

CHAPTER III

PROPOSAL

Participatory Action Research (PAR): an Intervention in Diarrhea Education Program to Sustain Required Behavior for Acute Diarrhea Prevention and Self-care among U-Tapao Villagers, Muang District, Chon Buri

3.1 Introduction

Acute diarrheal diseases are one of the leading causes of childhood mortality and morbidity in the developing countries. Although, dehydration from acute diarrhea of all etiologies and in all age groups can be safely and effectively treated by the simple method of oral rehydration, using a single fluid of mixture known as Oral Rehydration Salts (ORS) dissolved in water to form ORS solution (WHO/CDD/SER/80.2 REV.1, 1984: 3), and also are a significant cause of morbidity and lost working time among adults and older children in many countries.

Thailand is a country that has geographical location and climate as strong enabling factors for diarrheal disease communication as human behavioral factors. When comparing the two groups of these factors, natural and behavioral, human

behavior is easier to be developed or modified. However, successful action of any public health program for human behavior development needs three requirements; scientific knowledge base, political will and social strategy, like three legs of a stool (Atwood, et al. 1997); leading to form rehearsal encoding and retrieval for long term store of memory (Schiffman & Kanuk, 1991).

In Chon Buri, during 1991-1997, the acute diarrhea morbidity rate in all age groups of people has continually increased (see Figure 1.1) although many public health programs have been implemented. However, Watana, et al.(1997) found that 40% (12 in 30 respondents) did not know “Diarrhea is a communicable disease”, and ORS use rate was lesser than 50%(11 in 30).

Furthermore, the results from the data exercise (see Chapter IV) suggested many weak points of 1998 Chon Buri Provincial Diarrhea Education Program to Promote Health Behavior with the objective of decreasing the acute diarrhea morbidity rate in Sriracha district. Thus, this program was modified to the new proposal “Participatory Action Research (PAR): an Intervention in Diarrhea Education Program to Sustain Required Behaviors for Acute Diarrhea Prevention and Self-care among U-Tapao villagers, Muang District, Chon Buri”.

The recent Chon Buri acute diarrhea morbidity rate in 1997 and 1998 (Jan.-26th Oct.) showed a noticeable point, that Muang district’s acute diarrhea morbidity rate was the least among districts having a rate greater than 1,000. These were 1,538 and 1,279 per 100,000 population (see Tables 3.1.1 and 3.1.2). From further data analysis by Tambon (see Table 3.1.3), it was found that Tambon Nong-Maidang had the greatest morbidity rate of acute diarrhea (3,896 per 100,000 population) and U-

Tapao village had the greatest morbidity rate of acute diarrhea(see Table 3.1.4 and 3.1.5) Tambon Nong-Maidang is more suitable for research at low cost than the area in Sriracha district which was the target area in my data exercise, because this Tambon is not far from my office and my house. My house is ten kilometers away from the office and Tambon Nong-Maidang is half way(see Figure 3.1.2). This is convenient for me to work in this community and the Muang District Health Officer was very interesting in my presentation of conceptual framework on the 3rd November 1998.

Figure 3.1.1 Map of Chon Buri (Chon Buri).

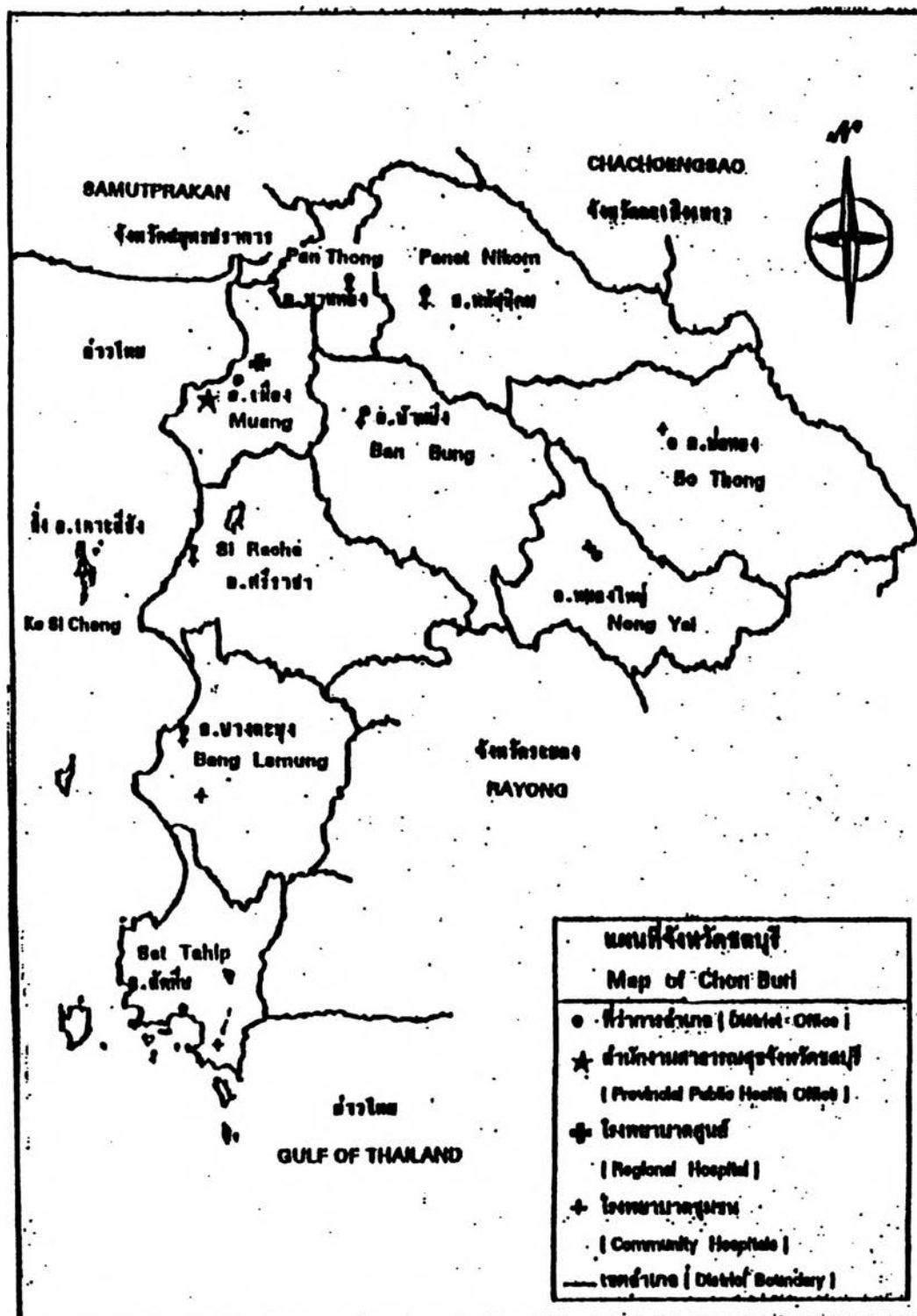


Figure 3.1.2 Map of Muang District.

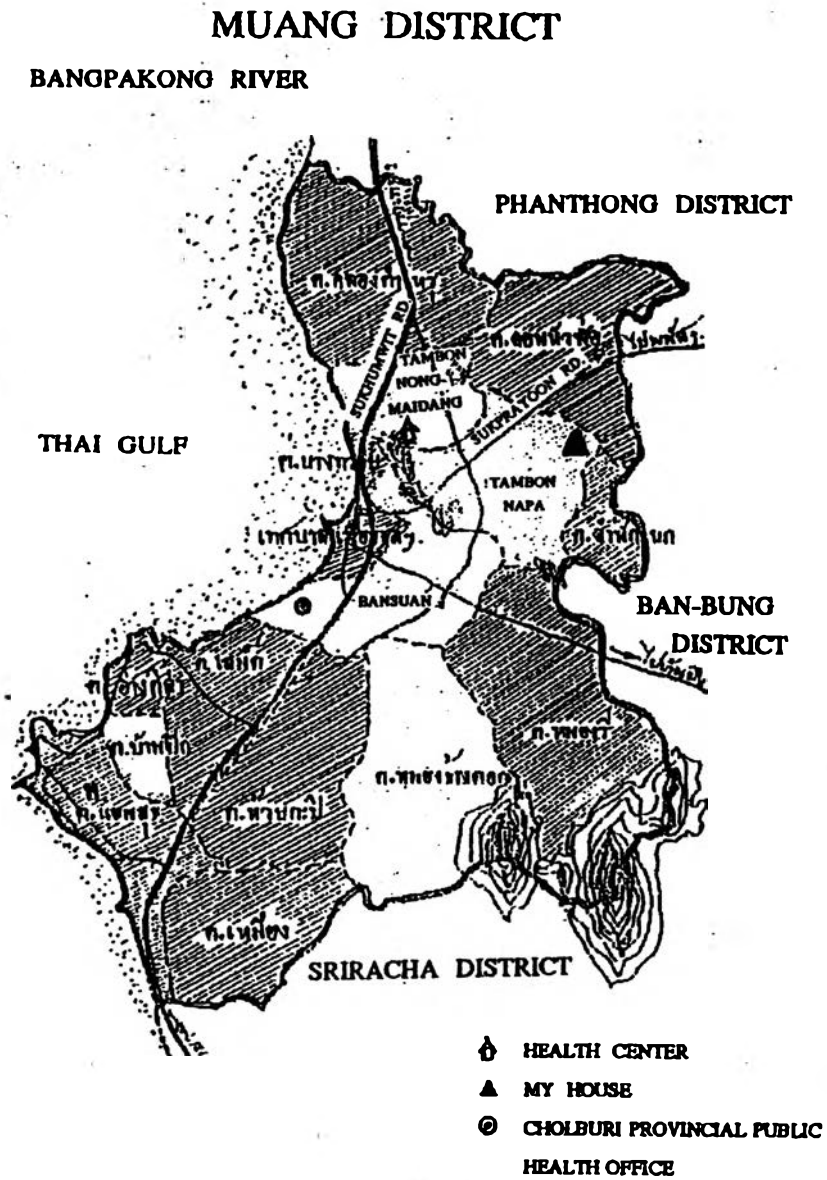


Table 3.1.1 : Chon Buri Acute Diarrhea Morbidity Rate by District (1997)

District	Population	Cases/Death	Morbidity Rate
/Subdistrict*			/100,000
Muang	237,449	3,651/2	1,538
Ban-Bung	85,571	2,887	3,374
Nong-Yai	20,818	895	4,299
Banglamung	46,9118	3,198/3	2,177
Phanthong	45,015	1,792	3,981
Phanutnikhom	148,247	3,312/1	2,234
Sriracha	164,912	2,837/1	1,720
Kao-Sichang	4,392	258	5,874
Sattahip	115,052	806	701
Boa-Thong	40,667	1,451	3,568
Kao-Chan*	31,962	217	679
Total	1,009,041	21,304/7	2,111

Source: Planning Section of Chon Buri Provincial Public Health Office

Table 3.1.2 : Chon Buri Acute Diarrhea Morbidity Rate by District
(Jan.-26 Oct. 1998)

District	Population	Cases/Death	Morbidity Rate
/Subdistrict*			/100,000
Muang	241,382	3,089/3	1,279
Ban-Bung	86,936	2,354/1	2,707
Nong-Yai	21,010	505/1	2,403
Banglamung	152,532	2,475	1,622
Phanthong	45,652	1,616	3,539
Phanutnikhom	117,243	2,583/1	2,203
Sriracha	170,217	3,247/1	1,907
Kao-Sichang	4,419	223	5,046
Sattahip	115,582	882/2	763
Boa-Thong	41,514	1,763	4,246
Kao-Chan*	32,138	1,012	3,148
Total	1,028,625	19,749/8	1,920

Source: Planning Section of Chon Buri Provincial Public Health Office

Table 3.1.3 : Acute Diarrhea Morbidity Rate of Muang District by Tambon (1997)

Tambon (Urban area excluded)	Number of Village	Population	1997	
			Case/Death	Morbidity Rate
Bansuan	10	57,130	979/1	1,714
Nong-Ree	14	10,127	232	2,291
Napa	12	12,739	256	2,010
Nong-Khangkok	8	6,069	119	1,961
Don-Hualoa	7	3,824	117	3,060
Nong-Maidang	7	8,933	348	3,896
Bang-Sai	6	11,928	166	1,392
Klong-Tamru	6	4,657	115	2,469
Mhuang	5	6,106	60	983
Ban-Puek	7	4,162	34	817
Huay-Kapi	7	10,649	249	2,338
Samed	8	16,374	340/1	2,077
Ang-Sila	5	5,654	55	973
Samnakaboke	6	2,755	18	653
Total	108	161,107	3,088/2	1,917

Source: Muang District Health Office, Chon Buri

Table 3.1.4 : Nong-Maidang Acute Diarrhea Morbidity Rate by Village (1997)

Village	No.	Population	1997	
			Case/Death	Morbidity Rate
Sripalo	1	2,310	54	2,338
Teenkhao	2	1,761	28	1,590
Huay-Saliga	3	1,219	33	2,707
Gunthung	4	1,257	48	3,819
Samor-Gaphark	5	716	18	2,514
U-Tapao	6	853	57	6,682
Nong-Maidang	7	817	19	2,326
Unknown	-	-	91	-
Total		8,933	348	3,896

Source: Nong-Maidang Health Center

Table 3.1.5 : Nong-Maidang Acute Diarrhea Morbidity Rate by Village (Jan. 30th July 1998)

Village	No.	Population	January – 30 th July 1998	
			Case/Death	Morbidity Rate
Sripalo	1	2,350	26	1,106
Teenkhao	2	1,781	29	1,628
Huay-Saliga	3	1,239	7	565
Gunthung	4	1,277	15	1,175
Samor-Gaphark	5	736	5	679
U-Tapao	6	893	16	1,792
Nong-Maidang	7	838	13	1,551
Unknown	-	-	16	-
Total		9,114	127	1,394

Source: Nong-Maidang Health Center

Data in Table 3.1.4 and 3.1.5 suggested that U-Tapao Village would be the first priority for the proposal target area, because of its greatest morbidity rate in acute diarrhea.

3.2 Background and Rationale

3.2.1 Importance of Education Program

Dalis (1994: 290) pointed out that much of learning happened when someone who knew something and transferred that on to others who did not. These message senders might be parents, other family members, peers or teachers but, if changes did not occur in teaching and learning, all other changes had little value. He also reminded us that effective health instruction hinges on two issues- what to teach and how to teach it.

Ratnaike and Chinner (1994: 283-287) provided us with a summary of research which made it abundantly clear that health education either alone or in conjunction with other types of programs to manage diarrhea, was essential and ultimately could be more effective in reducing the prevalence and morbidity of diarrheal disease than other programs used singularly. And Klepp, K. et al.(1994:1157-62) pointed out in their research on the School Based Program, AIDS Education for Primary School Children in Tanzania: an Evaluation Study, that HIV/AIDS education for sixth and seventh grades (average age, 14.0 years) can foster increased knowledge about and communication regarding HIV/AIDS and the program appears to have succeeded in making AIDS a topic of discussion outside, as well as in, the school setting. This was because pupils more frequently discussed AIDS with their parents, other relatives, and

religious leaders following the intervention. Therefore the researchers suggested that a health education program might increase the community's awareness of HIV/AIDS.

3.2.2 Diarrhea Education Program for Behavior Change Promotion

As we agree with Dalis (1994: 290-293) about the central thrust of health instruction that must promote health enhancing behavior and reduce health compromising behaviors within the context of a domestic society, and the theoretical view point of Richmond and Kotelchuke (1991) for health promotion or preventive services delivered by health care providers to promote a healthier environment and lifestyle (Atwood et al., 1997: 1604) which could be expressed as health policy model (see Figure 1.2).

The first component of this model is knowledge base, defined as scientific and administrative data base upon which to make decisions. The second component is political will, defined as society's desire and commitment to develop and to fund new programs or to support and to modify existing program. The final component is social strategy which had been defined as the plan by which we apply people's knowledge base and political will to improve or initiate program.

The two concepts mentioned above were adapted into one model (see Figure 2.2.1) to show how required health behaviors would be changed by a diarrhea education program.

3.2.3 Participatory Action Research (PAR)

Khamnuansilpa P. said on the 10th July 1998 at the Northeastern Regional Development and Training Center on Primary Health Care that operational research was modified to use in health service sustainable development. It consisted of three important stages of operation. First, problem identification. Second, determination of problem solving strategy. Finally, strategic trial and evaluation.

Many techniques were used in operational research especially quantitative techniques such as system framework, nominal group techniques, Delphi technique and appreciation, influence and control (AIC) etc. Khamnuansilpa, Samanasang, and Sila (1998) also concluded that PAR was a modified model of operation research (OR) in the view point of social development.

Rains, J.W. and Ray, D.W. (1995: 257) said about PAR that “ PAR is a combination of community participation, research, and action that supports local insights and abilities regarding the resolution of community issues. Rather than following a restricted and rigid research methodology, the process of inquiry is social and flexible, involving a collaborative interaction between the community and the researcher (Kelly 1990)... and also is part of an “emerging paradigm of cooperative experiential inquiry, which simply stated, is research that was with and for people rather than on people” (Reason 1988).

PAR became a strategy to develop leaders for health, promote community health and enhance the community's competency in problem solving. It can equip people for self-reliance and healthiness. PAR supports aggregate-based practice and

gives the opportunity for model development generating knowledge (research) and planning for community change (action) interpreted in a way that enhances both (Rains and Ray, 1995).

Titchen and Binnie (1994) suggested criteria of action research as follows:

- (1) An initial observational study is conducted to generate a theorized account of the situation one is trying to change and to develop tentative principles for action.
- (2) Tentative, explanatory principles for action are devised from the data, relevant social science theory, empirical work and personal knowledge of change.
- (3) Action hypotheses, underpinned by a theoretical understanding of the situation, are generated to test and refine the principles in the field (i.e. in situation type X, strategies type Y, will achieve goals type Z).
- (4) Action is the operationalization of the principles and is therefore, theoretically informed.
- (5) Focussed, open questions are developed to determine the effectiveness of the action in achieving the goals (theory testing).
- (6) Theoretical sampling of people and situations is carried out.
- (7) Hypotheses are falsified or refined for further testing until clear explanatory principles can be generated.
- (8) At the same time, observational studies are conducted, asking open questions to get at the actors' perspective on the action and its effects and to gain an understanding of appropriate actions which achieve the goal.

- (9) An attempt is made to theorize and generalize findings across nurses, patients and health professionals – using three ways:
- (i) providing readers with a rich description and explanation of the solution, they are able to make judgements about whether the findings of our specific case are relevant to their particular situations because our rich description invites them to say. “This is not like my situation”,
 - (ii) drawing on substantive social science theory, existing empirical data and personal knowledge when relevant,
 - (iii) establishing abstraction and generalizations across individual cases. Brown and McIntyre (1993) assert that such generalization can be seen as naturalistic and as forming hypotheses to be carried from one case to the next, rather than being seen as general laws applying across a population. These generalizations together create a provisional theoretical framework to make explicit the participants’ experiences of the processes, strategies and outcome of change (Titchen and McIntyre, 1993).
- (10) Findings and theorization are laid open to public scrutiny.

However, Ramasuit, P. (1992) concluded that PAR consisted of 9 stages as follows:

1. Community preparation for target community selection and finding research participants

2. Research participants training for learning and understanding about problem identification, causes, strategy for problem solving, responsibility, delegation, planning, coordinating, monitoring, budgeting and evaluation
3. Participatory planning of research methodology for formative evaluation
4. Data collection by the trained research participants
5. Data analysis
6. Community reporting of findings for public scrutiny and community discussion for an alternative way or strategy to solve the target problem or other constraints
7. Program modification by the community
8. Implementation
9. Monitoring and evaluation by participatory action between researcher team and community

These steps are like Svetsreni, T.'s 10 steps of ladder for community development (1995). Thus the modified PAR guideline was formed for empowering the community to participate in health problem solving (see Appendix A).

3.2.4 PAR at the Relevant Levels of Community

According to criteria number nine of action research suggested by Titchen and Binnie, emphasized on relevant communities (these were nurses, patients and health

professionals). Thus, the proposed study needed to theorize and generalize findings by asking open questions to get each level of the community's perspective (see Provincial Health Care Infrastructure in Figure 4.9.1) on the action and its effects, to gain an understanding of appropriate actions which achieve the goal and to provide a rich description and explanation of the solution to the target community to make judgements about whether the findings from each stage of the study are relevant to their particular situations, their knowledge and create a provisional theoretical framework to make explicit the participants' experiences of the process, strategies and outcome of change.

3.2.5 The Target Community and Research Participants

The target community of the proposed study is village level(U-Tapao)consisting 283 houses with 860 population and10 village health volunteers (Nong-Maidang health center survey information, 1998). Most people here attend Nong-Maidang health center which is not longer than four kilometers from the village. The health center has four persons managing its activities. One is the head (she is a midwife), another one is a public health technical officer and the other two are public health officers. There is one community health service station run by five village health volunteers but it is very near to the health center therefore most villagers select to attend the health center instead. Besides those mentioned above, there are seven factories here (four of them are in the industrial estate) and most of the villagers, especially in the labor age group (15-59 years of age), are employed. A temple with a primary school in it has been settled in

this village and there are 74 children of the under-5-year old age group (the latest survey, Oct-Dec. 1998).

The expected research participants of proposed study will be divided into two groups, one as a technical researcher team consisting of provincial, district and Tambon governmental public health officers (both administrative and technical) and another group is the village researcher team consisting of ten village health volunteers and other participatory active villagers (such as community club leaders, village leader, temple leader, informal leaders or anyone who will be selected by village committee).

The Tambon Administrative Organization will form an acute diarrhea committee through district office coordination, from the two groups of research participants. This stage of community empowering (family health leaders imprecating may take one month. The acute diarrhea committee will have focus group discussion to develop diarrhea learning modules, teaching material, a plan to educate the family leaders to create awareness of acute diarrhea prevention and self-care behaviors and to develop strategies to get rid of their health problem. Thus, a note-taker or/and tape recorder will be used cooperating with questionnaires, guidelines and weekly feedbacks for building dialogues during the PAR process to get community concepts or commitments on health problem solving (see Appendix A). This stage will produce a social strategy for completing the three important factors (Scientific knowledge base, Political will and Social strategy) of health enhancing behaviors promotion and health compromising behaviors reduction (see Figure 2.2.1). That is why it will take about one month for this stage.

Monthly evaluation will be done three times as formative or follow-up evaluations (in the 2nd, 3rd and the 4th month of the study) of required behaviors and one time of summative evaluation (in the last month of the study). The impact evaluation (incidence rate of acute diarrhea in under-5-year age group) will be done as pre-operating, on-going and post-operating evaluations (in the 1st, 5th and the last month). Therefore, the conceptual framework of this proposal is as shown in Figure 3.2.5.1

3.3 Research Questions

This purposed study will emphasize answering the questions below:

3.3.1 How much the family leaders develop themselves after 6 months of PAR activities in the following:

1. Perception of warning signs of severity of acute diarrhea
2. Perception of communication or transmission cycle of acute diarrhea
3. Perception benefits from self-care behaviors and ORS solution usage
4. Acute diarrhea prevention behaviors
5. Acute diarrhea self-care behaviors

3.3.2 How much the acute diarrhea incidence rate of under-5-year age group would be reduced?

3.4 Objectives

3.4.1 General Objective

The general objective of this study is to examine the effectiveness of PAR as an intervention sustaining of required behaviors on acute diarrhea prevention and self-care among all family health leaders at U-Tapao village Tambon Nong-Maidang, Muang District, Chonburi and thus reduce the incidence of acute diarrhea in the under-5-year age group as the impact.

3.4.2 Specific Objectives

The specific objectives are:

1. To increase the percentages of family health leaders who have correct knowledge about warning signs of severity of acute diarrhea.

2. To increase the percentages of family health leaders who have correct knowledge about transmission cycle of acute diarrhea. To detect the constraints on practicing the target behaviors.
3. To increase the percentages of target family health leaders who have correct knowledge about Oral Rehydration Salt benefits and constraints to use it.
4. To increase the ORS utility rate, in the case of acute diarrhea occurring in family, among family health leaders
5. To empower all the target family health leaders behaving on at least 70% of the required items of acute diarrhea prevention behaviors (14 in 20 items).
6. To empower all the target family health leaders behaving not less than 75% of required items of acute diarrhea self-care behaviors (6 in 8 items).
7. To detect the association between demographic factors and the percentage of required items of acute diarrhea prevention and self-care behaviors practiced by family health leaders.
8. To detect the association between socio-economic factors and the percentage of required items of acute diarrhea prevention and self-care behaviors practiced by family health leaders.
9. To acquire alternative behaviors on acute diarrhea prevention and self-care.
10. To reduce at least 50% of the acute diarrhea incidence rate in under-5-year age group.

3.5 Specific Definition

Family health leader is anyone in a household who was selected by family members to be trained to know about healthy behaviors and to know how to work with other family leaders and a village health volunteer in the community' s activity. Family health leader also takes the role as a family health information communicator and acts as a model person having appropriate healthy behaviors for it's family (Conclusion from Primary Health Care Plan Handout according to the 8th National Health Development Plan).

3.6 Research Methodology

3.6.1 Research Design

The research design of this study is participatory action research (PAR) through diarrhea education using both quantitative and qualitative techniques of research data collection and impact evaluation according to Calder's basic stages of evaluation (Calder, 1994: 16). Sequences of actions in each step of PAR process conceptual framework (Figure 3.2.5.1) are as the followings:

The step of relevant community preparation will take one month long. It may take shorter or longer period, depending on efficacy of each relevant community.

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3.6.2 Study Population

The first target population of this study is the family health leaders from 283 houses (in U-Tapao village). Their behaviors on acute diarrhea prevention and self-care will be observed and evaluated. The second target population is parents/caretakers of 74 children of under-5-year age group who know about children's illness, especially their acute diarrhea episodes.

3.6.3 Sampling Method and Samples

1. Samples in the study are census and will be divided into 10 clusters of 28-29 family health leaders in each according to the number of village health volunteers (10 persons). This group of samples is expected to be interviewed by village research participants (village researchers) with quantitative questionnaires and to be observed by technical researcher teams for acute diarrhea prevention and self-care behaviors.
2. The ten groups of six-twelve purposive sample (Babbie, 1995: 253) in each would be selected amongst family health leaders group. The data will be collected by technical researchers using informal focus interviews or focus group discussions to check validity and reliability of information given by respondents in the first group of the sample.

3. The second group of the sample is all parents/caretakers of under-5-year age group which can answer the questions concerning to their children's acute diarrhea episodes. The sample in this group might be the same person as in the family health leader group, if he or she was father or mother or caretaker of the children.

3.6.4 Data Collection

A. Relevant issues

Relevant issues of research questions in the study are concerned with the following:

- Perception of warning signs of severity of acute diarrhea amongst family health leaders
- Perception of the transmission cycle of acute diarrhea amongst family health leaders
- Perception of benefits and constraints in oral rehydration salt (ORS) solution usage amongst family health leaders
- Acute diarrhea prevention behaviors of family health leaders
- Acute diarrhea self-care behaviors of family health leaders
- Acute diarrhea incidence rate of under-5-year old age group

Incidence = Number of new cases in a fixed time period

Number of people at risk

(Streiner, Norman and Munroe Blum, 1989: 67)

- B. Plan for relevant variables, methods and target groups for data collection using Appendix J as the guideline for discussion among research participants
- C. Instruments construction plan using Appendices A-F as guidelines for the discussion

The data of the variables analyzed from the issues mentioned above will be collected by village researchers using quantitative questionnaires which may be modified from those showed in the appendices (B, C, D, E, A & G); and data recorded during informal focus interview or focus group discussion by technical researchers would be used for checking the data from quantitative interviews to avoid bias.

The data about the number of new cases before and after PAR activities would be collected from parents or caretakers by village health volunteers.

3.6.5 Instruments for Data Collection

Instruments for data collection were constructed on the basis of research questions analysis by the research participants. They are the results of group discussion on seven guidelines, five questionnaires, one checklist and one record form (see Appendices A-F, & J). Some of the drafted questionnaires for interview and guidelines to build dialogues were modified from that used in the data exercise (Chapter IV). The drafted checklist and record form were adapted from Liumrangsri, Suang (นพพรวง

เหลื้ชมร้จสี่), *Volunteer's Manual for Rural Food-sanitation*, Health Department, Ministry of Public Health(ISSN 974-7955-81-4) and **Community Health Survey Form for Volunteer** designed by Watana Kwanreun (จว้ญเรื้ชน ว้ฒนง), 1993 respectively.

3.6.6 Data Analysis

1. Using descriptive statistics for descriptive data.
2. Chi-square test will be used for testing the change in percentages of family health leaders who have correct knowledge about acute diarrhea warning sign of severity, transmission cycle of acute diarrhea, oral rehydration salt benefits, and for testing the change of ORS utility rate among family health leaders.
3. Chi-square test will be used for association testing between demographic, socioeconomic factors and percentage of family health leaders who practice the required percentage of acute diarrhea prevention behavioral items; and between demographic, socioeconomic factors and percentage of family health leaders who practice the required percentage of acute diarrhea self-care behavioral items.
4. The impact evaluation, the reduction in acute diarrhea incidence rate among under-5-year old age group, will be tested by Chi-square test.

3.7 Study Period

Six months

3.8 Evaluation

This study will be evaluated according to the specific objectives as:

1. To describe the changes on acute diarrhea prevention and self-care behaviors by checklist and observation at the before, on-going(weekly and monthly evaluation), and after PAR process.
2. Comparison of data at before, on-going and after PAR process.
 - 2.1. To measure the percentage of family health leaders who have correct knowledge about warning sign of severity of acute diarrhea, transmission cycle of acute diarrhea, ORS benefits.
 - 2.2. To measure the utility rate of ORS among family health leaders, when acute diarrhea occurs in their family.
 - 2.3. To measure quantitatively the changes in percentages of family health leaders who practice on the required percentages of acute diarrhea

prevention and self-care behavioral items, comparing with qualitative data.

3. Association detection

3.1. To detect the association between demographic, socioeconomic factors and percentage of family health leaders who practice the required percentage of acute diarrhea prevention behavioral items.

3.2. To detect the association between demographic, socioeconomic factors and percentage of family health leaders who practice the required percentage of acute diarrhea self-care behavioral items.

4. To describe the alternative behaviors to promote sustainability in practicing the required behaviors among the target family health leaders.

5. To measure the reduced incidence rate of acute diarrhea among under-5-year age group resulting from PAR process compared with that from before PAR_process.

6. To detect weekly, the constraints in PAR process for strategic modification, by discussion and observation.

3.10 Budget

The tentative budget of the study based on the present trend of US \$ exchange in Thailand (1 US \$ = 37 Baht).

Table 3.10 : Budget for Research Implementation

Items		US \$
1. Wage		
Researcher (1)	1x6x300 US \$	1,800
Co-researcher (1)	1x6x200 US \$	1,200
Researcher participants (10)	10x29x5x1 US \$	1,450
2. Refreshments and gifts for focus group discussion	6x30 US \$	180
3. Transportation cost	56x10 US \$	560
4. Stationery	500 US \$	500
5. Miscellaneous	500 US \$	500
Total		6,190

3.11 Summary

One of the most important intervention promoting sustainability of behavior change is PAR. The aim of this proposed study is to examine effectiveness of PAR as an intervention in sustaining required behaviors on acute diarrhea prevention and self-care among all family health leaders at U-Tapao village, Tambon Nong-Maidang, Muang District, Chon Buri and thus reduce the incidence of acute diarrhea in the under-5 years old age group as the impact. The research design of this study is participatory action research (PAR) through diarrhea education using both quantitative and qualitative techniques in research data collection.

People who participates in the study could develop their competence in problem solving and self-reliance for health. Because PAR is a combination of community participation, research and action that supports local insight and abilities regarding the resolution of community issues; rather than following a restricted and rigid research methodology, the process of inquiry is social and flexible (Kelly, 1990)... and also is part of an “emerging paradigm of cooperative experimental inquiry, which simply stated, is research that was with and for people rather than on people (Reason, 1998)” (cited in Rain & Ray, 1995: 257).

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