

## **CHAPTER III**

### **PROPOSAL**

#### **ASSESSING FACTORS AND THEIR RELATIONSHIPS AFFECTING ACUTE RESPIRATORY INFECTION IN CHILDREN UNDER FIVE AT THE NATIONAL PEDIATRIC HOSPITAL PHNOM PENH, CAMBODIA**

##### **3.1 Rational and Justification**

There is no trust more sacred than the one the world holds with children. There is no duty more important than ensuring that their rights are respected, that their welfare is protected, that their lives are free from fear and want that they grow up in peace. The State of the World's Children 2000 is a rallying call to us all. It is a call to governments, civil society, the private sector and the whole international community to renew our commitment to the children's rights by advancing a new vision for the 21<sup>st</sup> century: a vision in which every infant has a healthy beginning, every child a quality education and every adolescent the opportunity to develop his or her unique abilities. It is also a call to families and communities- and to children and adolescents themselves- to make their voices heard in helping translate this vision to reality in their daily lives (1).

Every year 12 million children in developing countries die before they reach their 5<sup>th</sup> birthday, many during the 1<sup>st</sup> year of life. Seven in ten of these deaths are due to acute respiratory infection (mostly pneumonia), diarrhea, measles, malaria or malnutrition (2). More than 90% of deaths due to childhood pneumonia occurred in developing countries who died of pneumonia were children younger than 5 years old (3). ARI is one of the most frequent illnesses among children under 5 years throughout the world, with an average of 4-13 episodes per child annually (4).

In Thailand, in 1995 total under-five deaths were 36,497 among them 12,300 deaths were due to ARI (33.7% of total deaths) (5). The mortality in rural areas was 2-3 times greater than in urban areas. The case fatality rate of hospitalized patients is 5%-10%. The risk of death includes treatment delay, disease severity and defect in children's defense mechanism. In addition, 30%-50% of children visiting general hospitals are affected with ARI and about 10% of them need hospitalization (6).

In Cambodia, many problems have been caused or exacerbated by civil war and the economic embargo endured by the country for nearly two decades. These have led to the almost total destruction of national infrastructure, production system and social services, in particular for the health sector. All these resulted in high morbidity and mortality rates. In 1999, infant mortality rate was 80 per 1000 live births and under-5 mortality rate was 115 per 1000 live births (7). The child indicators in 1999 revealed that ARI disease still was a major health problem, more than 25% of out-patient and 40% inpatient were occupied by patients children under 4 years old with ARI (7).

ARI disease is a burden not only to the government and family resources but also to the individual child because it effects on the physical growth. ARI and diarrhea diseases, including cholera, are the major causes of morbidity and mortality among children under five in Cambodia. Limited community based surveys among the most vulnerable children under five suggested that within the past two weeks 39% had experienced episodes of diarrhea, while 35% had symptoms suggestive of pneumonia. Together, these diseases account for over 50% of deaths among children under five. Costs of health care are greatly increased by the frequent inappropriate treatment and multi-drug prescription for these illnesses which account for 62% of outpatient pediatric consultation (8).

Almost caretakers of children under 5 often present their children with pneumonia too late to a trained health worker, because of a lack of knowledge about its danger signs, how to take care the sick child at home and constraints in their social environment. Because many episodes of pneumonia leads to death within 3-5 days , easy and quick access to antimicrobial therapy is a crucial factors in reduction of mortality from pneumonia. Unlike diarrhea disease control programs, which promote health care practice at home that can by themselves reduce diarrhea mortality. ARI control program requires that caretakers know when to seek care outside home. Many death cases from pneumonia occurred because of sick children are brought to a health worker for care too late or not at all. For an effective case management program, caretakers should know how to recognize the signs of pneumonia and comply with a full course of antimicrobial. The caretakers must not expect an immediate cure from

the antimicrobial and should know that they must return the sick child to the health service if the child does not improve or becomes worsen.

Experience has shown that it is possible to teach family members to observe the breathing of the young children and the qualitative impression of fast breathing has been found to be predictive of the presence of pneumonia. To be effective, health education must be based on an accurate understanding of the prevailing knowledge, beliefs and practice of the community. Message that encourage to recognize the signs of pneumonia should be result of good ethnographic research that provides information on how caretakers perceive pneumonia and identifies obstacles to care seeking from an appropriate health care providers (9).

According to prevention and control programs (WHO/UNICEF joint statement, 1985) caretakers should have knowledge about ARI and its management to decrease morbidity and mortality rate in children. Caretaker's knowledge and care practice play a key role to reduce the severity of ARI because caretakers have a close contact and take care of their children. If the caretakers have a proper knowledge and understand well in term of care practice, the severity will be reduced. It is very important to investigate the relationship between knowledge, care practice, socio-demographic factors of the caretakers, environmental and children factors and the severity on the clinical of diagnosis of ARI among children under 5 years of age.

The purpose of this study is to determine the severity of ARI sick children under 5 years of age (mild, moderate and severe) and its relationship with knowledge,

care practice, socio demographic factors of caretakers, environmental and children factors at the National Pediatric Hospital , Phnom Penh, Cambodia.

### **3.2 Research questions**

- What is the existing knowledge and care practice among caretakers in terms of ARI among children under five years of age at National Pediatric Hospital, Phnom Penh, Cambodia ?
  
- Is there relationship between (socio- demographic factors of caretakers, knowledge's caretakers, care practice's caretakers, environmental factors and children's factors) and the severity of ARI among children under five years of age ?

### **3.3 Objectives**

- **General objective**

To identify key factors that affect the severity of ARI in order to inform health promotion and health education programme on ARI in Phnom Penh, Cambodia.

- **Specific objective**

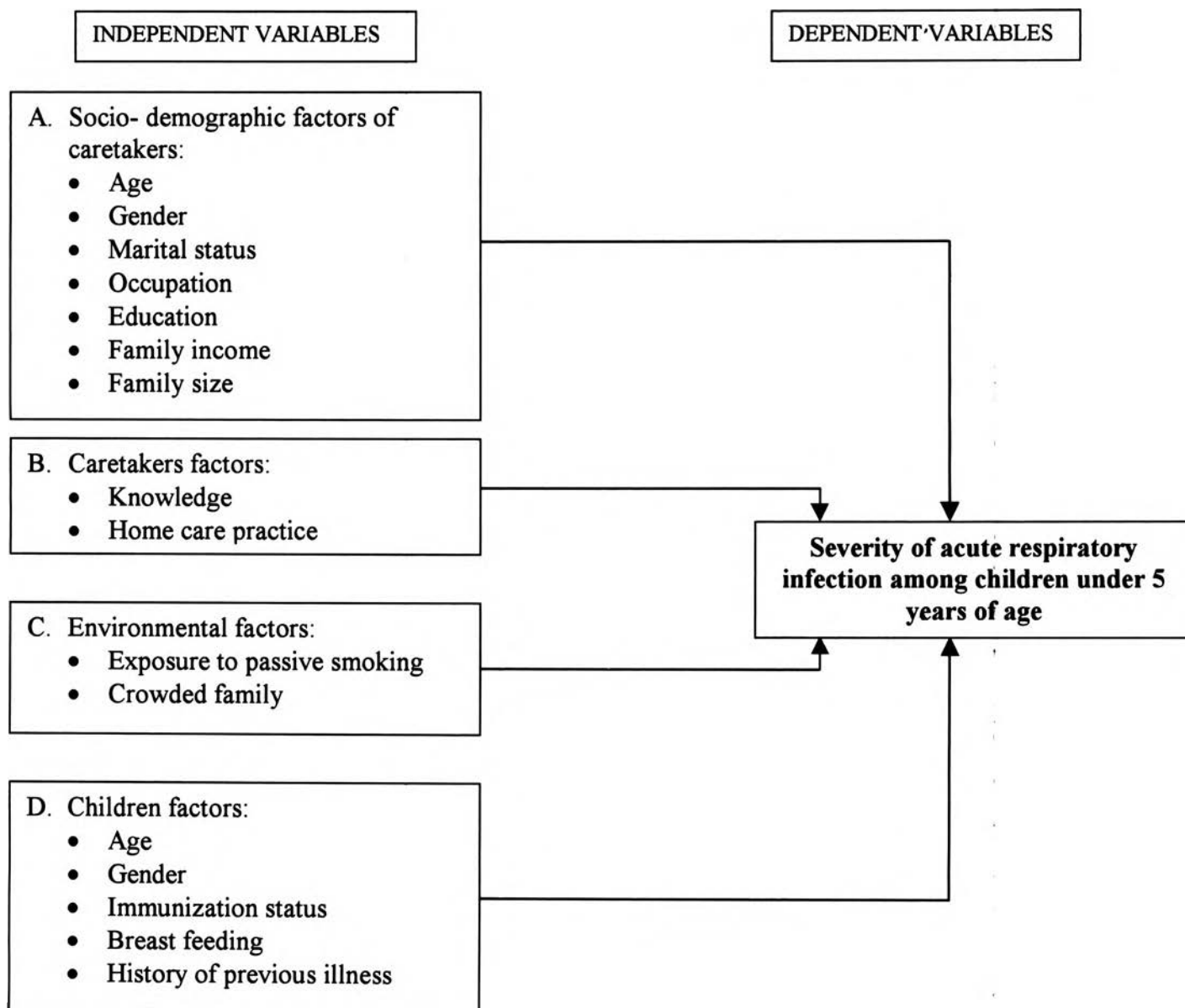
1. To describe the existing level of knowledge and care practices of caretakers related to ARI among children under five years of age.
2. To identify the relationship between the socio-demographic factors of caretakers and the severity of ARI among children under 5 years of age.
3. To identify the relationship between the caretakers knowledge on ARI and the severity of ARI among children under 5 years of age.
4. To identify the relationship between the caretakers self care practice to their children and the severity of ARI among children under 5 years of age.
5. To identify the relationship between the environmental factors and the severity of ARI among children under 5 years of age.
6. To identify the relationship between the children's factors eg, age and gender of sick children, breast feeding, immunization status and the severity of ARI among children under 5 years of age.

### **3.4 Conceptual Framework**

In this study the dependent variable is severity of acute respiratory infection. The independent variables concerning to the study were divided into 4 groups which includes:

- (a). Socio-demographic factors.
- (b). Caretakers factors (knowledge and care practice).
- (c). Environmental factors.
- (d). Children factors.

The conceptual framework of the relationship of the dependent and independent variables are shown as following:



**Figure 3.1** Conceptual framework of the relationship between knowledge, home care practice of the caretakers in relation to the severity of ARI among children under 5 years of age.



### **3.5 Hypothesis**

- (1) There is an association between the socio-demographic factors of the care takers such as age, education, occupation, marital status, family income, family size and the severity of ARI among children under 5 years of age.
  
- (2) There is an association between the knowledge of caretakers on ARI and the severity of ARI among children under 5 years of age.
  
- (3) There is an association between the home care practice of caretakers on ARI and the severity of ARI among children under 5 years of age.
  
- (4) There is an association between the environmental factors such as exposure to passive smoking, crowded family and the severity of ARI among children under 5 years of age.
  
- (5) There is an association between the children factors such as age, gender, immunization status, breast feeding, history of previous illness and the severity of ARI among children under 5 years of age.

### 3.6 Operational definitions

1. **Severity of ARI** : It means the appearance of any symptoms among children under five years of age, the degrees of severity may be mild, moderate or severe according to the symptoms.
  - (a) **Mild** : In this study the following cases as regarded as mild cases. It includes common cold, rhinitis, influenza, pharyngitis, tonsillitis, adenoiditis, otitis media, and sinusitis.
  - (b) **Moderate** : In this study, the sick children diagnosed as bronchitis, asthma, and acute epiglottitis would be defined as a moderate cases.
  - (c) **Severe** : In this study the sick children diagnosed as pneumonia/pneumonitis would be defined as a severe cases.
2. **Caretakers** : It refers to persons, who have children under five years of age with ARI and bring to National Pediatric Hospital for treatment seeking during the study period.
3. **Caretaker's Knowledge** : It means caretaker's comprehension about cause, transmission, symptoms, prevention and management of ARI in children under five years of age.

4. **Home care practice** : In this study emphasize on care or look after the children by caretakers during getting ARI at home before seeking care from trained health personnel. For example, giving more fluid when the children have a high fever or avoid the children from environmental risk of passive smoking.
5. **Passive smoking** : It means any member in the household who are currently smoking, whether being mother or father or others member of the family, which cause smoking risk.
6. **Complete immunization** : It refers to the children who received full immunization scheme according to the schedule provided by trained health personnel.

### **3.7 Usefulness of the study**

The result of this study will provide some needed information related to ARI children under five years of age in term of knowledge and home care practice of caretakers. Some recommendations for the health manager and the result will be helpful to take any preventive or control program in the future in Cambodia.

### **3.8 Research methodology**

#### **3.8.1 Research design:**

The study is a cross sectional study of the caretakers who bring children under five years of age with ARI.

#### **3.8.2 Study site:**

The study will be carried out at National Pediatric Hospital of Phnom Penh city, the capital of Cambodia.

#### **3.8.3 Study population:**

The target population of this study are the caretakers of children under five years of age who attend in Out Patient Department and In Patient Department at the National Pediatric Hospital. It is expected that this group of population will provide the necessary information to achieve the general objective.

#### **3.8.4 Sample size estimation and sampling technique:**

Due to had no information related to proportion on the severity of ARI (episodes of ARI: times/ year) among children under five years of age in Cambodia, in order to calculate the required sample size in this study we

assume that the proportion of the severity of ARI in Cambodia is 50% (p=0.5).

Sample size estimation can be determined by the formula:

$$n = \frac{Z^2 \times p \times q}{d^2}$$

n = Estimated sample size

z = Reliability of coefficient based on the level of confidence

p = Proportion of the severity of ARI

q = 1- p

d = Maximum acceptable deviation from the true frequency

let, the level of significance = 0.05

z = 1.96

p = 50% = 0.5 (episode of ARI was 50 times/ child / year).

q = 1- 0.5 = 0.5

$$n = \frac{(1.96)^2 \times (0.5) \times (0.5)}{(0.05)^2} = 385$$

In this study the estimated sample is 385.

systematic sampling will be chosen for sampling technique.

### **3.8.5 Research instrument for data collection**

In this study structured questionnaires containing both closed and open ended questions will be used for data collection. Questionnaires consists of five parts. The first part contains socio-demographic factors of caretakers such as: age, address, marital status, educational level, occupation, family income, family size..., The second part of questionnaires contains environmental factors focus on exposure to passive smoking and crowded family. The third part deals with information about caretaker's knowledge related to ARI children under five years of age. The fourth part deals with information about caretaker's self care practice related to ARI children under five years of age and the fifth parts deal with information about children factors such as: age, gender, birth weigh, complete vaccination, breast feeding and history of previous illness.

### **3.8.6 Data collection procedure**

Questionnaires for data collection of this study will prepare in Khmer language. Data will be collected by face-to-face interview of the caretakers. Interviewers will be selected from the nurses working at National Pediatric Hospital. The interviewers will be given an orientation on how to interview and how to fill up the questionnaires. Pre-testing will start at Municipal hospital. For reliability Cronbach's Coefficient of Alpha will apply to test for reliability. If  $\alpha$  more than 0.7 ( $\alpha > 0.7$ ), it will be acceptable. Some correction and change will be made after pre-testing and before the data

collection process to ascertain its correct validity. The whole process completed according to the following steps:

1. Find sponsor for budget support to conduct the research project.
2. Introduce action of proposal including activities plan and budget estimation for the study.
3. Contact closely with director of technical department of hospital.
4. Ask for working schedule.
5. Select interviewers.
6. Training interviewers.
7. Provide the questionnaires to trained interviewers.
8. Collect of questionnaires back from the interviewers after finishing data collection process.

### **3.8.7 Data processing and analysis**

After the completion of data collection, Data will be edited, coded, entered, verified and analyzed by using SPSS 10.0 for Windows program. Finally, the result will be presented by:

- Frequency distributions of variables.
- Percentage, mean and standard deviation.
- Chi-square test will be used to determine association between independent and dependent variables according to the conceptual framework and objective of this study.

### **3.8.8 Scoring and classification criteria**

#### **a) Scoring**

For knowledge a correct answer will receive a score, an incorrect answer will receive a score of zero . For care practices, the way of giving the score is the same, but the score will be reversed for negative questions. The summation of the scores of each component of each variables will be conducted.



## **b) Classification criteria**

Classification criteria will be done as following:

- For the knowledge, if the scores are equal or more than 60% of the total scores it will be classified as “satisfactory” level and less than 60% of the total scores it will be classified as “unsatisfactory” level.
- For the care practice, if the scores are equal or more than 60% of the total scores it will be also classified as “satisfactory” level and less than 60% of the total scores it will be classified as “unsatisfactory” level.

## **3.9 Ethical consideration**

- **Right to raise opinion from respondents**

Interviewers should respect the caretaker’s right, asking for their consent is very important, sometimes, they are very busy or worry so much about their children we should not force them to cooperate or provide information related to our study.

- Interviewers must know that all answers from respondents should keep anonymous, because caretakers may fell afraid of what they said.

- Encourage the respondents to answer free, no right and wrong answer, because some of caretakers stigmatize to answer to what they did know clearly or not sure about.
- Interviewers must clarify all points that the caretakers misunderstood after interviewing process finish.

### 3.10 Activity Plan with timetable ( Figure 3.2)

Activities	2002											
	J	F	M	A	M	J	J	A	S	O	N	D
Introduce action of proposal	<b>X</b>											
Contact and prepare study location		<b>X</b>										
Create questionnaires			<b>X</b>									
Prepare document for training				<b>X</b>								
Recruit interviewers					<b>X</b>							
Training interviewers						<b>X</b>						



### 3.11 Budget estimation (Figure 3.3)

Items	Number of people	Number of days	Cost /day (USD)	Total (USD)
1. Introduce action of proposal				
▪ Researcher	1	3	20	60
▪ Driver	1	3	15	45
2. Training of interviewers				
▪ Trainer	1	3	20	60
▪ Facilitator	1	3	15	45
▪ Trainees	5	3	15	225
▪ Renting the room for training	1	3	20	60
▪ Documentary for trainees (book, pen, folder...)	5		2	10
▪ Food and coffee break	7	3	5	105
3. Conduct interviewing				
▪ Respondents	385		5	1925
▪ Interviewers	5	10	15	750
▪ Driver	1	10	15	150
▪ Food and coffee break	6	10	5	300
4. Collect data, data analysis, report writing				500
<b>Grand total</b>				<b>4235</b>

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