

CHAPTER IV

A questionnaire to elicit caretakers' knowledge and practices with regard to the symptoms of ARI, in particular fast breathing

4.1 Introduction

The data collection exercise described in this report contains two parts. The first part is the description of a joined effort of some members of Chonburi Province Ministry Of Public Health (MOPH) and myself, to develop a data collection tool with the aim of eliciting information about caretakers' recognition of symptoms of ARI in their children, and their practices. The second part is the report of the survey that was carried out, using this data collection tool.

The data collection exercise served two objectives. The first objective was to design a data collection tool to elicit information on knowledge and practices of caretakers of children under five years old, with regard to ARI in general and pneumonia in particular. The second objective was to test this data collection tool in a survey, that on a later date, could be used by the officers of Chonburi Province MOPH to conduct a survey in the whole province.

4.2 Development of the data collection tool

4.2.1 Objectives

The main objective of developing the data collection tool was to obtain an instrument that would enable its users to:

1. describe caretakers' capability to recognize the different symptoms of ARI and describe their response to these symptoms.
2. describe caretakers' ability to recognize fast breathing as a danger sign of pneumonia and describe their response to this sign.
3. assess if there are delays in health care seeking from a health center or a hospital by caretakers of children less than five with fast breathing.
4. determine which decision-makers are instrumental in the referral process to the health center or the hospital.

4.2.2 Methodology

A participatory approach

As I stated in my essay (section 4.2), I viewed myself in the position of a health programme manager. On the basis of my expertise as a health programme manager, I propose communities to change some part of their behaviour that is conducive to ARI and pneumonia in their children. However, I do not want to force communities, nor do I believe that it is very useful to teach ad hoc lessons, without any reference to the

constraints or problems people may face in their daily lives. Therefore, I will act as a facilitator and propose the community to use a method that allows them to investigate their own felt needs, formulate what they consider problem issues, and to learn how to develop strategies that lead to possible solutions. I think it is important to integrate the community's perceptions of the problem issue and the health managers proposed problem issue in the ultimate definition of the problem. The method I want to use is Participatory Action Research (PAR), in which communities identify their problems, set objectives, and describe strategies to meet their objectives.

I believe there is a need to involve the authorities in such a PAR process. Being mandated to care for the communities' health status, they have an interest in a successfully implemented PAR project. They also may want to support a PAR project. Therefore, I will involve them by providing them with some baseline information, on which they may reflect, and which may provide an incentive to support the PAR process. I propose to collect data about the ARI-related knowledge and practices of people in their constituency. This will be a contribution to inform them about certain behavioural patterns. The data collection exercise serves to give the authorities with a picture of the situation and is as such an element in inducing the PAR project.

As part of my learning process, I conducted such a data collection exercise, in cooperation with members of Chonburi MOPH.. I naturally opted for a participatory approach, which I will describe below.

During our data collection exercise we did not specifically apply the method of PAR, although I could recognize different stages that participants in a PAR process go through. In our approach we accepted each other as equal partners, with complementary strengths and inputs. Often we had long discussions, which enabled us to better understand each other's point, and to reach a consensus. Because of the language barrier, we needed a lot of good will and patience.

During our cooperation my main contribution was to stimulate the process, to care for the validity of the data collection tool, and to analyze the data and present them for discussion to my partners. The officers of the MOPH contributed with their expertise on ARI, their knowledge of local practices and circumstances, and with their access to resources. Their contribution was particularly important with regard to drafting the questionnaire, for which knowledge of local practices and correct wording in Thai were quite important.

Developing the questionnaire was a dynamic, but tedious process. The language gap made conveying messages of a technical nature difficult, and translations from English to Thai would lead to questions that could be interpreted differently in Thai than in English. Often the discussions were held in Thai, and this left the writer of this report in loose control over the precise formulation of some questions (which was also the normal consequence of the participatory approach assumed with the officers of the MOPH).

With our participatory approach we obtained much more than what we would have obtained individually. We drafted a data collection tool adapted to the local situation, and were able to organize its implementation more efficiently (because we had access to ministry staff who knew the target area, and because we were able to use some of the ministry's facilities).

A data collection tool designed to satisfy two perspectives

Designing the data collection tool served two interests: one emanating from Chonburi Provincial Ministry of Public Health, section of Acute Respiratory Infections in Children (MOPH-ARIC), and one from the writer of this report, Marc Vandenberghe, student at the College of Public Health, Chulalongkorn University.

As a student I had taken an interest in the issue of recognition of the danger signs of pneumonia in children aged less than five, and their timely presentation to a trained health worker (especially in situations where caretakers have no easy access to a trained health worker). According to the literature, a major cause of mortality for pneumonia in this age group was due to delays in presenting the sick children for treatment by a trained health worker (Iyun & Tomson, 1996). Reasons of delays can be as diverse as lack of knowledge of the danger signs of pneumonia, self-care, traditional healing methods, or socio-economic obstacles (Malik Kundi et al., 1996; Hudelson et al. 1995; McNee et al., 1995; Iyun & Tomson, 1996).

An important danger sign of pneumonia is fast breathing. It is an indication that a child suffers from moderate pneumonia (WHO, 1994). Malik Kundi et al.(1996) state that fast breathing is the single best sign that a child has pneumonia and Iyun & Tomson (1996) stress that mothers should learn to recognize fast breathing and know that it is a sign of danger. Also, Stanek et al. (1993) advocate the use of objective criteria, like respiratory rate, in investigations of the etiology of ARI. Therefore, my interest focused on caretakers' ability to recognize fast breathing as a danger sign of pneumonia, as well as on their response when observing this sign.

When I met officers of the MOPH-ARIC, they expressed a more general concern. They were worried about the high rate of over-consumption of antibiotics in the province (about 30% for treatment of colds at health center level - see Appendix 4.1)¹. This observation cast a doubt both about the health workers' performance (case management) and the caretakers' knowledge about ARI and its treatment. Caretakers were suspected to push health workers to prescribe antibiotics in cases where this was not warranted. The MOPH-ARIC's main interest was knowing which symptoms of ARI caretakers recognize, and how they respond to these symptoms. However, as the officers stated, no systematic study of caretakers' knowledge and practices, or their health care seeking behaviour with regard to ARI in Chonburi province, was available. For this reason, they were interested in a survey, targeting caretakers of children aged less than five, and aiming

¹This figure still remains under the national average of known over-consumption of antibiotics.

at understanding their knowledge and practices regarding the symptoms of ARI. However, conducting a survey covering the whole province, was beyond the objectives of the data collection exercise, which is part of my study. Therefore, we looked for a compromise, which we found when we considered designing and testing a data collection tool, that could be used as a basis to conduct a survey on a broader scale. Eventually, we drafted a questionnaire, and tested it by conducting a survey in one district of Chonburi Province.

One of our main requirements was that the data collection tool should allow us to obtain information that satisfied both perspectives. Since fast breathing is one of the symptoms of ARI, my perspective could be envisaged as part of the MOPH-ARIC's more global perspective. The information we wanted to elicit related to: (1) do caretakers' recognition of symptoms of ARI, and (2) caretakers' responses.

The data collection method to be chosen should provide information:

- a) about caretakers' knowledge of and responses to the overall symptoms of ARI
- b) about caretakers' ability to recognize fast breathing and their response to this sign

For objective "a" the target group could be all caretakers of children less than five, whereas for objective "b" the target group would preferably be caretakers who have or had a child with pneumonia. While caretakers under objective "b" could be expected to be able to give information on all symptoms of ARI and their responses, inclusive fast breathing,

caretakers under objective “a” were less likely to be able to give information on fast breathing. So, the common denominator was: parents who had been exposed to a child with pneumonia. Given this we decided to trace these caretakers, and try to reconstruct the episode of their sick child. This would allow us to investigate their past behaviour, as opposed to their hypothetical behaviour. Our approach was to measure their knowledge on the basis of reports of recognition of symptoms and actions in the past, rather than by asking theoretical questions.

We opted for a questionnaire. This had the advantage that we would be able to ask questions related to a broad range of symptoms of ARI, with which we would obtain a general overview of the respondents’ knowledge and practices related to ARI. However, a questionnaire would not give detailed information that could be gained when using other methods, like in-depth interviews, Focused Ethnographic Studies, or participatory methods. The latter methods could not be applied in this study for reasons of time and budget limitations. To limit transport constraints we decided to trace respondents only in Muang district.

4.2.3 Results: drafting of a questionnaire

As indicated in section we opted for a questionnaire. Inspired by Malik Kundi et al. (1996), who aimed at examining real-life perceptions and practices of mothers, who had brought their child to a hospital with an illness subsequently diagnosed as pneumonia, we decided to ask the respondents some questions related to their past exposure to

pneumonia in their children. Some “programme manager’s questions”, mentioned in Upayokin, Dendoung, Muttiko & Ukoskit (1991), served as a source of inspiration to phrase our questionnaire.

Some of the above-mentioned questions are:

- Do mothers recognize fast breathing (rapid respiratory rate)?
- Do mothers consider fast or difficult breathing to be serious signs and an indication for seeking medical care promptly?
- Do mothers know that fast or difficult breathing can be signs of a life threatening illness?
- Do mothers recognize wheeze? Is this a sign that prompts them to seek care?
- What other signs do mothers consider serious and seek care for?
- What signs and symptoms in young infants do they consider serious and seek care for?
- Who takes care of the child?
- Do mothers normally increase fluids?
- Do mothers purchase antibiotics or other drugs to treat ARI?
- Do mothers use a remedy (home prepared or purchased) to sooth the throat, or treat cough?
- Who decides when sick children need treatment outside the home?
- What is the sequence and timing of care seeking?
- On average, how long is medical care delayed by first seeking other care?

- Are there common sources of delay in care seeking that could be altered?

I used the above-mentioned questions as a basis to start the discussions on drafting the questionnaire. During the discussions, the officers of the MOPH were instrumental in formulating questions that could be understood by local respondents. They relied on their knowledge of some practices related to ARI in the province, or on their personal experiences, to reformulate my draft questionnaire, or propose alternative answering options. For example, contrary to my idea, they did not deem it necessary to define fever, since they considered that every mother would recognize fever in her child.

Most questions were offered with alternative answer options. Only when my partners could not anticipate possible answers, we would formulate an open-ended question. We avoided formulating questions with a technical wording. For example, we decided to use the term “noisy breathing”, instead of “stridor” or “wheezing”.

Following a long process of discussions and corrections, a preliminary questionnaire was drafted (see Appendix 4.2). This questionnaire contained following parts:

- A section to register the respondents' personal data
- Questions to elicit information on the respondents' health care seeking habits
- Questions related to the respondents' perception of signs of ARI in their sick child (including a control question).
- Questions related to the respondents' responses when noticing the signs of ARI.

- Questions related to the respondents' attitude with regard to the signs of ARI

A pre-test was carried out in the first week of February by a staff member of Chonburi hospital. Five respondents had been selected on the basis of diagnosis of pneumonia and treatment of their child in the hospital in the previous weeks. The pre-test gave rise to many changes in the questionnaire (see Appendix 4.3):

- The control question, in which the respondents were requested to describe the symptoms they had seen, was found difficult to answer. The respondents would either give no answer, or repeat the symptoms they had noticed, without trying to describe them. Therefore, this question was dropped.
- We decided to opt for a systematic review of signs that respondents possibly had noticed, rather than asking respondents to mention which signs they had seen from a list of signs.
- We removed the questions about attitude, because they were confusing for the respondents.
- We linked each answer in which a symptom was recognized directly with a certain course of action taken.
- In the section about personal data we noticed that we should clearly state whether data requested pertained to the caretaker or to the child. We also realized that we should ask more information, such as income and profession, and request the respondents to give their address.

Appendices 4.4 and 4.5 show the definite versions of the questionnaire (in Thai and in English).

4.2.4 Lessons learned from the process of designing the data collection tool

I learned lessons related to the participatory process, and working with people, and lessons related to the data collection tool.

The participatory process and cooperating with people

One should accept the advantages and disadvantages of the participatory process. The advantages are related to input and output of the exercise. It is possible to combine one's strengths and increase access to resources. On the other hand, each participating individual may lose control over part of the proceedings and the results. Each participant should decide how much control she/he is willing to give up.

As a consequence of the participatory approach, I would sometimes lose control of the proceedings. It would happen that the discussions would go in a direction that I had not anticipated. Also, since the data collection tool, a questionnaire, was to be written in Thai, and since for my partners it was easier to discuss technical issues in their native language, sometimes I was not able to participate in the discussions and had to trust my partner's opinions and formulations. I think that, when working with people with whom one shares a small language basis, it may be necessary to bring in a translator for crucial sessions.

Further, I depended on the MOPH's capacities, which meant that not all aspects of the data collection exercise went as I had desired. For example, I would have given a more intensive training to the interviewers, than actually was possible. One lesson I draw from this is that when organizing specific sessions (like introduction of questionnaire to interviewers, and training), one should agree in advance with one's partners on detailed schedule and time needed. If this is not done, then the session may not produce the desired results.

Most important of all, I learned that, as a health manager, it is possible to cooperate with the authorities and obtain a common perspective of the situation, which is a useful basis to implement an intervention. I believe that in our case it would have been possible to exchange ideas on setting up a PAR process and jointly support such a project with some community in Muang district.

The questionnaire

One should be as precise as possible when formulating a question. For each question the questionnaire should mention whether only one or more answers can be given. When respondents can skip certain questions, the sequence of the questions should be clearly indicated. It is better to avoid open-ended questions, because the respondents may give very diverse answers that can not be coded easily. Before starting to draft our questionnaire, we should have made an inventory of health facilities or health care practices available to the residents of the district, and agree on their specific definition.

It is important to take the time necessary to have a thorough test of the questionnaire. After our first test we should have conducted a second test. This would have given valuable information about the interviewers' perception of the last part of the questionnaire (as from question 16, see Appendix 4.5), which may have been confusing, and given an indication for possible improvements.

4.3 Field survey

4.3.1 Methodology

Target area: Muang district in Chonburi province.

Muang district of Chonburi province was chosen because it was the biggest district of the province and within easy access of the provincial offices of the MOPH. It is the capital district of the province and is divided in 18 tambons. The total population of Muang district is 238,449 and the total population of children less than five is 16,859 (figures for 1997, provided by MOPH Chonburi).

The main morbidity in children less than five is diarrhoeal diseases (57% of all morbidity reported in Muang district in 1997). Pneumonia comes second (19%), and exceeds the average of the whole province (12%). For more details, see Appendices 4.6 and 4.7.

Population and sample

The target group were caretakers of children less than five. Since the study had to combine multiple objectives (describing caretakers' knowledge and practices with regard to symptoms of ARI in general, and with regard to fast breathing in particular; and describe caretakers' experiences when bringing their children with pneumonia to a trained health worker) there was a need to find caretakers who had experience with pneumonia and who had brought their child to a trained health worker. To comply with these needs it was decided to interview caretakers whose child had been treated for pneumonia, to ask them questions related to the general symptoms of ARI, and to pneumonia, and to the process of bringing their child to a trained health worker.

We opted for interviewing caretakers of children who had been treated for pneumonia in Chonburi hospital between 1 January and 31 December 1997. The total number of cases of children less than five registered was 306. This figure constituted the study population.

Sample size

For the calculation of the sample size I asked advice from a statistician², as is recommended by Aga Khan Foundation (1993). First, the sample size (n1) for a very large (infinite) population was calculated:

²My adviser, Mrs. Wacharin Tanyont

$$n1 = Z^2 (pq)/d^2$$

Second, the final estimate of sample size (n) was obtained by adjusting (n1) by a finite population correction factor, as follows:

$$n = n1 / (1 + n1/N)$$

“p” was defined as the proportion of respondents expected to report the sign of fast breathing. Since no knowledge was available, “p” was set as 50%. “Z” was a percentile of the standard normal distribution, determined by the 95% confidence level. The acceptable error “d” was 10%.

The calculations gave following results:

$$n1 = [(1.96) (1.96) (0.5) (0.5)/(0.1) (0.1)] = 96$$

where population size = 306, then:

$$n = 96/(1+96/306) = 73 \text{ (sample size)}$$

Sampling method

The sampling method used was (1) purposive sampling, followed by (2) multistage sampling (Lwanga S. & Cho-Yook Tye, 1986).

1. Purposive sampling

A list of Chonburi hospital was used with all patients under five years old, who had been treated for pneumonia in the course of 1997. This list was used to locate respondents in sampling units determined by the multistage sampling. Given the purposive sampling method, it is not possible to generalize the results of the survey to the population of the whole district. No information is available about caretakers who did not seek health care from trained health workers at all.

2. Multistage sampling

Firstly, PSUs were determined, according to the rural or urban character of the tambons in the district (see Appendix 4.8). Two urban, one semi-urban, and one rural PSU were determined. Two urban PSUs were determined to account for the two geographically distinct urban areas in Muang district (see Appendix 4.9). Secondly, the sample size of each PSU was calculated on the basis of the proportion of cases of pneumonia in each PSU (see Appendix 4.10). Thirdly, from each PSU a number of tambons, or Secondary Sampling Units (SSU) were selected at random (see Appendix 4.11). Fourthly, from each SSU villages, or Tertiary Sampling Units (TSUs) were selected at random. However, this was done only in two cases: San Suk and Baan Suan. This could not apply to Baan Kot, that, being part of Chonburi town, does not contain villages. As for the four tambons of

PSU four, they contained villages with a limited number of cases, which would make sampling them impractical (see Appendix 4.12).

Fifthly, household addresses for each cluster were selected from the hospital listing. The selection contained about 100 addresses. The sample unit was: caretakers of children less than five who had been treated for pneumonia in Chonburi hospital between 1 January and 31 December 1997.

4.3.2 Interviews

Training of interviewers

The interviewers were officers of District Muang Health Office, working in the tambons that were in the sample. An information and training session was organized on 27 February 1998. My agenda for this meeting was:

- To inform the interviewers of the reasons and objectives of our data collection exercise
- To ask them to inform the respondents of why the data collection exercise was being held, that there were no good or bad answers, and that confidentiality was guaranteed.
- To explain the questionnaire by reviewing each question and possible answers
- To conduct the interview as a way of training

Unfortunately, the training of interviewers was not intensive enough due to time pressure. They were engaged in other activities and this clearly affected their concentration. We had no opportunity to organize a small training in interviewing, which would have allowed us to pre-empt possible problems.

Conducting the interviews

The interviews were carried out between 27 February and 13 March 1998. The respondents were caretakers of children less than five who had been treated for pneumonia in Chonburi hospital in the course of 1997. All respondents were residents of Muang district, Chonburi Province.

Each interviewer was given a number of questionnaires and a list of addresses of potential respondents in his/her tambon. The addresses were obtained from the hospital through an officer of the district health office. Unfortunately, 75 patients were registered without a domicile. This left them *de facto* out of the sample. The questionnaires were numbered from 1 to 73.

The interviewers returned their completed questionnaires to the district health office on 13 March 1998. We obtained only 56 interviews. Reasons some interviewers gave for incomplete sample coverage were: (1) prospective respondents had moved, or could not be found, (2) some patients were mentioned more than once on the list of patients treated for pneumonia in Chonburi hospital. Given the time-limit and the

increased investment needed to reach the missing respondents, I decided not to try to reach them. The total sample coverage is represented in Appendix 4.13

4.3.3 Analysis

I used EPIInfo software to analyze the data provided in the questionnaire. First, I re-wrote the questionnaire in EPIInfo (using the EPED word processor), using my English version as a basis. In each question variables were defined. These variables could either be a word of up to 10 characters, or a code in figures. Most variables were defined before the questionnaires were returned, but in some cases I had to define new variables, after our first reading of the questionnaires (when many respondents had given different answers to open-ended questions).

I started the analysis by calculating the frequencies for all variables. This gave me a global overview of the respondents' answers. Then I made tables with certain variables that I deemed important for my study. For example, I made tables with the variables "respondents who state that there is a health volunteer in their village" and "tambon of residence", or "respondents who state that fast breathing prompted them to seek treatment", with "delays incurred when bringing the child to the hospital", and "problems reported", or "educational background". This allowed me to see certain patterns, which I reported in the results.

4.3.4 Results

Respondent profile

Of the 56 respondent caretakers 36 were the mothers of the child, 10 were grandmother or grandfather, 2 were a brother or sister, and 8 were either a relative or a friend. No father was interviewed. They were caretakers of 56 children less than five, of which 6 were less than two months old (see Table 4.1).

Table 4.1: Respondents according to kinship relationship with child

Respondent	Number	Percentage
Mother	36	64
Grandmother/ Grandfather	10	18
Brother/sister	2	4
Relative/friend	8	14
TOTAL:	56	100

Most mothers and other caretakers had a formal education that did not go beyond primary school (68.51% of 54, and 76.407% of 17 respectively). More fathers had a slightly higher education: 41.17% went beyond primary school (see Table 4.2)

Table 4.2: Educational background of parents and/or caretakers

Level of education	Mother		Father		Other*	
	#	%	#	%	#	%
No formal education	2	3.6	1	1.9	2	10
Primary school (form 1-4)	13	23.6	10	19.2	9	45
Primary school (form 5-6)	22	40	19	36.5	2	10
Secondary school (form 1-3)	10	18.2	8	15.4	-	-
Secondary school (form 4-6)	1	1.8	7	13.5	1	5
Higher studies	6	10.9	6	11.5	3	15
Not available	2	3.6	1	1.9	3	15
TOTAL:	56	100	52*	100	20	100

*** in case mother or father are not the caretakers**

**** in four cases father absent**

Twenty mothers declared no income, while the median income of the mothers was 3,500 Baht per month (56 mothers). The median income of the fathers was 6,000 Baht per month (49 fathers). The occupations of most mothers could be divided in two categories: (1)

housewife or housekeeper (34.54% of 55), and hired labourer (43.6% of 55). Most fathers were labourers (71.15% of 52), the bulk of which were said to be hired labourers.

Health volunteers

While 33 of 56 respondents stated that there was a health volunteer in their village (Appendix 4.14), none of them said that they would normally seek health care from them. Only in two cases of the episodes under study did the caretakers consult a health volunteer. Most respondents would seek health care from trained health workers (Primary Health Care centers, private or government hospitals, and private doctors). See also Appendix 4.15.

Overall symptoms of ARI observed

I will use the danger signs mentioned in the *WHO chart for the management of the child with cough or difficult breathing* (WHO, 1994) as a guide to give an overview of the signs observed by the respondents and their response. This chart urges a health worker that notices one of the mentioned danger signs to give the child a first dose of antibiotics and to refer it urgently to a hospital. On the basis of this recommendation I considered all action by the caretakers, other than seeking immediate treatment from a trained health worker, as delaying. Delaying action could be as diverse as doing nothing, or giving a home treatment (e.g. laying a child in an elevated position in case of noisy breathing, administering drugs against fever, asking advice from a person who is not a trained health worker). A combination of seeking treatment from a trained health worker

and another action was also considered delaying on the basis of the assumption that the assistance from the trained health worker was not sought immediately upon observing the danger sign.

i) Specific danger signs for children less than 2 months old

At least three out of six respondents reported two signs that are considered danger signs for children less than two months old (see Table 4.3).

Table 4.3: Danger signs for children less than 2 months old, frequency of observations by caretakers, and action undertaken (n = 6)

Danger sign *	Frequency	Action		
		Trained health worker	Delaying action	not known
Fever	3	2	-	1
Stopped feeding well	2	-	1	1
Fever & Stopped feeding well	1	1 (fever)	1 (stopped feeding well)	-
TOTAL:	6			

* Although WHO considers low body temperature as a danger sign for children less than two months as well, no question related to low body temperature was included in our questionnaire, because recognition of this sign was deemed too subjective.

ii) Danger signs for all children less than five

High frequencies were noted for *abnormally sleepy*, *noisy breathing*, and *fast breathing* (more than 50% of the respondents). 73.2% of the respondents reported fast breathing. A substantial number of respondents carry out actions that delay seeking health care from a trained health worker (almost 60% in noisy breathing). Chest indrawing was reported by 11 respondents and acted upon adequately by nine (see Table 4.4).

Table 4.4: Danger signs for children less than five years old, frequency reported by caretakers, and action undertaken (n = 56)

Danger sign	Frequency	Action		
		Trained health worker	delaying action	Not known
Convulsions	4 (7.14%)	4 (100%)	-	-
Not able to drink	9 (16.09%)	7 (77.77%)	2 (22.22%)	-
Abnormally sleepy	38 (67.85%)	23 (60.52%)	15 (39.47%)	-
Difficult to wake	2 (3.57%)	1 (50%)	-	1 (50%)
Noisy breathing*	32 (57.14%)	13 (40.62%)	19 (59.38%)	-
Fast breathing	41 (73.2%)	29 (70.73%)	12 (29.26%)	-
Chest indrawing	11 (19.64%)	9 (81.81%)	2 (18.18%)	-

* the term “noise” was used to designate stridor or wheezing

iii) Other symptoms

Cough was observed by 44 out of 56 respondents (78.57%), with 36 respondents (64.28%) seeking treatment by a trained health worker. *Runny nose* was observed by 45 out of 56 respondents (80.35%), with most respondents giving home treatments.

Symptoms and signs that prompted the caretakers to seek treatment

Of the 56 respondents 54 identified symptoms or signs that prompted them to seek treatment for their child. Although our question explicitly asked to mention one single sign that prompted treatment, the overall majority of the respondents gave a combination of symptoms or signs. Some answers, like asthma or cold, are conditions, rather than symptoms or signs. The frequency of each symptom or sign mentioned is reproduced in Table 4.5.

Table 4.5: Symptoms or reasons that prompted caretakers to seek treatment for their child (n=56)

Symptoms or Reason	Frequency	Percentage
Fever	31	55.4
Cough	28	50
Fast breathing	14	25
Runny nose	13	23.2
Inertia	7	12.5
Difficult breathing	5	8.9
Noisy breathing	5	8.9
Asthma	4	7.1
Convulsions	4	7.1
Phlegm	3	5.4
Vomiting	2	3.6
Obstacle in chest	1	1.8
Stomach ache	1	1.8
Pain in chest	1	1.8
Diarrhoea	1	1.8
Cold	1	1.8
Child not well	1	1.8
Pen kai wat (cold and fever)	1	1.8

Fast breathing observed by caretakers with prior exposure to pneumonia

Six out of thirty-eight (15.8%) respondents who reported the sign of fast breathing in their child, had been exposed to pneumonia in their family, before the episode of pneumonia under study. Most respondents who reported fast breathing had not been exposed to pneumonia before (84.2%).

Fast breathing mentioned as a sign that prompted seeking treatment and some other variables

Fourteen respondents indicated that the sign of fast breathing prompted them to seek treatment for their child. Below follow their answers with regard to delays incurred when seeking treatment from a trained health worker, problems faced when going to Chonburi hospital, and their education.

i) delays incurred when bringing the child to a health center or Chonburi hospital:

Of the 14 respondents who reported fast breathing as a sign that prompted them to seek treatment, 10 (more than 70%) stated that their child was seen by medical staff at Chonburi hospital with a delay of 3 – 4 days. For two respondents the delay was 5 –6 days or more. (See Table 4.6)

Table 4.6: Delays incurred when bringing the child to a trained health worker by respondents who stated that fast breathing prompted them to seek treatment

Delay Incurred In Days	Number And Percentage
1-2 days	2 (14.29 %)
3-4 days	10 (71.43 %)
5-6 days	1 (7.14 %)
> 6days	1 (7.14 %)
TOTAL:	14 (100 %)

ii) Problems reported to reach Chonburi hospital:

Ten out of fourteen respondents stated that there had been no transport problem while bringing the child to Chonburi hospital. Two respondents mentioned money problems. (See Appendix 4.16)

iii) education of caretakers:

The respondents who stated that fast breathing prompted them to seek treatment, represented all educational levels (ranging from no formal education to higher studies). Five respondents had completed four of primary school, four had completed six of primary school. (See Appendix 4.17)

Use of antibiotics before seeking treatment from a trained health worker

In nine cases out of fifty-three was the child given antibiotics before seeing a trained health worker. These cases were a response to the observation of more than one symptom. Table 4.7 gives an overview of the clusters of symptoms that prompted the administration of antibiotics before seeing a trained health worker.

Table 4.7: Clusters of symptoms that prompted administration of antibiotics by caretakers before seeing a trained health worker

Cluster of Symptoms	Number
Cough, phlegm	1
Cough, difficult breathing, phlegm	1
Fever, difficult breathing,	1
Cough, vomiting	1
Asthma *, diarrhoea	1
Fever, cold	1
Fever, convulsions	1
Fever, cough, convulsions	1
Fever, runny nose	1

* Asthma could be some respondents' terminology for noisy breathing

Persons instrumental in referring the child to a trained health worker

The parents are the main decision-makers (46 cases out of 56 or 82.14%), but in most cases are the mothers the only decision makers. They are by far the largest single group (37 out of 56 or 66.07%). The grandparents (and mainly the grandmothers) are the second group of decision-makers (8 cases out of 56 or 14.29%). (See Appendix 4.18)

4.3.5 Discussion

The reason why health volunteers are not routinely being consulted by the respondents (see Appendix 4.15) may be the high concentration of other health services in the district. These health services may provide treatment favoured by the population, which the health volunteers cannot give. Health volunteers would have a function in rather isolated areas with sparse or distant health facilities.

Our sample of children less than two months is too small to draw conclusions for that age group. At least half of the respondents said to have observed two signs that are considered danger signs for children less than two months, but the figures about corresponding action undertaken by the caretakers remain vague. (See Table 4.3)

Amongst danger signs for children over two months (Table 4.4), *abnormally sleepy, noisy breathing, and fast breathing*, score quite high (these symptoms are reported by more than 50% of the respondents). It is notable that 73.2% of the respondents reported fast breathing, which is much higher than the “p” proportion (50%) which we assumed when calculating the sample size for this survey (see section 4.2.2). However, a substantial number of respondents carry out actions that delay seeking health care from a trained health worker. In the case of reported noisy breathing this even nearly reaches 60%. This indicates that these respondents do not realize that these symptoms are danger signs requiring prompt referral to a trained health worker. Chest indrawing, a symptom that is a sign of severe pneumonia, was reported by 11 respondents and acted upon adequately by nine.

This observation may indicate a need for health education in order to enhance caretakers' appropriate response to these danger signs. The fact that most respondents reporting fast breathing had no prior exposure to pneumonia, and that respondents of all educational backgrounds reported fast breathing (Appendix 4.17), may be considered encouraging. However, health education would be one of the functions of the health volunteers, but their contacts with the respondents seem very limited (Appendices 4.14 and 4.15).

Most respondents who reported that fast breathing was amongst the symptoms that prompted them to seek treatment, reported a period of 3–4 days passing before the child was seen by a trained health worker in a health center or Chonburi hospital (see Table 4.6). Given the WHO recommendation that cases showing fast breathing be urgently referred to a hospital (WHO, 1994), this period may represent an unwarranted delay, especially since in general there is easy access to health centers and Chonburi hospital (71.1% of these respondents stated that they faced no problem when trying to reach the health center or the hospital, and only 7.14% of them said they had faced a transport problem). (See Appendices 4.16 and 4.17)

Cough, which is not considered a danger sign in the *WHO chart for the management of the child with cough or difficult breathing*, is reported by 41 out of 56 respondents (see section 4.3.4). Most of them seek treatment from a trained health worker,

which is appropriate in case of coughing over a prolonged period. However, our questionnaire did not contain a question about the duration of coughing observed by caretakers.

Nine out of 56 respondents (16.07%) reported that they or someone in their immediate environment had administered antibiotics to the child, prior to presenting it to a trained health worker (section 4.3.4). This finding may indicate a high consumption of antibiotics without a doctor's prescription.

The persons instrumental in the referral process (section 3.4.4) to the health center or Chonburi hospital are in the first place the parents (82.14%) and mainly the mother alone (66.07%), and in the second place the grandparents. There is no apparent role for health volunteers in this process.

4.3.6 Limitations

The results of the survey cannot be considered representative for Muang district, for many reasons. First, since all respondents have been selected from a hospital list, we lack any information on knowledge and practices of those caretakers who did not bring their children with pneumonia to Chonburi hospital.

Second, once the sample size was calculated and potential respondents identified, we faced the problem that 75 patients were registered without a domicile. This left them

de facto out of the sample and may have been a cause of bias. It also put practical limits on the possibility of meeting the requirements of the sample size.

Third, we did not reach full sample coverage. Only 56 valid questionnaires were returned. For the three above-mentioned reasons, the findings can only be considered as representative for the respondents themselves.

Further, some reservations may be warranted with regard to the choice of Muang district as a target area. This district has a particular, even privileged character in Chonburi province. Containing the administrative capital, not only of the district, but also of the province, it has a well developed infrastructure, with good roads allowing for a rather easy access to its many health facilities. Also, no people live in chilly, mountainous environments favourable to the development of ARI in children, as is the case in some other districts of the province. A similar survey, conducted in other districts of the province may well produce different results.

4.3.7 Lessons learned

Before conducting the interviews , we organized some introduction session for the interviewers. However, the date of the meeting had been set in function of some other activities in the district office, and this left us with limited time to give information on how to carry out the interviews. In addition to this, we had not written clear instructions for them, and this left the way open to personal interpretation of the interview

proceedings. It probably affected the uniformity of the way the interviews were carried out. So, some interviewers may have encouraged the respondents to give the respondents multiple answers, while others may not have done so. Lack of strong instructions may also have led to many respondents giving multiple answers on a question that explicitly requested only one answer. I also believe that the interviewers should have some practice with the questionnaire, before going to the interviewees. Their response to the questions and the sequence of the questions would be very valuable in terms of pre-empting unexpected problems with the questionnaire.

Training of the interviewers is an important part of the field survey and enough time should be reserved for this. It is important to make sure that the interviewers understand the procedures very well, and act in a uniform way. This also relates to the issue of introducing the questionnaire and its purposes to the respondents.

It is not possible to check the accuracy of the answers the respondents give. One cannot tell if respondents who state that they have observed a symptom really did observe that symptom. It is not sure if researcher and respondent really talk about the same subject. The initial questionnaire tried to overcome this limitation by asking probing questions, such as a request to describe the symptoms reported. However, when the questionnaire was tested it seemed difficult for the respondents to actually describe what they had seen, and therefore these probing questions were dropped in the final version of the questionnaire. For a real insight in respondents' ability to recognize the symptoms, one needs to apply techniques used in Focused Ethnographic Studies, e.g. the use of video film

with patients, or interviews of patients in a clinic. This does not mean that the information revealed by the questionnaire is useless. We still have an indication of what people do when they observe certain symptoms.

4.4 Conclusion

A structured questionnaire does not offer the flexibility needed to acquire a full understanding of people's reasons for and motives behind specific steps in their health care seeking behaviour. In-depth interviews, or group discussions, possibly as part of a participatory way of gaining data, are more appropriate. Therefore, I suggest that the questionnaire can help in mapping people's knowledge and practices with regard to ARI, and identify specific problem areas. Follow-up of the questionnaire survey can be done with in-depth interviews to elicit details about people's reasons and motivations when engaging in the health care seeking process. Issues like delays when seeking health care from trained health care workers, or the role of specific people in the decision making process can be explored that way. Thus, specific groups of respondents, who may be of a specific interest to health planners, can be selected for the interviews (e.g. respondents reporting fast breathing while opting for what is considered delaying behaviour, or respondents using antibiotics as a self-medication). It may be useful to check the respondents' knowledge of the symptoms of ARI with the use of videos, as in Focused Ethnographic Studies

I can use the questionnaire in my proposal, as part of the pre-test – post-test of participants to the PAR process. In the proposal the questionnaire has been adapted slightly, because the interview is not related to a specific episode of pneumonia, as in the data collection exercise.

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