing with water and soap before cooking	3	9	2	1	1	16
1.2 Hand washing after defecation / sanitary latrine using	4	11	2	2	2	21
1.3 Hand washing ... before eating	3	7	2	3	1	16
1.4 When diarrhea occurred in family, be more careful of hand washing and cleanness of drinking water	4	9	2	1	0	16
1.5 Eating only freshly prepared food	4	7	2	1	2	16
1.6 Awareness of prepared food covering	4	11	3	2	1	21
1.7 Refusal to eat unheated stale food	4	8	2	2	1	17
1.8 Refusal of inadequately heated food	4	9	2	3	0	18
1.9 Drinking only boiled water	3	6	0	0	2	11
1.10 Boil/warm the food purchased from street-food vendors	4	6	1	1	2	14
1.11 Washing cooking utensils and eating accessories with detergent solution	4	5	3	2	1	15

Table 4.8.1 (cont.)

Behavior	Voters N = 23					Total Voters
	PHAO n = 4	PHTO n = 11	CLERK n = 3	Worker n = 3	Motor-Cyclist n = 2	
1.12 Having defecation in sanitary latrine	4	10	3	3	2	22
1.13 Awareness of sanitary latrine's cleanliness	4	6	3	3	2	18
1.14 Food preparation floor is higher than 50 cm. (60 cm.)	4	5	3	0	1	13
1.15 Not to throw garbage out Carelessly	4	7	3	2	1	17
1.16 Collect household garbage in covered bin	4	8	3	1	0	16
1.17 In the case of accidental watery defecation on the floor. Clean the floor by moving feces out as much as possible to the toilet and then wash with detergent and water	4	6	2	1	0	13
1.18 In the case of accidental watery defecation on the ground, the feces would be buried	4	4	0	2	1	11

Table 4.8.1 (cont.)

Behavior	Voters N = 23					Total Voters
	PHAO n = 4	PHTO n = 11	CLERK n = 3	Worker n = 3	Motor-Cyclist n = 2	
1.19 In the case of the feces spattered on clothes, rinse it out with water into toilet before washing the clothes as usual	4	9	2	1	0	16
1.20 Clean anus with soap and water after defecation	4	6	3	2	1	16
Total	77	149	43	33	21	23
	Mean Voters for each item = 16.15 ≈ 16					
2. Self-care behaviors for acute diarrhea primary treatment (S.C.B.)						
2.1 Eating clean food more frequently in small quantities	4	9	3	3	1	20
2.2 Drinking freshly dissolved ORS (use in 24 hr.after being dissolved)	4	11	2	3	2	22
2.3 Not taking medicine without professional direction	3	8	2	3	1	17
2.4 Not taking any antidiarrheal agent	3	6	0	0	1	10
2.5 More frequent breast feeding in under-5-year old age group	4	8	2	1	1	16
2.6 Have the meals as usual	4	9	0	1	2	16
2.7 Increase one meal per day for two weeks.	3	1	0	0	0	4
2.8 Consult with health personnel, if not well in one day	4	9	3	3	2	21
Total	29	61	12	14	10	126
	Mean Voters for each item = 15.75 ≈ 16					

Findings from this exercise (Table 4.8.1) revealed that voters means of acute diarrhea prevention behaviors (ADPB) and self-care behaviors (SCB) for acute diarrhea primary treatment were approximately equal (16.15 and 15.75) to 16.00. Thus the behavior item which was equal to or greater than 16 ($\geq$ 16) must be an appropriate behavior. In conclusion, I could get fourteen appropriate acute diarrhea prevention behavior items (70% of theoretical list) and six appropriate self-care behavior items (75% of theoretical list) to be the required behaviors needed to prevent people from acute diarrhea and to protect them from body dehydration danger due to severe diarrhea.

There was an interesting point showing knowledge of acute diarrhea prevention and self-care behaviors in motorcyclists being greater than that expected by a public health technical officer (PHTO) who has responsibility in acute diarrhea control.

The data showed that the PHTO voted only nine items of acute diarrhea prevention behaviors (No. 1.2 to 1.10) and only three items of self – care behaviors (No. 2.1 , 2.2 and 2.8) as appropriate behaviors, while the two motorcyclists voted all except prevention behaviors number 1.4, 1.8, 1.16, 1.17 and 1.19, and self-care behavior number 2.7. Thus the target behaviors or required behaviors of my proposal would emphasize on number of items in the two lists of the behaviors (acute diarrhea prevention and self-care behaviors).

About the impact target, I really needed to reduce acute diarrhea morbidity rate in all age groups by 50% but, I was not sure about the validity of the acute diarrhea episode information, especially in adults, received from interviews because of the personal sensitive effect (Love, Edgar J., Personal communication, December 11st, 1998), contrasting with acute diarrhea in under-5-year old children which would be known to everyone in the family. Thus, the impact target of the proposed study would be changed to reduce 50% of acute diarrhea incidence rate in under-5-year old age group instead.

4.9 Lessons Learned

The main aim of the data exercise is to field test my proposed study design on the target population and sample, the method to get target sample and the instruments for observation of behavior changes and relevant information, especially information for setting specific objectives. The results showed that anyone would have changed their behavior if they needed to; and what they needed to be changed must be appropriate to their lifestyle, rehearsal supported and continuously assessed by proper supervisors at all levels of the health care infrastructure. (see Figure 4.9.1)

From learning mentioned above, I decided to choose an appropriate method, necessary to succeed in achieving target required behaviors on acute diarrhea prevention and self-care, called "PAR".

4.10 Limitations and Constraints

The first constraint is limitation of time. I had only five weeks for data exercise planning and pre-test evaluation before the implementation of the 1998 provincial health education program which was automatically set as my proposed study.

Secondary, looking for adolescents' houses was a very difficult task because the address sampling was done from the list of purposive school-pupil registration.

The third constraint was concerned with ability and loyalty of interviewers which affected questionnaire completion and reality of answers. It was noticeable that only one (in 14) interviewer reported what happened during her field survey and wrote in detail to explain the data she got.

Fourth, there were no monitoring activities after four days of teaching trip except my post-test evaluation.

Fifth, the communicable disease control (C.D.C.) section, acting as the program manager, was too busy to pay attention to program development after having heard the unsuccessful results from my data exercise and her own quantitative evaluation of pre and post test knowledge of adolescents.

Finally, the Chonburi Provincial Public Health Administrative Committee consisting of the heads of the sections who, since then, are responsible for many cooperative and individual programs and therefore they could not pay any more attention to the unity of cooperation for the program development and let it be the C.D.C. section's duty only, after finishing the adolescents teaching course.

Besides these, the health personnel in the target area were not concerned with the diarrheal problem and had no active participation in the program activities. They were working by order, therefor, "no monitoring" was "no order." This was an important reason why I chose PAR in my proposal.

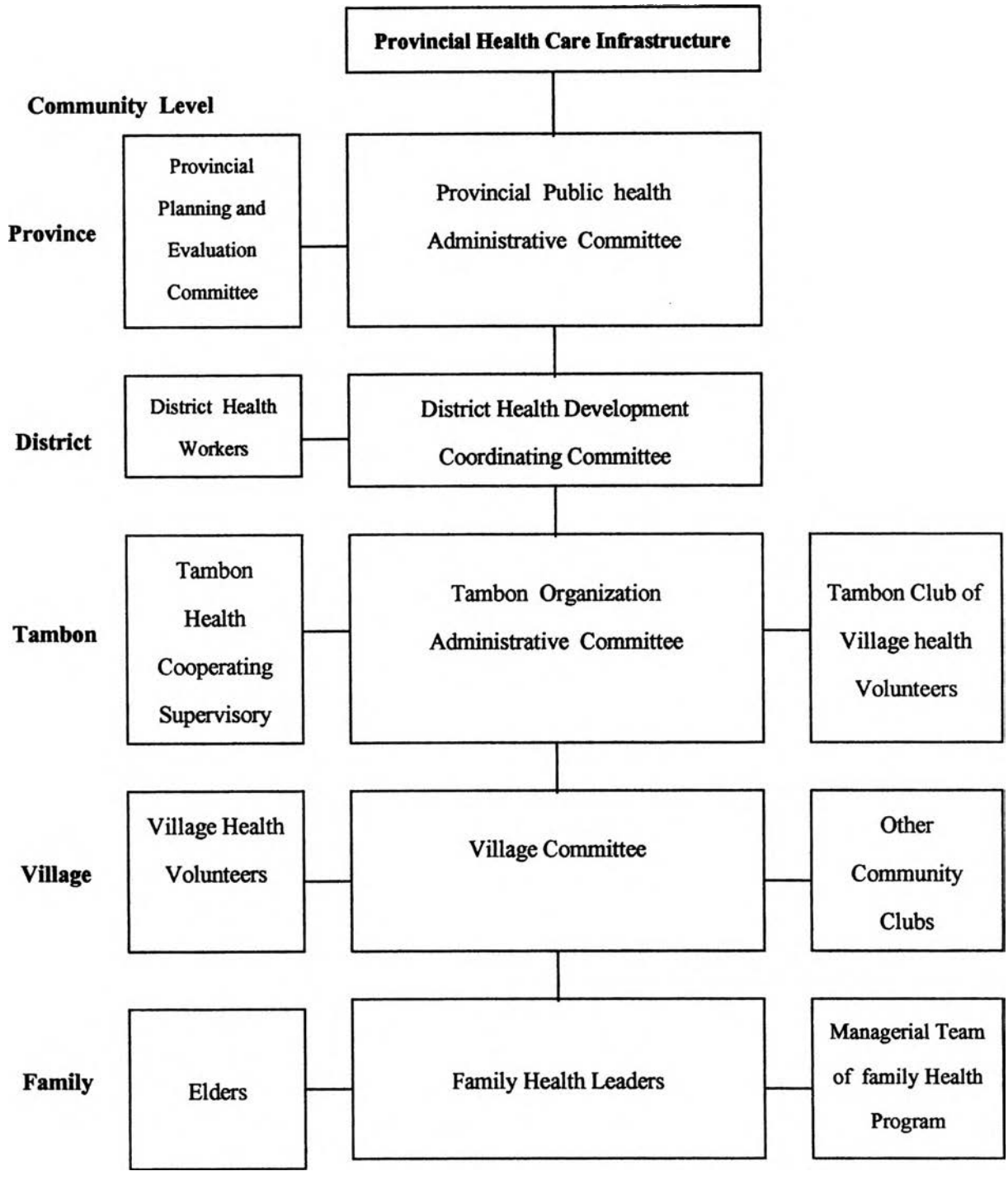
4.11 Conclusion

To change parent's behaviors through their children is not appropriate to Thai culture and lifestyle, and to change adults without their participation is invalid. Thus the strategy must be substituted by PAR and questionnaires must be used as both basic quantitative data collection instruments and guidelines for dialogues in group discussions.

However, the one point to be aware of in running PAR, is that the researcher should not destroy health care infrastructure in each level of community, but, strenghthen it, Community, in my study, is a group of living together and/or united by shared interests, religion, nationality, occupation, job etc. The relevant community, according to provincial health care infrastructure, would be separated into five levels as shown in Figure 4.9.1. This relevant community will select target areas to solve the problem by the commitment resulting from group discussions thus the community in the target area is the target community (see Figure 3.2.5.1)

Learning from the data exercise mentioned above made me modify my proposal to a new one (see Chapter 3).

Figure 4.9.1 Provincial health care infrastructure



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