FACTORS RELATED TO MOTHER'S BEHAVIOR IN ORDER TO GIVE ORS TO CHILDREN UNDER FIVE YEARS OLD AT KUMA HEALTH CENTER, INDONESIA

ADJI SENO

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.....

Mr.Adji Seno
Candidate

.....

Assoc.Prof. Charnchudhi Chanyasanha
D.V.M.,M.P.H.,Ph.D.
Major-Advisor

.....

Lect. Nithat Sirichotiratana
Dr.P.H.
Co-Advisor

.....

Lect. Sutthi Jareinpituk
D.D.S., M.P.H., Ph.D.
Co-Advisor

.....

Assoc. Prof. Rassmidara Hoonsawat
Ph.D.
Dean
Faculty of Graduate Studies

.....

Assoc. Prof. Sirikul Isaranurug
M.D., Dip. Thai Board of Pediatrics
Chair
Master of Primary Health Care Management
ASEAN Institute for Health Development

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on
March 15, 2005

.....
Mr.Adji Seno
Candidate

.....
Assoc.Prof. Charnchudhi Chanyasanha
D.V.M., M.P.H., Ph.D.
Chair

.....
Lect. Nithat Sirichotiratana
Dr.P.H.
Member

.....
Asst. Prof. Pongrama Ramasoota
Ph.D.
Member

.....
Lect. Sutthi Jareinpitak
D.D.S., M.P.H., Ph.D.
Member

.....
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Mahidol University

.....
Assoc.Prof.Sirikul Isaranurug
M.D., Dip. Thai Board of Pediatrics
Director
ASEAN Institute for Health Development
Mahidol University

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FACTORS RELATED TO MOTHERS BEHAVIOR IN ORDER TO GIVE ORAL REHYDRATION SALT (ORS) TO CHILDREN UNDER FIVE YEARS OLD, AT KUMA HEALTH CENTER, INDONESIA.

ADJI SENO 4737944 ADPM / M

M.P.H.M. (PRIMARY HEALTH CARE MANAGEMENT)

THESIS ADVISORS: CHARNCHUDHI CHANYASANHA, D.V.M., M.P.H., Ph.D., NITHAT SIRICHOTIRATANA, Dr.P.H., SUTTHI JAREINPITUK, D.D.S., M.P.H., Ph.D.

ABSTRACT

A cross-sectional study was conducted using a self-administered questionnaire among 368 mothers, who had children with diarrhea or past history of diarrhea during January 12 – 31, 2005. The most important points are the factors related mothers' behavior in order to give Oral Rehydration Salt (ORS) to children under five years old.

The questionnaire elicited information about personal characteristics (age, occupation, education, family income, religion, knowledge, and perception), health worker behavior, and family support towards mothers' behavior in order to give ORS.

The result showed that approximately 71.5 % of mothers used ORS for treating diarrhea among children under five years old. Descriptive data found that 98.3 % of mothers had good knowledge on ORS, and 59.4 % of mothers had appropriate use of ORS.

There were significant relationships between mothers' perception and health workers behavior with mothers' behavior in order to give ORS (p-value < 0.05).

The fact that health workers who have high level behavior are more likely to influence mothers' behavior on ORS used emphasizes the need to support and indicating the importance of health worker behavior on future ORS used.

KEY WORDS: RELATED FACTORS/ MOTHERS' BEHAVIOR / ORS / UNDER 5 YEARS / CHILDREN / INDONESIA.

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LIST OF ABBREVIATIONS

ORS	: Oral Rehydration Salt
ORT	: Oral Rehydration Treatment
OPD	: Out Patient Disease
IPD	: In Patient Disease
SSS	: Salt Sugar Solution
WHO	: World Health Organization
HBM	: Health Belief Model
CFR	: Case Fatality Rate
PRECEDE	: Predisposing, reinforcing, enabling cause in educational diagnosis and evaluation.
PROCEED	: Policy, regulatory, organizational constructs in educational and environmental development.

CHAPTER 1
INTRODUCTION

1.1 Rationale and justification

Diarrhoeal disease is one of a major cause of morbidity and mortality among children under five years old. Recent estimates indicated that diarrhoeal diseases cause nearly five million deaths per year in children under five years old in the developing world. An analysis carried out by The World Health Organization (WHO) in 2000 was shown in Figure 1.

This disease is the health problem in developing countries, including Indonesia either rural or urban areas. It' s character found with an endemic and frequency occurred as outbreaks and created with many victims. Based on current of overcoming of diarrhoeal diseases, the case management in society for control and tackled are enough. However, the problems of diarrhoea in society are still remain of the big problems.

In Indonesia, the disease has been tackled since 1974, with the development of drinking water and latrine program, up to present diarrhoeal diseases represent the basic causes of morbidity and mortality, specially among infants and child under 5 years olds (1).

According to the national household health survey 1995 in Indonesia, diarrhoea represents the third causes of death in infant, and the third cause of death of children under five years old. By the national socio-economic survey 1998, Indonesia results showed that health complaint among other things was diarrhoea, and it be able to the causes of mortality and be able to occur the outbreak.

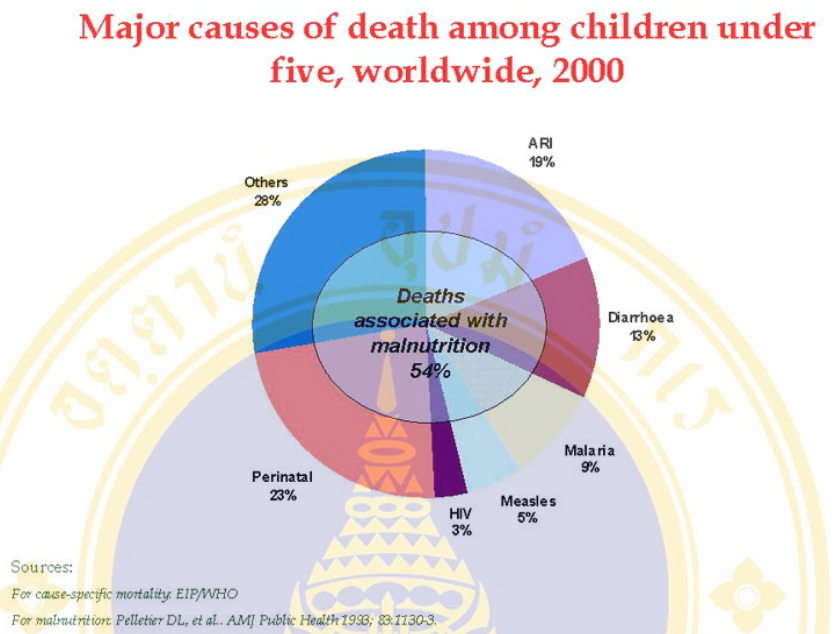

Figure 1 **:** Major causes of death among children under five, worldwide, 2000

Table 1 Rank and proportion of diarrheal diseases, infant and under five years old mortality, Indonesia

Survey year	Infant mortality		Under 5 years old mortality	
	Proportion (%)	Rank	Proportion (%)	Rank
1986	15.5	3	-	-
1992	11	2	-	-
1995	13.9	3	15.3	3
2001	9.4	3	13.2	2

Source: Health Department 2002.

During the year 2000, occurred a lot of patients' diarrhoea in hospital, number of out patients (OPD) was 4,364,786, and the number of in patient department (IPD) was 278,711. While in health center, OPD was 4,086,075, with morbidity rate 21.45 per 1,000 diarrheal patients, and in patient 125,463, with case fatality rate (CFR) was 5.27

per 1,000. The most important cause of death due to diarrhoea was dehydration that was effect to dehydration and lost of electrolyte salt in diarrhoea's faeces (2).

In the North Sulawesi Province, condition of diarrhoea was rather high with an occurrence high number of patient. During the year 2000 to 2003, an incidence rate of diarrhoea was constant, while in the year 2004 prevalence rate equal to 12.6 per 1000. Diarrhoeal cases were very high at Sangihe District, represent one of region in North Sulawesi Province.

According to the profile health office of Sangihe District in the year 2000, diarrheal disease took fifth possession of the sequence from pattern of outpatient, and forth possession of the sequence for the inpatient of children under five years old. Effort to prevent in diarrhoeal disease at Sangihe District consist of case finding.prevention and also to tackle outbreak.

Table 2 Pattern of out patient diseases under five years old at Health Center Sangihe District 2000

No.	Diseases	Patient	
		Number	%
1	ARI	12,116	35.48
2	Other disease of respiratory	5,952	17.43
3	Allergy	3,865	11.32
4	Skin infection	3,583	10.49
5	**Diarrhea**	**3,069**	**8.98**
6	Clinic Malaria	2,410	7.06
7	Pneumonia	1,005	2.94
8	Bronchitis	753	2.21
9	Muscular pain	736	2.20
10	Hookworm	662	1.94
	T o t a l	34, 151.	100

Source: Sangihe District profile

During January to December 2003 there were 5,323 cases of diarrhoea with one died, the number of prevalence was 26.97 per 1,000 people. The occurrence of diarrheal in children under five years old in Sangihe District during the same period was 23.33 per 1000 people, and 56.4 % used oral rehydration salt (ORS) (2).

This disease can be caused by several causes such as viral, bacterial and parasitic infection. Rotavirus infection has been known that it was a cause of acute diarrhoea in infants and children under five years old. Other causes incidence of diarrhoea, possible by nutrition circumstance, environmental sanitation, socio-economic, behavior and others. The study about the risk factors of mortality and morbidity found were socio-economics, condition of personal hygiene and dirty housing (3).

Indonesian government had made efforts to improve the program to tackle diarrhoea through various methods, for example by developing rehydration oral using ORS according to WHO standard (4), which comprise of the electrolyte, glucose, and sucrose. It is more cheaper and effective to overcome non-cholera dehydration. The ORS effort developed for tackling of early diarrhoea by giving the form of package. If there is not in the place, substitution with salt , sugar solution (SSS) can be prepared and used. ORS packing is practical, easy to find, easy to use, its composition precisely to prevent dehydration for children under five years old get diarrhea.

To prevent incidence dehydration and to decline mortality rate effected from diarrhea, it required by role of active of community, especially from family and health worker. The active society role can be influenced by knowledge and perception toward diarrhoeal diseases.

Since 1961, Indonesian government had arranged diarrhoea eradication activity through to tackle of cholera disease and gastroenteritis programs. Fundamental activities were communication, information and education with aim to improve the knowledge. and perception of society behavior in management of diarrhea.

Management of this patient at home emphasized on food giving, and looking for the health worker to help.

The factors which influence to the behavior of a mother in order to give ORS to children with getting diarrheal disease were knowledge, education, perception, existence of health service, and family support (5).

According to Green & Kreuter (5), health behavioral problem was included in order to prevent diarrhea, influenced by three primary factors, composed of: predisposing factors, enabling factors, and reinforcing factors. This research concluded that not much diarrhoeal children who took ORS by mother were suffering. This was occurred 2 % in Thailand. The ORS for five years old child with diarrhoea can prevent from dehydration. It was indicated that the mother behavior or family in handling child who suffering from diarrhoea still require to be improved (6).

By the profile of the Health Office, Sangihe District in 2003, 2,597 of ORS packing was distributed to society by the Health Center (2). However, it was not evaluate in this action.

1.2 Research question

What are the factors that related with mothers behavior in order to give ORS to children under five years old?

1.3 Research Objective

1.3.1 General Objective

To identify the factors related to mother behavior in order to give ORS to children under five years old at Kuma Health Center, Sangihe District, North Sulawesi Province.

1.3.2 Specific Objectives

1. To determine the personal characteristic factors of mothers at Kuma Health Center, Sangihe District.
2. To define the predisposing factors among mother knowledge and mother perception in order to give ORS to children under five years old.
3. To identify the enabling factors of health workers' behavior.
4. To identify the reinforcing factors on family support.
5. To analyze the relationship of personal characteristic factors, predisposing factors, enabling factors and reinforcing factors with mother behavior in order to give ORS.

1.4 Conceptual framework

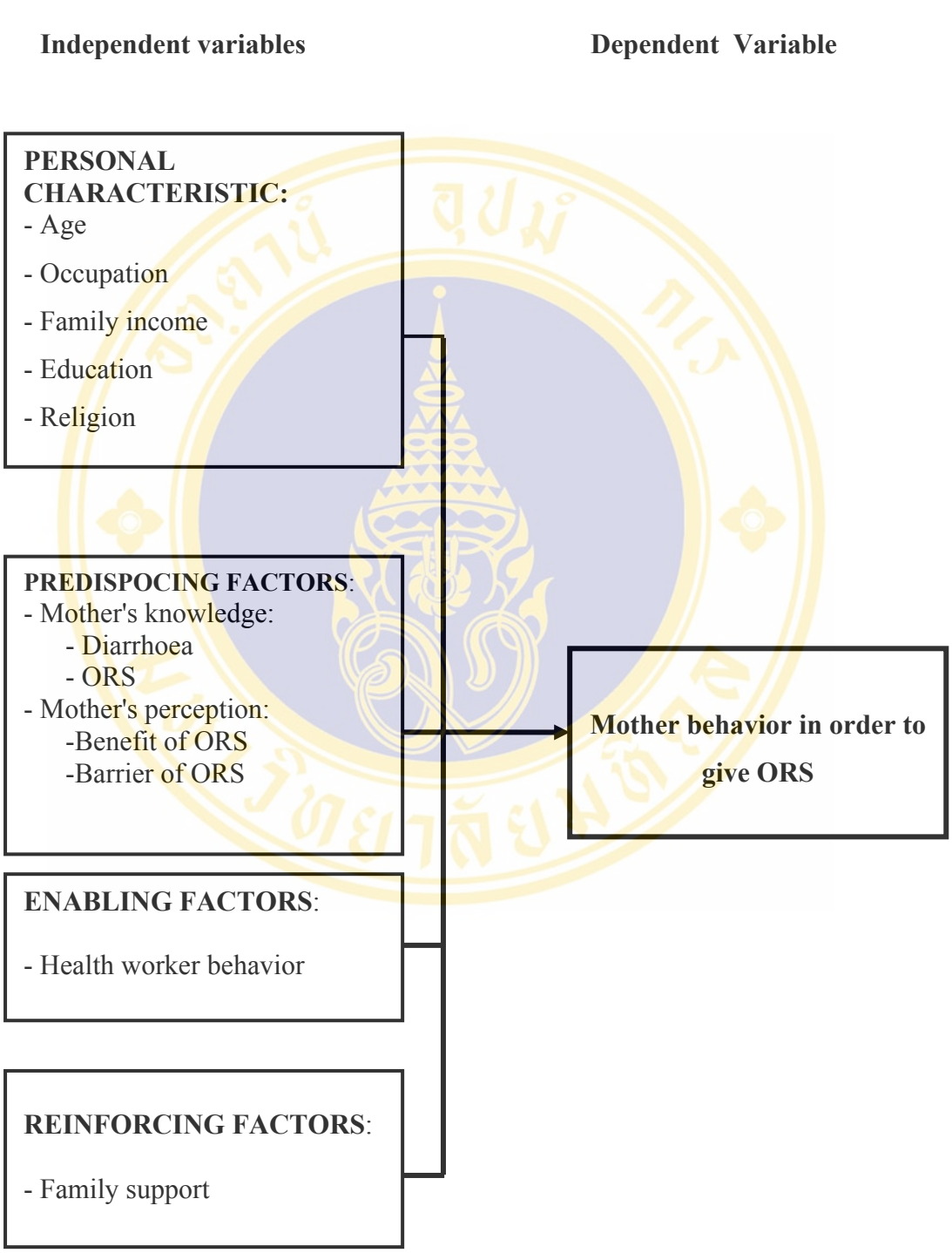

Figure 2: Conceptual frame work.

1.5. Operational definition

1.5.1 Diarrhea

Diarrhea is usually defined as passage more than three times of liquid or watery loose stool, one watery and bloody mucus stool during a period of 24 hours (WHO, 1990) (4).

1.5.2 Personal characteristic

Age refers to completed age in years of the mother. It is a basic factor indicated the difference of physical and psychological development as well as the maturity or ability of each person.

Occupation refers to the activity of mother, theirs work for obtaining income, it is an indicator of the socio-economic status, which influenced the living of individual. It is a significant component of self care potential, which effected the health behavior.

Family income refers to total income per month of the family, which comes from all family members.

Education refers to the educational attainment level of mother's ability in learning and understanding of health information, such as elementary, primary, high school, and graduated university.

Religion refers to the belief of mother, divided in Christian, Muslim, Catholic, Hindu and Buddhism.

1.5.3 Knowledge

The mother' s knowledge refers in understanding about diarrhoea, recognize on sign of severe diarrhoea and dehydration, understanding about how to prepare ORS or SSS, what is the time for giving ORS to children with acute diarrhea, how long they

prepare ORS solution and keep in normal temperature, how long should be continued or stopped ORS feeding.

1.5.4 Perception

Refers to the mother benefit on ORS, and refers to mother assessment about the usefulness of ORS such as ORS can save children lives; ORS can prevent dehydration from acute diarrhea.

In addition, it refers to the perception of mother on barriers of ORS, mother assessment about any difficulties to get when they want to use ORS.

1.5.5 Health worker

Health worker refers to the types of health care providers, as government employees or health volunteer and health care.

1.5.6 Family support

Refers to the supported by family member, about financial and information or advice about ORS.

1.5.7 Oral rehydration salts (ORS)

ORS refers to fluid for treatment of diarrhea to prevent dehydration. In this study, it refers to:

A mixture of glucose and salt introduced by WHO (ORS packet).

Home made salt sugar solution (SSS).

1.6 Hypotheses

1. There is relationship between personal characteristic factors with mother's behavior in order to give ORS.
2. There are relationships between knowledge and perception with mother's behavior in order to give ORS.

3. There is relationship between health worker behavior and mothers' behavior in order to give ORS.
4. There is relationship between family support and mother's behavior in order to give ORS.

1.7 Limitation of study

The limitation of this study is data collection period, mothers will go to work in the rice field; questionnaire will be done only in the evening or holiday.

1.8 Research benefits

1. To know the mother behavior giving ORS to their children.
2. To understand what are the significant factors of mother's behavior in giving ORS.
3. To apply helpful information to promote more comprehensive on giving ORS to the children under five years old.

CHAPTER 2
LITERATURES REVIEW

2.1 Diarrhea

2.1.1 Global situation of diarrheal disease and importance of ORS use.

Diarrheal disease is the common health problem all over the world especially for developing countries. Can not deny, diarrhea disease effects all age group but the children under five years old are more vulnerable for this disease.

From the 8th Asian Conference on Diarrheal Disease, Dr Satyawati H. said that in Indonesia 50 % of respiratory and diarrhea causes of death infant (7), and other study from Dr. Retes shown that each year, around 200,000 deaths occurred in the Americas among children under five years of age due to preventable diseases such as diarrhea and acute respiratory infection (8). Also mentioned for these reasons whose communities and citizens have little awareness of the importance of personal and environmental hygiene. Andreas G. explained that children ages 12 months were especially prone to contracting diarrhea by touching and by putting objects into their mouth and exhibited certain characteristics, namely watery stools with flecks of mucus and or blood, while diarrhea caused by bacterial infection was often not very watery and less frequent. To establish the exact cause of diarrhea to determine the treatment, and immediate treatment should be done with rehydration fluid because water alone was not enough (9).

Other research showed that result of efficacy in improvement of coverage usage of ORS in Malawi by education executed through campaign poster media. Poster was only one of the type of visual aids for the education of oral rehydration treatment and being field-tested in 24 rural villages in Malawi (10)

Other research in Jamaica explained that before oral rehydration treatment began to be widely used in Jamica, mothers tended to respond in two ways when their children had diarrhea. They had commonly given the child breast milk or teas, coconut water or fruit syrup and water. In a recent survey shown that when their children got diarrhea, they were given oral rehydration fluid for the child to drink, and a packet of ORS to take home. They were told not to use teas or fruit syrup drinks anymore, but only the contents of the packet mixed with boiled water (11).

Education was importance in influencing later hygiene and health behavior, more than 1,300 schoolchildren from Europe, Asia, Africa and the Pacific region entered our poster competition. This excellent response showed how widely the causes of diarrhea and the place for oral rehydration therapy (ORT) in treating it are coming to be understood by the parents of the future. There was no doubt that promotion of ORT has already saved the lives of many children, but it should be remembered that ORT does not prevent the problem of diarrhea itself, and in many places promotion of ORT should continue and extend (12).

Beliefs and behavior was one of the important factors to know health status of general society, for example of handwashing was the part of behavior. Improving handwashing had been shown to reduce diarrheal disease. And this study had shown that cultural beliefs related to the concept of dirtiness and the social prestige attached to cleanliness (13).

Other studies in Orissa India showed that find out what mothers believe about the causes of diarrhea, feeding practices, treatment and ORS, in order to plan health education activities. In this studied was that 136 mothers, even from the more educated group, blamed their own breast milk for causing diarrhea, in all cases, one child or more in the family had died because of previously chronic diarrhea, and older relatives of the mothers had attributed this to breast milk. Incorrect ideas of mothers about the cause of diarrhea were reflected in case management. From this study only 11 % of mothers gave ORS packet (14).

From the previous study at the children's hospital committee on clinical investigations, Massachusetts General Hospital showed that providing ORS to families at the time of their office visit for acute diarrhea was associated with a significant increase in ORS used and substantially reduced the need for unscheduled follow-up visits. Health maintenance organizations should consider routine provision of ORS to children presenting with acute diarrhea (15).

Other study in Thailand at 12 provinces found that ORS solution used was 26 % with other recommended home fluids at 36 %. Further program evaluation over this period raised significant concern that health workers were not following government guidelines in diarrhea case management, did not accept ORS as a principal treatment strategy (16).

From the previous study in Pakistan indicated that there was to assess patterns in mothers' management of water, sanitation, hygiene and diarrhea diseases. All 65 respondents were mothers and caregivers of children under five years old. Most of the mothers lived in extended families in which diarrhea disease management involved other family members and not simply the individual mother. This was particularly the case when mothers were working in the fields or gardens. It was evident that older mothers and grandmothers played a significant role as a source of advice and knowledge about child care, and they strongly influenced decision making about water management and hygiene behavior within the household environment (17).

2.1.2 Appropriate management of diarrhea disease

Diarrhea a medical condition characterized as having loose or watery stools is a major cause of morbidity and mortality in infant and young children in the developing world. 4.6 million children who are less than five years of age die of the disease, with most deaths occurring among those that are 6 months to 2 years of age. The annual number of diarrheal episodes is above one billion, and on average a young child suffers 3.3 episodes of diarrhea per-year. Episodes of the disease can be acute or persistent. Acute cases are sudden, severe and usually have a short duration (a week

or less) period. Persistent cases can last for many days. It is estimated that 3 to 20 % of acute diarrhea cases become persistent (18). These are more likely to have several health consequences on children.

Various factors that can cause the disease include poor nutrition, shortage of water, unclean condition, viral infections, infection of the gut (caused by bacteria and amoebas), worm infections, infections outside the gut (ear infections, measles or urinary infections), malaria, food poisoning and spoiled foods. Good nutrition and hygiene can prevent most diarrhea. Medications are usually not needed for treatment. Yet, in developing countries diarrhea cases account for 30 % of hospital admission, and 48 % of cases are treated with unnecessary and inefficient drugs (19). Given these facts it seems clear that it is both medically sound as well as cost-effective to encourage methods of assessment and treatment of diarrheal disease that focus on the recognition and correction of dehydration, rather than on costly interventions

2.1.3 Etiology

Diarrhea in developing countries is caused by the same kinds of etiologic agents as in developed countries. However, developing countries have a much higher proportion of diarrhea caused by protozoan organism and bacterial. Rotavirus is the most common cause of diarrhea in infants both in the developing and developed world. Enterotoxigenic *E. coli* is another pathogenic organism as are *Shigella*, *Salmonella, Vibrio Cholerae*, and *Campylobacter jejuni. Giardia* and *Entamoeba* are two protozoan organisms that also cause diarrhea.

Infectious diarrhea is a secretary diarrhea that is caused by toxic agents from these pathogens which cause fluid to be secreted from the large and small intestines. Cause of death in diarrhea is due to dehydration and not the bacterial infection itself. Therefore, the main mode of treatment is to maintain good fluid balance while waiting for the infection to clear. A clear cut exception would be Shigella, in which antibiotic treatment would be indicated. In most cases of diarrhea, maintenance of hydration is proper treatment (18).

2.1.4 Case management of acute diarrhea

Approximately two-thirds of diarrheal deaths are attributable to dehydration and , therefore preventable by adequate fluid therapy. Thus the recognition and treatment of dehydration are at the heart of case management of diarrheal disease. The focus in training health workers and parents is on the recognition of clinical sign and symptoms of dehydration (sunken eyes, thirst and dry mouth, sunken fontanelle in infants, reduced skin turgor, low urinary output, apathy and lethargy), assessment of severity of dehydration, and appropriate treatment.

The general principles of case management include oral rehydration therapy (ORT) and proper dietary management, with emphasis on appropriate, available, cost-effective methods of assessing and treating dehydration. Antimicrobials should be used only when absolutely necessary (as in the case of confirmed cholera), and anti-diarrheal drugs should be generally avoided. The principles of case management are applicable to most cases of acute diarrhea, regardless of etiology and pathogenic mechanisms (21)

2.1.5 Effort on prevention of diarrhea

1. Prevention

Previous research study indicated the ways of effective prevention including (21):

a. To give breast feeding

Mother milk was the best food for the baby. It was component with vitamins that available on well balance and ideal form for digested and permeated with an optimal fashion in baby. Just mother milk could take care of child growth on age 4 - 6 months old, there were no other foods that required by during this period.

b. Extra foods with mother's milk

Extra foods with mother's milk should be given step by step, started by accustoming attenuated adult food. Behavior adaptation when gave extra foods with mother milk was included cover the time, what and how extra foods gave.

c. Using clean water

Infectious bacteria cause of diarrhoea usually through hand, which contaminated with feces and usually, found in impure foods or beverages. Food prepared using basin or pan washed with unclean water may occurred with diarrhoea. It was very importance to protect the water from contamination in tap water, started from depository source until at home.

d. Cleaning hand

Washing hand with the soap especially after defecating, after throwing away child's feces, before preparing food, before feeding child had diarrhoea occurrence

e. Using latrine

The exploiting latrine made the big impact of risk degradation in diarrhoea. Some requirements for pay attention were; good functioning latrine, take care latrine clean and hygienic, do not allow children enter to defecate themselves and recommend in using footgear.

f. Throwing away baby faeces truly.

Many people of opinion that baby faeces are not dangerous. This matter not true because faeces of baby of disease others, and fell have to well and correctness.

g. Measles immunization

Diarrhoea often arise and accompanied with measles, so that immunize measles can prevent diarrhoeal diseases. In children measles immunization gave at age 9 months (6).

2. Giving oral rehydration dilution

Diarrhoea in children under five years old might consideration, if do not immediately fluid replacement, it might cause of dehydration and died. Precise action was rehydration therapy by replaced dilution to secretory body (22), one of this action

was through oral. Physiological elementary in giving rehydration for pregnant by oral dehydration dilution with sodium chloride and glucose. Electrolyte was transported from intestinal cavity through cell walls of small intestine concomitance. Glucose improved the water solution absorb into small intestinal wall.

Oral rehydration therapy was cheap, simple and effective way to treat dehydration caused by diarrhea. When diarrhoea occurred, essential fluids and salts were lost from the body and must be rapidly replaced. Many children died annually in developing countries from diarrhea. They will be save, if they were given with oral rehydration therapy promptly. These were included giving extra fluids at home such as tea, soup, rice water and fruit juices to prevent dehydration, and oral rehydration salt (ORS). It was very effective in treating dehydration resulting from all types of acute diarrheal diseases.

2.1.5 Rehydration oral dilution

Rehydration dilutions consist of:

2.1.5.1 Oralyte

In Indonesia, therapy or dilution giving by oral had been exposed to assort the composition dilution with completed and uniformed, so that in the year 1976 the name "oralyte" patented in Indonesia. Composition of oralyte dilution was recommended by WHO, it contained of the sodium chloride 2.6 gm, potassium chloride 1.5 gm, glucose 13.5 gm and trisodium citrate dehydrate 2.9 gm per liter. Used dehydration dilution of WHO formula can overcome dehydration which effected on all type of diarrhoea and all age group (23) .

Oralyte dehydration, housewife can be done by themselves to prevent loosing weight from dehydration. Oralyte in package form was practical, easy got, easy made and easy used. Some drug factory produced oralyte by using different name and freely circulated in communities.

2.1.5.2 Sugar and salt solution

In endemic diarrheal diseases areas, it was essential produced and distributed sufficient ORS packages for early used at home. The community based of oral rehydration therapy program was likely met failure, if this was not assured in local production. Most of developing countries where childhood diarrhea rampant, ORS packets supplied were insufficient for use in every home, these because of limited resource. The only feasible alternative should be promoted how to prepare sugar and salt solution at household.

Sugar and salt solution had same effective same as medication by oralit packet (24). Sugar and salt solution contains 5 gm of sugar, 0.65 gm cooking salt, and dissolved in 200 ml water. The mixture was stirred until completely dissolved, and gave little by little to patient, with suggested that first 3 hours gave 3 glasses, and hereinafter 1 glass each time of diarrhoea. Also, given as soon as possible for children under five years with diarrhoea. This dilution better be prepared and gave during 6 hours, if more than 24 hours, dilution should not be given (24).

2.2 Theoretical health belief model

The Precede model was a framework for the process of systematic development and evaluation of health education programs. An underlying premise of this model was that health education was dependent on voluntary cooperation and participation of the client in a process, which allowed personal determination of behavioral practices. It also stated that the degree of change in knowledge and health practice was directly related to the degree of active participation of the client. Therefore, in this model, appropriate health education was considered to be the intervention (treatment) for a properly diagnosed problem in a target population.

This model was multidimensional, found in the social behavioral sciences, epidemiology, administration and education. As such, it recognized that health and health behaviors had multiple causation, which must be evaluated in order to assure appropriated intervention. The comprehensive nature of Precede allowed for

application in a variety of settings such as school health education, patient education, community health education, and direct patient care settings.

Proceed was added to the model in the late 1980s based on L. Green's experience with Marshell Krueter in various positions with the federal government and the Kraiser Family Foundation. Add to the framework, it was in recognition of the emergence and need for health promotion interventions, that go beyond traditional educational approached to changing unhealthy behaviors. The administrative diagnosis was the final planning step to "precede" implementation. From there "proceed" to promote the plan or policy, regulate the environment, and organize the resources and services, as required by the plan or policy.

The components of Procede take the practitioner beyond educational intervention to the political, managerial and economic action necessary to make social systems environments more conducive to healthful lifestyles and a more complete state of physical, mental and social well being for all.

The purpose of the Precede / Proceed model was to direct initial attention to outcomes rather than inputs. This forces planners to begin the planning from the outcome point of view. In other words, program planners begin with the desired outcome and work backward to determine what cause it (what precede the outcome). Intervention was targeted at the preceding factors that result in the outcome. The planning process outline in the model rest on two principles:

1. The principle of participation, which states that success in achieving change was enhanced by the active participation of members of the target audience in defining their own high priority problems and goals; and in developing and implementing solutions. This principle was derived from the community development root theories and the empowerment education model.
2. The important role of the environmental factors as determinants of health and health behavior such as media, industry, politics, and inequities

Circumstances that led to development

Over several decades, many articles had been published with practical implications for health education, but only a few of those have survived long term analysis and evaluation. Practitioners in various professions had struggled, often without clear guidelines, to systematize their planning, delivery and evaluation of health or educational programs. The Precede / Proceed framework had been designed to avoid the philosophical trap that has caught previous efforts to codify the practices of health education.

The overriding principle in this approach to health education was that health behavior must be voluntary behavior. Health means different things to different people, serves different purposes for different people, and was more or less important to different people. Because of this, it was difficult to justify the imposition of rigid criteria of appropriate health behavior unless a behavior has been judged by society as a whole to be a sufficient hazard to the common good to warrant the curtailment of individual choice.

Description of the model:

Precede- the first 5 phases

Phase 1 - Social diagnosis

Phase 2 - Epidemiological diagnosis

Phase 3 - Behavioral and environmental diagnosis

Phase 4 - Education and organizational diagnosis

Phase 5 - Administrative and policy diagnosis

Proceed- the second 4 phases

Phase 6 – Implementation

Phase 7 – Process evaluation

Phase 8 – Impact evaluation

Phase 9 – Outcome evaluation

Phase 1 – Social diagnosis

The focus of this phase was to identify and evaluate the social problems that impact the quality of life of a target population. This requires program planners to gain an understanding of the social problems. Which affects the quality of life the patient, consumer, student, or community, as those populations see those problems? The establishment of a link followed between these problems and specific health problems, which may become the focus of health education. The link was essential in life and, in turn, how the quality of life affects social problems. Methods used for social diagnosis may be one or more of the following:

- Community forums
- Nominal groups
- Focus groups
- Surveys
- Interviews
- Central location intercept

Phase 2 – Epidemiological diagnosis

Helps to determine health issues associated with the quality of life. It helps identify behavioral and environmental factors related to the quality of life issues. The focus of this phase was to identify specific health problem and non-health factors, which were associated with a poor quality of life. Describing these health problems had the following advantages: 1.) Help establish relationship between health problems, other health conditions, and the quality of life. 2.) Lead to the setting of priorities that will guide the focus of program development and resources utilization. 3.) Make possible the delineation of responsibilities between involved professionals and organizations and agencies. These priorities were defined as program objectives that define the target populations (WHO), the desired outcome (WHAT), and HOW MUCH benefit the target population should benefit, and by WHEN that benefit should occur. Examples of epidemiological data:

- Vital statistics

- Years of potential life lose
- Disability
- Prevalence
- Morbidity
- Incidences
- Mortality

From phase 1 and 2 program objectives were created – that was the goal or goals.

You hope to achieve as a result of implementing this program

Phase 3- Behavioral and environmental diagnosis

This phase focus on the systematic identification of health practices and other factors that seem to be liked to health problems defined in Phase 2. These included non-behavioral causes (personal and environmental factors) that can contributed to health problems, but were not controlled by behavior. These could included genetic predisposition, age gender, existing disease, climate, and workplace, the adequacy of health care facilities, etc. Also assessed were the behaviors, which cause health problems in the target population. Another important of this phase was the determination of the importance and relative change ability of each behavioral cause. It was critical that a behavioral diagnosis was completed for each health problem identified on phase 2. This will allow all the planners to choose target behaviors, which will become the focus of specific educational interventions.

Behavioral Diagnosis was the analysis of behavioral links to the goals or problems that were identified in the epidemiological or social diagnosis.

Environmental Diagnosis was a parallel analysis of factors in the social and physical environment other than specific actions that could be linked to behaviors.

The Behavioral Matrix: This help to identify targets where the most effective intervention measures can be applied.

Table 3 The behavioral matrix

	More Important	**Less important**
More changeable	High priority Quadrant I	Low priority except for political reasons Quadrant III
Less changeable	Priority for innovations Assessment crusial Quadrant II	No program Quadrant III

Source : Health Belief Model.

Behavioral objectives were created from Quadrants 1 and 2. Quadrant 3 was used more for political reasons.

Phase 4 – Educational diagnosis

This phase assesses the causes of health behaviors, which were identified in phase 3. Three kinds of causes were identified – predisposing factors, enabling factors and reinforcing factors. The critical element of this phase was the selection of the factors, which if modified, will most likely lead behavior change. This selection process included identifying and sorting (positive and negative) these factors in appropriate category, prioritizing factors among categories and prioritizing with categories. Prioritization of factors was based on relative importance and changing ability. Learning objectives were then developed which focus on these selected factors.

Pinpoints the factors that must be changed to initiate and maintain behavioral change. It was during this phase that specific intervention objectives were created and the intervention itself will be implemented. Education and organizational diagnosis looks at the specifics that hinder or promote behaviors related to the health issue.

Predisposing factors: any characteristics of a person or population that motivates behavior prior to the occurrence of that behavior

- Knowledge
- Beliefs
- Values
- Attitudes

Enablers: characteristic of the environment that facilitate action and any skill or resource required to attain specific behavior

- Accessibility
- Availability
- Skills
- Laws (local, state, federal)

Reinforces: rewards or punishments following or anticipated as a consequence of a behavior. They serve to strengthen the motivation for behavior

- Family
- Peers
- Teacher

Phase 5 – Administrative and policy diagnosis

This phase focuses on the administrative and organizational concerns, which must be addressed prior to program implementation. This included the assessment of resources, budget development and allocation, development of an implementation timetable, organization or personnel within programs, and coordination of the program with all other departments, and institutional organizational and the community.

Administrative Diagnosis: the analysis of policies, resources and circumstances prevailing organizational situations that could hinder or facilitate the development of the health program.

Policy Diagnosis: to assess the compatibility of your program goals and objectives with those of the organization and its administration; did it fit into the mission statements, rules and regulations.

Phase 6 – Implementation of the program

Phase 7 – Process evaluation was used to evaluate the process by which the program was being implemented.

Phase 8 – Impact evaluation measures the program effectiveness in terms of intermediate objectives and change in predisposing, enabling, and reinforcing factors.

Phase 9 – Outcome evaluation measures change in terms of overall objectives and changes in health and social benefits or the quality of life. It takes a very long time to get results and it may take years before an actual change in the quality of life was seen.

Key terms

Precede was an acronym for predisposing, reinforcing, enabling, cause in, educational diagnosis and evaluation.

Proceed was an acronym for policy, regulatory, organizational constructs in educational and environmental development

2.3 Determinant of behavior

Health behaviors were the preventive and promotional activities to maintain healthy and to show human potential, for this study was drawn from the Precede model on the basis of research on health behavior, 3 categories of factors that had potential for affecting health behavior can be identified as follows :

2.3.1 Predisposing factors

These factors provide motivation of the human behavior change. They were knowledge, attitude related to the motivation of individual or group to act. It can be considered as the personal preferences that individual brings to an educational experience. They may either support health behavior.

2.3.2 Enabling factors

They were factors antecedent to behavior that allow a motivation or aspiration to be realized. Included were personal health related performing a health behavior. Accessibility to various resource was also enabling factors. They were cost, distance, available transportation, hours open for services.

2.3.3 Reinforcing factors

They were factors subsequent to behavior that provide the continuing reward, incentive or punishment for a behavior and contribute to persistence or extinction. They were social as well as physical benefits and various rewards. The sources of reinforcement will vary depending on the objective and type of program. In patient education setting, it may come from nurses, doctors, fellow patients and family. Whether reinforcement was positive or negative will depend on the attitudes and behavior of individual.

Therefore any human behavior could be influenced by these three factors. Any program in which health information was disseminated without influence of enabling and reinforcing factors will fail to affect behavior. The notion of collective causation was important because behavior was a multifaceted phenomenon.

2.4 Behavioral Outcomes

Paying attention to diarrhoeal diseases of age child under five years when did not immediately overcome will be able to cause to dehydration which can continue death, hence most precise action gave the ORS. Behavioral of mother in give ORS if conducted as according to guide exist in pack and executed true can overcome to

dehydration the effect of all diarrhoea type at all of group age. Through gave oralyte dehydration light can be overcome by itself by housewife to prevent the happening of dehydrationing weight. If at home was not made available by oralyte as first aid, suggested a mother make the solution of salt and sugar.

Factors influenced mother behavior in giving ORS

Mother behavioral in giving ORS influenced by a lot of factor for example:

2.4.1 Mother knowledge

Oral dehydration salt, representing a group of information obtained and also comprehended by concerning what such with the dilution of dehydration oral, its gave benefit and also the way of its gave. Knowledge aspect of vital importance in giving motivation and or stimulus which can form the perception and action giving the dilution of oral dehydration at child under five years age with diarrhea.

2.4.2 Mother knowledge on severity of diarrhea

Study on mother's health care behavior in Honduras by Zodpey SP., (25) found that the treatment was more likely to be sough out if mothers perceived the severity of diarrhea episode through its symptoms, for example if the diarrhea was accompanied with vomiting, bloody stool or mucous stool, or if the episode lasted more than two days. Other reported by Jelliffe J. (21), showed that many mothers perceived bloody and watery diarrhea being the most serious types because they thought that diarrhea causes weakness, water loss, and prolonged diarrhea. Mothers whose children were experienced with frequently acute diarrhea became frantic, then switched from one doctor to another, and often stacking up bottles of expensive anti-diarrheal. The remainder did not consider diarrhea to be serious illness. Therefore, the researcher stated that type of diarrheal diseases affected to the use ORS by mothers.

2.4.3 Mother knowledge on etiology of diarrhea

Etiology diarrhea can be classified into infectious and non-infectious diarrhea.

2.4.3.1 Infectious diarrhea

This diarrhea was due to infection. Mostly transmission occurred by direct contact person to person, and also through by foods, waters, famine and flies. The incidence raise commonly in summer and rainy seasons. The etiological agents can be bacteria, eg: *Escherichia coli*, *Shigella dysenteriae*, *Campylobacter jejuni*, etc.; viruses eg. Rotavirus; protozoa eg. *Entamoeba histolytica*, and helminth eg. *Trichuris trichiura*.

2.4.3.2 Non-infectious diarrhea

In these cases, diarrhea was not caused by infectious but due to malabsorption syndrome, cystic fibrosis, and malnutrition, vitamin A deficiency, intolerance to drugs, milk and food allergy, and surgical conditions.

2.4.3.3 Bacteria

Bacterial colonization, that multiply in small intestine must firstly adhere to the mucosa to avoid being swept away. Adhesion was caused by super-visual hair-like agent's term as "pili" or "fimbriae" that bind to the receptors on intestinal surface.

2.4.4 Health worker behavior

According to Muzaham (26), the pattern of exploiting in health service by family had influenced by predisposing components of family, and the ability components in executed on:

a. Component of pre-disposition of family, including family characteristics before the disease occurrence, there was different tendency used of health service. Covering demography variables (age, gender, marital status), and social structural variables (education, work of family's head) and also belief on medical service. These variables were not directly effected on exploiting health service, but only factors in impeller of exploiting of medium health service

b. Ability component in executing which consisted of the family ability on the production and deposit, insurance of health, and other sources. Community's ability concerned on the available of facility and energy spent on health service, duration await the service, time and distance go to reach the facilities.

2.5 Family support

Factors of family and social were represented the important indicators which playing a part on forming behavior by Gochman (1988) (27). There was integration among humanity of family members: father, mother, sister, sister / brother with environment in healthy behavior.

According to Glanz, et al. (1966) (28), family support divided 3 forms including:

a. Emotional support that was empathy expression, darling feeling, belief and taking care of each other.

b. Instrument support that was aid in the form of equipment, and service directly to the family members on help requiring.

c. Information support, that was aid in the form of advise, suggestion and information, in this case perhaps information about health

d. Assessment support that was aid in the form of information about useful for correction or individual / family evaluation.

CHAPTER 3
RESEARCH METHODOLOGY

3.1 Study design

The cross sectional descriptive study was designed to assess mother 's behavior in giving ORS to children under 5 years old, at Kuma Health Center Sangihe District, North Sulawesi Province.

3.2 Study population

The study population were the mothers who had children under five years old suffered from diarrhea during 2004 (from January 1, to December 31), and have been living in area of Kuma Health Center. Sampling technique of the study was Conveni ence sampling.

3.3 Sample size

The number of sample size was calculated by the formula (29):

$$n = \frac{z^2 \alpha/2 (p.q)}{d^2}$$

N = sample population

α /2 = level of significant

= 0.05

p = proportion of target population estimate used ORS was 68 % (30)

= 0.68

q = 1- p

= 1 - 0 .68

= 0.32

d = degree of accuracy desired

= 0.05

When substitute in the formula:

$$n = \frac{(1.96)^2 (0.684).(0.32)}{(0.05)^2} \ldots$$

= 334.4

Add 10 % for samples collection

n = 334.4 + 10 %

= 368

3.4 Research instruments

Self-administered questionnaire were employed in this study. The questionnaire consisted of 6 parts as follows:

Part 1: The socio-demographic factors of mothers (eg: age, occupation, family income, education and religion).

Part 2: Mother's knowledge on diarrhea and ORS used.

Part 3: Mother's perception on severity of diarrhea, etiology of diarrhea, and benefits of ORS used.

Part 4: Family support on ORS

Part 5: Health worker (government employees, and health cadre behaviors) on ORS.

Part 6 : Mother proper and giving ORS / SSS

Prior to the actual data collection, the questionnaire was pre-test from another community to analysis of reliability of questionnaire. However, during the pre-test, if some questions were not clear, it was modified again before actual data collection

3.5 Data collection

The questionnaire is first prepared in English and translated into Indonesia language. The completeness of the questionnaire is revised according to the thesis committee before distributed for pre-test prior the real data collection in the communities of other sub-district in Manganitu North Sulawesi Province.

Upon the training of the interviewers, data collection is implemented under the supervision of the head of health center and myself.

3.6 Data analysis

The data was edited, coded and analyzed by computer program. Descriptive statistic was performed to describe variables, and chi-square test was used to find out the association between independent variables with dependent variable as in the following:

3.6.1 The personal characteristic factors of the mothers

Among quantitative data (eg: age, family income, occupation, education and religion etc.), the number, percentage, mean and standard deviation were obtained. The Kolmogorov-Smirnov goodness of-fit test provides an alternative to the chi-square goodness-of fit test.

3.6.2 Mothers knowledge on diarrhea and use ORS

Knowledge' s score was given according to the answer either true or false. In scoring “1 “was given for correct answer and “0 “was given for an incorrect answer. Total score was summarized and categories. For descriptive analysis, mother’s knowledge level is divided into 3 groups:

High of knowledge	: scores > 9
Low of knowledge	: scores < 9

Minimum, maximum, mean and standard deviations were calculated. Afterwards, frequency and percentage of every knowledge level was examined. Chi-square test was used to find out the relationship between knowledge levels with the mother's behavior to give ORS.

3.6.3 Mother's perception on severity of diarrhea and benefit, barrier of ORS

Perception's score was given in positive statement, 3 scores for an agree answer, 2 scores for the answer not sure, and 1 scores for disagree answer. Finally, the total scores were summarized and normal distribution of the total scores was examined. For descriptive analysis, level perception of mothers was classified based on Blooms cut-off points, which determined by 60 % and 80 % of the full scores (33 scores). In this study the cut-off point was divided as follows:

High perception : scores 26 - 33
Low perception : scores < 26

Frequency and percentage of every level was obtained and analysis by Chi-square test to find the relationship between perception levels with the mother's behavior to use ORS.

3.6.4 Family support in giving ORS or SSS

Score for family support in giving ORS or SSS was done, “2” was given for correct answer and “1 “for incorrect answer. The total score was summarized. In this study, the cut-off point was divided as follows:

Good : scores 7 - 12
Poor : scores < 7

3.6.5 Health worker behavior in giving ORS or SSS

Score of health worker's behavior in giving ORS was given, “2 “ scores for correct answer and “1“ score for incorrect answer. The total score was summarized in 2 categories. In this study the cut-off point was divided as follows:

Good : scores 7 - 14

Poor : scores < 7

3.6.6 Mother behavior's in using ORS or SSS

The score for observing and checklist form of mothers in mixed ORS or SSS solution, " 2 " was given for right practice and " 1 " for wrong practice. The total score was calculated. Descriptive analysis in this variables was classified based on Blooms cut-off points, which determined by 60 % and 80 % of the full scores (22 scores). The cut-off point wee divided as follows:

High proper use : scores 16 - 22

Low proper use : scores < 16

CHAPTER 4
RESULTS

A cross sectional study was conducted to identify 368 mothers' behavior in order to give ORS to children under five years old who got diarrhea at Kuma Health Center, Sangihe District, North Sulawesi Province. Pre-test questionnaire was tried out for accuracy. After correction some items in the questionnaire to get high magnitude, data collection was done during January, 12 – 30, 2005.

4.1 General characteristics of mothers

Table 4 showed that the highest age group of mother was between 20 - 30 years old (65.5 %). Majority of mothers' occupation was housewife (88.3 %). Regarding education, three-forth of them (76.6 %) graduated primary, and secondary levels, and the rests attended high school to university levels. More than half of mothers (63.3 %) had income 2000 – 4000 Baht per month. Most of them (91.8%) were Christian.

Table 4 Personal characteristic of mothers (n = 368)

Characteristics	Number	%
Age of mothers (years old) :		
< 20	26	7.1
20 - < 30	241	65.5
30 - 40	85	23.1
> 40	16	4.3
Min = 18. Max = 45 X = 25 SD = .447		

Table 4 Personal characteristic of mothers (n = 368) (cont.)

Characteristics	Number	%
Main occupation:		
House wife,	325	88.3
Vendor,	4	1.1
Labor	7	1.9
Government employee	12	3.3
Farmer,	18	4.9
Tailor	2	.5
Education:		
Illiterate,	3	.8
Primary,	151	41.0
Secondary level	128	34.8
High school,	81	22.0
University	5	1.4
Family income (Baht / month) **:**		
< 1,000	3	.8
1,000 - 2,000	132	35.9
> 2,000 - 4,000	200	54.3
> 4,000	33	9.0
Min = 800 Max = 4400 X = 2750 SD = .653		
Religion :		
Muslim	29	7.9
Christian	338	91.8
Buddhism	1	0.3

4.2 Mothers' knowledge on diarrheal diseases and ORS used

Tables 5 showed the mothers' knowledge on diarrhoea. Most of them gave the correct answers. Concerning on the knowledge 12 questions, 4 questions answered wrong with more than half or nearly half, consisting of these following questions:

a. The sign of severe diarrhea in children are dry lips, skin and sunken eyes (62 %).

b. The meaning of the dehydration from diarrhea is excessive loss of water and electrolyte (52.7 %).

c. The leading cause of death in children with acute diarrhea was dehydration (49.2 %)

d. Washing hand before cooking can not prevent diarrhea (48.6 %).

Table 5 Mother's knowledge on diarrhoeal disease and ORS used

Question	Knowledge answer			
	Correct		Incorrect	
	No.	%	No.	%
1. The sign of children diarrhea is watery stool 1 time a day	335	91.0	33	9.0
2. Contaminated water is the source of diarrhea disease	336	91.3	32	8.7
3. The common cause of diarrhea is eating of contaminated food / water	323	87.8	45	12.2
4. The sign of severe diarrhea in children are dry lips, skin and sunken eyes	140	38.0	228	62.0
5. The meaning of the dehydration from diarrhea is excessive loss of water and electrolyte	174	47.3	194	52.7

Table 5 Mother's knowledge on diarrhoeal disease and ORS used (cont.)

Question	Knowledge answer			
	Correct		Incorrect	
	No.	%	No.	%
6. The leading cause of death in children with acute diarrhea is dehydration	187	50.8	181	49.2
7. ORS is mixed solution comprised of salt, sugar and water	353	95.9	15	4.1
8. ORS is used to prevent dehydration In acute diarrhea	249	67.7	119	32.3
9. Diarrhea is not a communicable disease	250	67.9	118	32.1
10. Washing hand before cooking can not prevent diarrhea	189	51.4	179	48.6
11. Breast feeding can prevent babies from diarrhea	281	76.4	87	23.6
12. Children having diarrhea should not drink water	259	70.4	109	29.6

Table 6, showed mothers' knowledge, which classified by scores. Number of low and high levels not much difference (52.4 % and 47.6 % respectively).

Table 6 Number and percentage distribution of mothers' knowledge

Knowledge (scores)	Number	%
a. Low level (< 9)	193	52.4
High level (> 9)	173	47.6

4.3 Mothers' perception on diarrhea, benefit and barrier on ORS used

Mothers' perception on diarrhea was shown in Table 7. The results indicated that only four from twelve questions answered with agree statement, consisting of:

a. Diarrheal disease lead to fatal in children (90.2 %)
b. Children are easier to get serious diarrhea than adults (71.7 %)
c. Sometime diarrhea at children cause of death (81.0 %).
d. Benefit of prevention diarrhea could be able to reduce death among children under five years old (82.3 %).

Table 7 Mothers' perception on diarrhea, benefit and barrier on ORS used

Question	Perception answer		
	Agree	Disagree	Not sure
1. Diarrhoeal disease lead to fatal in children	332 (90.2)	13 (3.5)	23 (6.3)
2. Children who often get diarrhea will not be healthy	51 (13.9)	257 (69.8)	60 (16.3)
3. Diarrhea can be caused by less nutrient	99 (26.9)	63 (17.1)	206 (56.0)
4. Children are easier to get serious diarrhea than adults	264 (71.7)	58 (15.8)	46 (12.5)
5. Sometime diarrhea at children cause of death	298 (81.0)	34 (9.2)	36 (9.8)
6. Diarrhea is a disease easy to treat	197 (53.5)	53 (14.4)	118 (32.1)
7. Children without diarrhea are healthier than the children with diarrhea	94 (25.5)	142 (38.6)	132 (35.9)
8. Children without diarrhea will more resist infectious diseases than children with diarrhea	79 (21.5)	116 (31.5)	173 (47.0)

Table 7 Mothers' perception on diarrhea, benefit and barrier on ORS used (cont.)

Question	Perception answer		
	Agree	Disagree	Not sure
9. Benefit of prevention on diarrhea could be able to reduce death among children under five years old	303 (82.3)	30 (8.2)	35 (9.5)
10. Prevention on diarrhea can make the life of infancy and childhood happy	179 (48.6)	43 (11.7)	146 (39.7)
11. Diarrhea disease among children under five years can not be prevented because care takers have no time to freshly prepare food for them	183 (49.7)	149 (40.5)	36 (9.8)

Table 8, showed the mothers' perception classified by scores in 2 groups, high and low perception. the data can show that the mothers had low perception (52.7 %) and high perception (47.3 %).

Table 8 Number and percentage distribution of mothers' perception

Perception	Number	%
Low (< 26)	194	52.7
High (26 - 33)	174	47.3

4.4 The health worker's behavior

Table 9 found the health worker's behavior, which had been asked from the housewife, four from seven questions showed that more than half or nearly half of them stated that health workers did not do that activities, which consisting of :

a. Did health worker explain and demonstrate to make the ORS? (59.5 %)
b. Did health worker explain to give ORS when the children vomit? (81.8 %)
c. Did health worker explain to give ORS if the children do not like drink? (81.8 %).
d. Did health worker tell you how long ORS solution can use? (44.3 %).

From the answers which have been given above by mother, there were two statements like question health worker given ORS to the mother (84.2 %) had correct answer or health worker tell you how to give ORS (78.8 %) of mothers gave answer.

Table 9 The health worker's behavior

Health worker's behavior	Health worker's behavior answer			
	Yes		No	
	No.	%	No.	%
1. Did health worker given ORS to the mother ?	310	84.2	58	15.8
2. Did health worker explain and demonstrate to make the ORS?	149	40.5	219	59.5
3. Did health worker explain substitution of ORS packet?	272	73.9	96	26.1
4. Did health worker tell you how to give ORS?	290	78.8	78	21.2
5. Did health worker explain to give ORS when the child vomits?	67	18.2	301	81.8

Table 9 The health worker's behavior (cont.)

Health worker's behavior	Health worker's behavior answer			
	Yes		No	
	No.	%	No.	%
6. Did health worker explain to give ORS if the child do not like drink?	67	18.2	301	81.8
7. Did health worker tell you how long ORS solution can use?	205	55.7	163	44.3

Health workers' behavior was classified by scores into two groups, poor and good. The data showed that more than half of them had poor behavior (59.5 %).

Table 10 Number and percentage distribution of health worker behavior

Behavior	Number	%
Poor (< 7)	219	59.5
Good (7 – 14)	149	40.5

4.5 Family support

Relating to family support in order to gave ORS, Table 11 showed that two of six questions had high supported by the family. First question, the family assist to bought the ORS pack if did not prepare at home (92.9%), and second the family assist to made a solution ORS (90.8%). In contrast with one question shown the family less supported, in the child to give ORS (23.4%).

Table 11 The family supported in order to give ORS

Family supported	Family supported answer			
	Yes		No	
	No.	%	No.	%
1. The family assists to buy the ORS packet if did not prepare at home	342	92.9	26	7.1
2. The family less support if the child to give ORS	86	23.4	282	76.6
3. The family assists to make a solution ORS	334	90.8	34	9.2
4. If did not prepare the ORS packet family to make salt sugar solution	248	67.4	120	32.6
5. The family assist to give SSS	310	84.2	58	15.8
6. The family follow keep ORS at home	292	79.3	76	20.7

Table 12 showed that family supported levels, which was classified into two groups, poor and good supported, number of this two group were not much difference.

Table 12 Number and percentage distribution of family supported

Family supported	Number	%
Poor (< 7)	194	52.7
Good (7 -12)	174	47.3

4.6 Mothers' behavior in order to give ORS

Mothers' behavior on proper and giving ORS was shown in Table 13. Results stated that two from twelve questions had very low done, consisting of: keep ORS in cool place within 24 hours (23.1 %) and continue using ORS mixture even though children were nausea or vomiting (31.8 %).

Table 13 Mothers' behavior in giving ORS /SSS

Question	Mothers' behavior on ORS / SSS answer			
	Yes		No	
	No.	%	No.	%
1. Did you only using ORS?	263	71.5	105	28.5
2. Did you wash hands with soap and water before mix ORS?	258	70.1	110	29.9
3 Have ready a clean liter bottle or other container?	347	94.3	21	5.7
4. Fill with clean cool boiled water?	334	90.8	34	9.2
5. Use 1 ORS packet per one time preparation?	333	90.5	35	9.5
6. Pour ORS from the packet into bottle?	187	50.8	181	49.2
7 Did you preserve ORS store it in cool place ?	148	40.2	220	59.8
8. Keep ORS in cool place it within 24 hours ?	85	23.1	283	76.9
9. Feed children the mixture ORS by using a clean teaspoon?	362	98.4	6	1.6
10. Feed children the mixture ORS with correctly after children get diarrhea?	348	94.6	20	5.4

Table 13 Mothers' behavior in giving ORS / SSS (cont.)

Question	Mothers' behavior on ORS / SSS answer			
	Yes		No	
	No.	%	No.	%
11. Continue using ORS the mixture even though children were nausea or vomiting?	117	31.8	251	68.2
12. Feed children the mixture ORS until diarrhea stops?	305	82.9	63	17.1

When classified mothers' behavior into scores, majority of them high behavior (71.5 %), which shown on Table 14.

Table 14 Number and percentage distribution of mothers' behavior in giving ORS

Mothers behavior (scores)	Number	%
Low (< 13)	105	28.5
High (13 – 22)	263	71.5

4.7 The relationship between personal characteristics and mothers' behavior in order to give ORS

Table 15 showed the association between personal characteristics of mothers with mothers' behavior in order to give ORS. By Chi-square and Fisher's exact analysis found that there was no significant association between personal characteristics (age group, occupation, education, and religion) with mothers behavior in order to give ORS, except for family income (p-value = 0.029).

Table 15 Association between personal characteristic factors with mothers' behavior in order to give ORS

Personal Characteristics	Mothers behavior in giving ORS Low No. %	High No. (%
Age of mothers (years old) :		
< 30	10 (3.7)	257 (96.3)
> 30	7 (6.9)	94 (93.1)
Fisher's Exact Test, p- value: .263		
Main occupation :		
Housewife, Vendor, Labor	16 (4.8)	320 (95.2)
Government employee	1 (8.3)	11 (91.7)
Farmer, Tailor	0 (0.0)	20 (100)
Chi-square test, p-value : .507		
Education :		
Illiterate, Primary & Sec. school	14 (5.0)	268 (95.0)
High school & university	3 (3.5)	83 (96.5)
Fisher Exact Test, p-value : .772		

Table 15 Association between personal characteristic factors with mothers' behavior in order to give ORS (cont.)

Personal Characteristics	Mothers behavior in giving ORS	
	Low	High
	No. %	No. (%
Family income		
< 2,000	2(1.5)	133(98.5)
> 2,000	15(6.4)	218(93.6)
	Chi-square test, p-value : .029	
Religion :		
Muslim	0 (0.0)	29 (100)
Christian	17 (5.0)	321 (95.0)
Buddhism	0 (0.0)	1 (100)
	Chi-square test, p-value : .453	

4.8 The association between knowledge, perception and mothers' behavior in order to give ORS

Table 16, showed the association between knowledge with mothers' behavior in order to give ORS. It was found significant association in knowledge with p-value = 0.011.

This table also found that those mothers either who had low or high knowledge had high behavior in giving ORS (92.7 % and 98.3 % respectively).

Table 16 Association between knowledge, perception with mothers' behavior in order to give ORS

Characteristics	Mothers behavior in giving ORS	
	Low	High
	No. %	No. %
Knowledge :		
- Low	14 (7.3)	179 (92.7)
- High	3 (1.7)	172 (98.3)
	Chi-square test, p- value: .011	
Perception :		
- Low	8 (4.1)	186 (95.9)
- High	9(5.2)	165 (94.8)
	Chi-square test p-value : .632	

4.9 The association between health worker's behavior with mothers' behavior in order to give ORS

Table 17, showed that there was relationship between health worker's behavior with mothers' behavior in order to give ORS with statistical significant (p-value 0.013). This table also found that those health workers who had good behavior (98.7 %) had high practice use of ORS than mothers who had low behavior (93.2 %).

Table 17 Association between health worker's behavior with mothers' behavior in order to give ORS

Characteristics	Mothers behavior giving ORS Low No. %	high No. %
Health workers behavior.		
- Poor	15 (6.8)	204 (93.2)
- Good	2 (1.3)	147 (98.7)
	Chi-square test, p- value: .013	

4.10 The association between family supported and mothers' behavior in order to give ORS

Table 18, showed that those families who had good supported, more than 95 % were with mothers high behavior in order to give ORS, but there was no statistical significantly association (p-value = 0.606).

Table 18 Association between family supported with mothers' behavior in order to give ORS

Characteristics	Mothers behavior giving ORS Low No. %	High No. %
Family support :		
- Poor	10 (5.2)	184 (94.8)
- Good	7 (4.0)	167 (96.0)
	Chi-square test, p-value: .606	

4.11 The association between personal characteristic factors and mothers' behavior in order to use ORS

The association between personal characteristic factors of mothers with mothers' behavior in order to use ORS effectively was shown in Table 19. There was no significant association found in this item.

Table 19 The association between personal characteristic factors with mothers' behavior in order to give ORS effectively

Personal Characteristics	Mothers' behavior in giving ORS	
	In appropriate No. %	Appropriate No. (%
Age of mothers (years old):		
< 30	118 (44.2)	149 (55.8)
> 30	48 (47.5)	53 (52.5)
	Fisher's Exact Test, p- value: .567	
Main occupation :		
Housewife, Vendor, Labor	153 (45.5)	183 (54.5)
Government employee	5 (41.7)	7 (58.3)
Farmer, Tailor	8 (40.0)	12 (60.0)
	Chi-square test, p-value : .864	

Table 19 The association between personal characteristic factors with mothers' behavior in order to give ORS effectively (cont.)

Mothers' behavior in giving ORS		
Personal Characteristics	**In appropriate**	**Appropriate**
	No. %	**No. (%**
Education :		
Illiterate, Primary & Sec. school	126 (44.7)	156 (55.3)
High school & university	40 (46.5)	46 (53.5)
	Fisher Exact Test, p-value : .765	
Family income		
< 2,000	56 (41.5)	79 (58.5)
> 2,000	110 (47.2)	123 (52.8)
	Chi-square test, p-value : .287	
Religion :		
Muslim	9 (31.0)	20 (69.0)
Christian	157 (46.4)	181 (53.6)
Buddhism	0 (0.0)	1 (100)
	Chi-square test, p-value : .184	

4.12 The association between knowledge, perception with mothers' behavior in order to give ORS effectively.

Table 20, showed that there was no association between knowledge with mothers' behavior in order to give ORS correctly (p-value 0.096), in contrast with found statistical significantly association in perception with mothers' behavior in order to give ORS (p-value 0.005).

Table 20 Association between knowledge, perception and mothers' behavior in order to give ORS correctly

Characteristics	Mothers behavior giving ORS	
	inappropriate	**appropriate**
Knowledge :		
- Low	95 (49.2)	98 (50.8)
- High	71 (40.6)	104 (59.4)
	Chi-square test p- value: .096	
Perception :		
- Low	101 (52.1)	93 (47.9)
- High	65 (37.4)	109 (62.6)
	Chi-square test p-value : .005	

4.13 The association between health worker's behavior and mothers' behavior in order to give ORS correctly

Table 21, showed the statistical significantly association between health worker's behavior and mothers' behavior in order to give ORS (p-value 0.005). The table also showed that those health workers who had good behavior, 63.8 % were the mothers who had appropriate used ORS more than mothers who had poor behavior (48.9 %).

Table 21 Association between health worker's behavior and mothers' behavior in order to give ORS correctly

Characteristics	Mothers behavior giving ORS inappropriate	appropriate
Health worker behavior :		
- Poor	112 (51.1)	107 (48.9)
- Good	54 (36.2)	95 (63.8)
	Chi-square test, p- value: .005	

4.14 The association between family supported and mothers' behavior in order to give ORS correctly

Table 22 showed those families who had good supported, 58.0 % were with mothers' appropriate used with ORS, not much different with family who had poor supported (52.1%). There was no significant association found between family support with mothers' behavior in order to give ORS (p-value = .249).

Table 22 Association between family supported and mothers' behavior in order to give ORS correctly

Characteristics	Mothers behavior giving ORS Inappropriate	Appropriate
Family support		
- Poor	93 (47.9)	101 (52.1)
- Good	73 (42.0)	101 (58.0)
	Chi-square test, p-value : .249	

CHAPTER 5
DISCUSSION

Discussion on this results was done in each categories as in the following:

5.1 Mothers' behavior in order to give ORS

In this study, a mixture of glucose, salt and water was followed by the national standard of Indonesia or the WHO standard. Results of the study in Table 9 found 71.5 % of mothers used ORS for treating diarrhea among their children under five years old. It was in contrast with other study done by Indonesia demographic and health survey (IDHS) in 2003 (20), which found only 36 %, and demonstrated in Bali, Indonesia found 68 % (30. There were several reasons that this study at Sangihe District was higher than IDHS and Bali could be in followings:

a. National diarrheal program had more emphasis in the prevention and the overcoming diarrhoeal disease, and also make-up ORS usage in the fifth national program plan (2000 – 2005).

b. Diarrheal program of district level had policy on established ORS in the health center level.

Some items found in this study on mothers' behavior in order to give ORS, specific on the items that had low percentage. These points should be suggested to the government especially in public health sector who are responsible to educate mothers how to preserve ORS, how to prepare and store ORS, and when to continue using ORS mixture or stop, require to training methods activity such as the previous study by Santos Ocampo PD (31). Further study should be emphasized on behavior of mothers in diarrheal disease treatment, and the proper behavior's of mother with enable to get information how preparing and using ORS .

5.2 The association between personal characteristic factors with mothers' behavior in order to give ORS

The Table 15 on this study demonstrated that no statistically significant association between general characteristics of mothers (eg: age, occupation, education, religion) with the behaviors' mother in order to give ORS, excepted theirs family income.

5.2.1 Age of mothers: Table 4 found that approximately 72.6 % of mothers were in the age group less than 30 years, which young in remember well on their children got with diarrhea or past history of diarrhea in last year. Therefore, all of them might got some experiences about diarrhea and they knew about ORS regardless of their age. In Indonesia, primary health care developed since 20 years ago, particularly the health workers or health care personals had been working closely at grass root and introduced of using ORS to this mother, so that association did not found in this item.

5.2.2 Occupation of mothers: Almost mothers' occupational 91.3 % were housewife, vendor and labor, who had enough time and able to take care children by themselves. No significant association found between occupation with mothers' behavior in order to give ORS, possible be high literacy rate which worked at home or theirs own fields. They have enough time to take care their children than those mothers who worked out side.

5.2.3 Mothers' education: Table 4 also showed that approximately 76.6 % of mothers rather low education, but this mothers' behavior had high practice, which no significant association between education with mothers' behavior in order to give ORS. The possible explanation not found any association of education variable was that all of the mothers in this study had children with diarrhea or past history with diarrhea last year. Therefore, all of them might got some experiences about diarrhea and they knew about ORS regardless by theirs health worker or health care. This results had the same agreement found in a previous research conducted in Thailand by Ahsan MGU (32) on the factors affecting ORS utilization of mothers in diarrheal disease of children under five years of age in Nakhon Pathom Province in 1993.

5.2.4 Family income of mothers: Table 4 found that majority of mothers (63.3 %) had family income more than 2000 Baht / month, and Table 15 stated that there was significant relationship between family income and mothers behavior in order to give ORS with p-value equal to 0.029. In Indonesia, ORS very cheap, and mothers who had income more than 2000 Baht, almost of the mothers were able to pay for ORS, and had high practice to use of ORS. There were indicate that high income does not guarantee appropriate practice.

5.2.5 Religion of mothers: Table 15 found that each religion of mothers had high practice to use of ORS. In North Sulawesi Province, Christian religion more than Muslim, and culture in both religions no relationship found with mothers' behavior in order to give ORS.

5.3 The association between knowledge, perception and mothers' behavior in order to give ORS

5.3.1 There was statistical significant association between knowledge and mothers' behavior in order to give ORS for diarrhoeal treatment to their children under five years old with p-value equal to 0.011. Regarding to knowledge on diarrhea on Table 16, nearly hundred percent knowledge group had high practice (98.3 %), and was a little higher than the high knowledge group who had low behavior (92.7%). In agreement with general expectation which stated that if the high knowledge had, the high practice more.

Some questions on the knowledge of diarrhea in this study should be realized. Most of mothers could not identify the sign of diarrhea, except 91 % of them knew that the sign of diarrhea in children diarrhea is watery stool 1 time a day. More than half of them (62.0 %) did not know children possible got dehydration during diarrhea, also did not know the sign of severe diarrhea in the children are dry lips, skin and sunken eyes. These sign are very important that mothers should be learned for take care of their children, as well as to learn an importance of ORS for treating diarrhea, so that mothers has to be given health education the emphasized at the diarrhea disease in general

problem, agreement in previous study in Torodi-Niger (33) . Therefore, knowledge was an important role to manage acute diarrhea in children under five years old. Previous research by Nguyen Thi Thanh Lan, 2001 reported revealed that knowledge had a significant relationship with the proper ORS used (34).

5.3.2 The association between perceptions with mothers' behavior in order to give ORS. In Table 16 showed that there was no association found. This table revealed that in low perception group had mothers' behavior in order to give ORS high practice (95.9 %), and the proportion was higher than mothers in high perception group had high perception (94.8 %). Results found was in contrast with a previous study by Sher Baz Khan (35), found that there was significant association between perception of mothers on duration of ORS utilization and behavior of mothers toward ORS utilization.

Regarding the perception of mothers' behavior in giving ORS effectively, there was significant association found between mothers' perception with mothers' behavior to give ORS effectively as shown the p-value equal to 0.005 in Table 20. It revealed that proportion of mother with appropriated behavior in giving ORS, mother who had high perception group (62.6 %) was higher than the mothers who had low perception group (47.9%). The results was according to general expectation that stated if high perception hence having influence to change of behavior to do more precise or appropriate, such as in previous study in Bangladesh (36).

5.4 Association between health worker's behavior and mothers' behavior in order to give ORS

The results in Table 17 showed that there was significantly association between health workers' behavior and mothers' behavior in order to give ORS in treatment of their children under five years old with p-value equal to 0.013. In this study, health workers' behavior was assessed by 7 questions concerning the perception toward ORS and its usefulness, which were related to the effectiveness and preparing of ORS. Results revealed that proportion of mothers behavior in order to give ORS with high practice of high health workers' behavior group (98.7 %), was higher among health

worker who had poor behavior (93.2%). This study as according to Gochman (16). On the other hand, it was different with previous study on the perception, knowledge and practice of mothers of ORS in under five years children with acute diarrhea in Vietnam 1996 by Nguyen Thi Thanh Lan (34).

5.5 The association between family supported and mothers' behavior in order to give ORS

The results of Table 18 showed that family supported was no significant relationship with mothers' behavior in order to give ORS. The proportion of high mothers' behavior in order to give ORS between poor family supported group (50 %) was higher than good family supported group (45.4 %), in contrast with previous studied by Boonlert, T (37). Results had been able stated that mothers' behavior concerning on practice handling of ORS cannot influence by family supported, because all before family gave other drugs beside ORS. So, mothers' behavior did not change. This was in agreement with other studies conducted in developing countries by Muninjaya, A (38). On the behavior of health belief model, family support was included in the reinforcing factors, so that behavior was influenced by health care conditions and responded to the reinforcing factors. Community or family supported could reinforced by individually action, and be able to change the better behavior, which can be supported and conducted by health education or health promotion. If the good family support, will have an influence onto mothers' health behavior, such as model of family influence by Gochman (27).

CHAPTER 6
CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

This study emphasized on mother's behavior in giving ORS to their children under 5 years old in Kuma health centre, Sangihe district, North Sulawesi province of Indonesia. It was performed to study the characteristics of mother's personal (age, occupation, education, family income, religion, knowledge and perseption), health worker behavior and family support towards mothers' behavior in giving ORS. A structured self administered questionered was performed to collect the data among 368 mothers who had childrean under 5 years old with diare or diarhe history, during January 12 – 31, 2005.

Method of sampling was convenient sampling with 368 mothers who met the criteria. For statistical analysis, descriptive was used to show frequencies, percentages, mean, median, and standard deviation. Chi-square analysis applied to measure the relationship between mothers behavior in giving ORS (as dependent variable) and mothers personal characteristic (age, occupation, education, family income, religion, knowledge and perception), health worker behavior and family support towards mothers behavior in giving ORS as independent variables.

Based on the results of the study and interpretation, the conclusion could be made as follows:

The age of total 368 respondents were devided into 4 groups. 65.5% of respondents were in the middle reproductive age, ranging from 20 – 30 years old. The age groups 30-40 years old, less than 20 years old and more than 40 years old were 23.1 %, 7,1% and 4.3% respectively.

In terms of occupation, respondents who worked as house wife were taking the largest proportion (88.3%). Among educational distribution of the respondents, most of them got primary school (41%), followed by secondary school and high school, 34.8% and 22% respectively.

Concerning the family income, the average (mean) of the family income of the total respondents was 2710 Baht per month. More than half of the respondents (54.3%) had family income around 2000-4000 bath permonth. It showed that those who had family income less than 2000 Baht (98.5%) had high practice on ORS used and those who had more than 2000 Baht (93.6%) had low practice. These variables had significantly associated to mothers behavior on ORS used. (p-value 0.029)

The majority of respondents were christian (91.8%), while the rest (8.2%) were consist of others religions, which mainly was Muslim.

Related to respondents knowledge during the interview it was found that 98.3 % respondents had high level of knowledge and high practice in term of mothers behavior on ORS used. These two variables were significantly associated, with statistically p-value 0.011.

In terms of health worker behavior, it found that 98.7% of respondents had good behavior and high practice, in term of mothers behavior on ORS used. These two variables also were significantly associated, with statistically p-value 0.013.

There were not significantly associated between mothers age, occupation, education, religion, perception, family support and mothers behavior on ORS used, with statistically p-value > 0.05.

6.2 Recommendations.

According to study result in order to give ORS during treatment of diarrhea disease in children under five years old following points are recommended:

6.2.1 Health behavior of mothers:

To improve knowledge level of mothers is conducting activity of education and training which is concerning about communications, information and education.

To continue development of effective prevention and control of childhood diarrhea through the Health communication and Health education programs. These programs should be focused on the low education mothers and mothers who were housewife, and helping mothers to improve their perception, knowledge, and practice on ORS use related to the following factors.

To help mothers, especially the mothers who have children under five years old to be aware of the effects severity of diarrhea.

To help mothers improve their knowledge about childhood diarrhea symptoms, to use ORS effectively through activity of demonstration.

6.2.2 Communication / mass media:

In order to achieve the objectives, the activities health education should be manifestly, attractive and suitable method, also participatory and goup discussion. The activity by using equipments of media:

Television, videotapes, pamphlet, poster, ORS packets.

6.2.3 Health worker / health cadre.

Health worker personnel having important role in providing information on diarrhea and ORS use should supervise of health education program about diarrhea and its treatment by using ORS among children under five years old.

6.2.4 More coordination among the health service system regarding all levels from provincial level, district level and sub district level. That coordination may done through the financial supporting, human resources and health service problems.

6.2.5 Monitoring and evaluation should be conducted regularly and planned as the year plan of the district health office.

6.2.6 Recommendation for further studies:

This study was carried out in a small area and sample size, so that its results had limited generalization and representative. Therefore it is suggested to study the same objectives with qualitative approach, focus on frequensi of ORS to evaluate the effectively ORS use.

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APPENDIX

APPENDIX A

QUESTIONNAIRES

FACTORS RELATED TO MOTHER'S BEHAVIOR IN ORDER TO GIVE ORS TO CHILDREN UNDER FIVE YEARS OLD AT KUMA HEALTH CENTER, INDONESIA

Date of interviewer ……..

Name of interviewer……..

Name of mother ……

Address of mother …….

PART 1: PERSONAL CHARACTERISTIC FACTORS.

1) Age: ……years old

2) Occupation:

☐ Housewife ☐ Government employee

☐ Vendor ☐ Farmer

☐ Labor ☐ Other (specify) ……

3) Education:

☐ Illiterate ☐ Primary

☐ Secondary ☐ High school

☐ University. ☐ Other (specify) …….

4) Family income per-month: Rp. . . . . ..

5) Religion: …….

Part 2: Mother knowledge on diarrhea & use ORS

No	Statement	True	False
1	The sign of children's diarrhea is watery stool 1 time a day		
2	The sign of children' diarrhea is bloody stool		
3	The common cause of diarrhea is eating of contaminated food/water		
4	The sign of severe diarrhea in children are dry lips, skin and sunken eyes		
5	The meaning of the dehydration from diarrhea is excessive loss of water and electrolyte		
6	The leading cause of death in children with acute diarrhea is dehydration		
7	ORS is mixed solution comprised of salt, sugar and water		
8	ORS is used to prevent dehydration in acute diarrhea.		
9	Diarrhea is not a communicable disease		
10	Washing hands before cooking can not prevent diarrhea		
11	Breast feeding can prevent babies from diarrhea		
12	Children having diarrhea should not drink water.		

PART 3: Mother perception about diarrhea, benefit and barrier use ORS

No	Statement	Agree	Not sure	disagree
1	Diarrhoeal disease lead to fatal in children			
2	Children who often get diarrhea will not be healthy			
3	Children are easier to get serious diarrhea than adults			
4	Diarrhea is a disease easy to treat			
5	Diarrhea is a normal development for children under 1 of age			
6	It is easy to get diarrhea when drink dirty water			
7	Children without diarrhea are healthier than the children with diarrhea			
8	Children without diarrhea will more resist infectious diseases than children with diarrhea			
9	Benefit of prevention on diarrhea could be able to reduce death among children under 5 years old			
10	Prevention on diarrhea can make the life of infancy and childhood happy			
11	Diarrhea disease among children under five years cannot be prevented because care takers have no time to freshly prepare food for them.			

PART 4: HEALTH WORKER BEHAVIOR

No	Activity	Yes	No
1	Did health worker given ORS to the mother?		
2	Did health worker explain and demonstrate to make the ORS?		
3	Did health worker explain substitution of ORS packet?		
4	Did health worker tell you how to give ORS?		
5	Did health worker explained to give ORS when the children vomit?		
6	Did health worker explained to give ORS if the child does not like to drink?		
7	Did health worker tell you how long ORS solution can use?		

PART 5: FAMILY SUPPORT

No	Statement	Yes	No
1	The family assist to buy the ORS packet if did not prepare at home		
2	The family less support if the child to given ORS		
3	The family assist to make a solution ORS		
4	If did not prepare the ORS packet family to make SSS		
5	The family assist to give SSS		
6	The family follow keep ORS at home		

PART 6: Mother Proper & giving ORS / SSS.

1. What did you use?

☐ ORS packet ☐ Other

No	Steps	Yes	No
1	Did you wash hands with soap and water before mix ORS?		
2	Have you already cleaned liter bottle or other container?		
3	Filling with cool water which have been boiled?		
4	Use 1 ORS packet per one time preparation		
5	Pour ORS from the packet into bottle		
6	Did you store ORS in a cool place?		
7	Keep ORS in a cool place within 24 hours		
8	Feed children the mixture of ORS by using a clean teaspoon		
9	Feed children the mixture of ORS properly after children get diarrhea		
10	Continue using ORS the mixture even though children were nausea or vomiting		
11	Feed children the mixture of ORS until diarrhea stops		

DAFTAR PERTANYAAN

Tanggal :

Nama petugas :

Nama Ibu :

Alamat :

I. Data individual

1. Umur . . . . . th.

2. Pekerjaan : a. Ibu rumah tangga d. Pegawai
b. Pedagang e. Petani
c. Pekerja f. Lainnya : . . . . . .

3. Pendidikan : a. Buta Huruf. d. Sekolah Lanjutan Atas.
b. Sekolah Dasar e. Perguruan Tinggi.
c. Sekolah Menengah Pertama f. lainnya : ……

4. Pendapatan keluarga : Rp. . . . . ..

5. Agama:

II. Pengetahuan ibu ttg Diare dan penggunaan Oralit.

Lingkarilah jawaban yang dianggap benar.

1. Tanda-tanda diare pada anak adalah :

a. Buang air besar 1x sehari

b. Buang air besar sekurang-kurangnya 3x sehari

c. Buang air besar disertai dengan darah.

2. Penyebab umum diare adalah karena makan dari mak/min yang tercemar.

a. Benar b. Salah

3. Tanda-tanda bahaya diare pada anak: bibir, kulit kering, mata dalam.

a. Benar b. Salah.

4. Dehidrasi adalah kehilangan banyak cairan selama diare.

a. Benar b. Salah

5. Penyebab utama kematian anak pada akut diare ialah dehidrasi.

a. Benar b. Salah

6. Campuran Oralit terdiri dari garam, gula dan air

a. Benar b. Salah

7. Oralit dapat digunakan untuk mencegah dehidarasi pada diare akut.

a. Benar b. Salah

8. Oralit adalah obat yang aman untuk mengobati diare akut.

a. Benar b. Salah

9. Diare adalah bukan penyakit menular

a. Benar b. Salah

10. Cuci tangan sebelum memasak tidak dapat mencegah diare

a. Benar b. Salah

11. Air yang tercemar sumber dari diare

a. Benar b. Salah

12. ASI dapat mencegah diare khususnya untuk bayi.

a. Benar b. Salah.

13. Anak yang terkena diare tidak harus minum air

a. Benar b. Salah.

III. Persepsi Ibu ttg diare, keuntungan dan kesulitan menggunakan Oralit.

1. Diare untuk anak-anak adalah penyakit yang membahayakan .

   a. Setuju b. Tak setuju c. Tidak yakin

2. Anak yang sering kena diare akan tidak sehat.

   a. Setuju b. Tidak setuju c. Tidak yakin

3. Untuk anak diare antara lain disebabkan karena kurang gizi.

   a. Setuju b. Tidak setuju c. Tidak yakin

4. Anak balita yang kena diare lebih besar resikonya untuk meninggal dari pada anak dewasa.

   a. Setuju b. Tidak setuju c. Tidak yakin

5. Kadang-kadang diare pada anak Balita menyebabkan kematian.

   a. Setuju b. Tidak setuju c. Tidak yakin

6. Diare adalah penyakit yang mudah untuk diobati.

   a. Setuju b. Tidak setuju c. Tidak yakin

7. Anak yang tidak kena diare lebih sehat dari yang kena diare.

   a. Setuju b. Tidak setuju c. Tidak yakin.

8. Anak yang tidak kena diare lebih kebal dari penyakit, dari pada yang kena diare.

   a. Setuju b. Tidak setuju c. Tidak yakin.

9. Keuntungan mencegah diare dapat menurunkan kematian pada anak Balita

   a. Setuju b. Tidak setuju c. Tidak yakin.

10. Pencegahan diare dapat membuat bayi dan anak hidup bahagia.

    a. Setuju b. Tidak setuju c. Tidak yakin.

11. Diare pada anak balita tak dapat dicegah karena tidak punya waktu untuk menyiapkan makanan segar untuk mereka.

a. Setuju b. Tidak setuju c. Tidak yakin

IV. Perilaku Tenaga Kesehatan / Kader.

1. Apakah kader memberikan Oralit kepada Ibu .

a. Ya b. Tidak

2. Apakah kader menjelaskan dan memberi contoh dalam membuat Oralit

a. Ya b. Tidak

3. Apakah kader menjelaskan pengganti dari Oralit.

a. Ya b. Tidak

5. Apakah kader mengatakan bagaimana cara memberikan Oralit.

a. Ya b. Tidak

6. Apakah kader menjelaskan cara memberikan Oralit bila anak muntah

a. Ya b. Tidak.

7. Apakah kader menjelaskan cara memberikan oralit bila anak tidak mau minum.

a. Ya b. Tidak.

8. Apakah kader mengatakan berapa lama larutan Oralit dapat digunakan

a. Ya b. Tidak

V. Dukungan Keluarga.

1. Keluarga membantu membeli Oralit jika tidak tersedia di rumah.

a. Ya b. Tidak

2. Keluarga kurang mendukung bila anak diberikan Oralit.

a. Ya b. Tidak

3. Keluarga membantu dalam membuat larutan Oralit.

a. Ya b. Tidak

4. Jika tidak tersedia Oralit apakah keluarga membuat Larutan Gula Garam.

a. Ya b. Tidak.

5. Keluarga membantu dalam memberikan Larutan Gula Garam .

a. Ya b. Tidak

6. Keluarga membantu menyimpan Oralit di rumah.

a. Ya b. Tidak

VI. Ibu menyiapkan dan memberikan Oralit.

1. Apakah yang digunakan ?

a. Oralit b. Yang lainnya..

2. Apakah Ibu mencuci tangan dengan sabun sebelum mencampur Oralit

a. Ya b. Tidak

3. Apakah mempunyai sebuah botol atau tempat lain yang bersih.

a. Ya b. Tidak

4. Mengisi dengan air dingin yang telah dimasak.

a. Ya b. Tidak

5. Setiap kali menyiapkan Oralit menggunakan satu bungkus.

a. Ya b. Tidak

6. Tuangkan Oralit dari saset kedalam botol.

a. Ya b. Tidak

7. Apakah ibu menyimpan Oralit ditempat yang dingin.

a. Ya b. Tidak

8. Menyimpan Oralit dalam waktu 24 jam ditempat yang dingin.

a. Ya b.Tidak

9. Meminumkan campuran Oralit dengan menggunakan sendok yang bersih.

a. Ya b. Tidak

10. Meminumkan campuran Oralit dengan tepat setelah anak dapat diare.

a. Ya b. Tidak

11. Menggunakan campuran Oralit secara kontinyu walaupun anak sakit kepala atau muntah-muntah.

a. Ya b. Tidak

12. Anak diberikan Oralit sampai diare berhenti.

a. Ya b. Tidak

BIOGRAPHY

NAME	Adji Seno
DATE OF BIRTH	October 1, 1955
PLACE OF BIRTH	Bandung, West Java
INSTITUTION ATTENDED	Makassar University Makassar, Indonesia 1998 – 2000 Bachelor of Public Health
FELLOWSHIP	DHS ADB
PRESENT POSITION	Environmental Health Section Health Office of North Sulawesi Province