ACUTE RESPIRATIORY INFECTIONS IN UNDER FIVES

A STUDY OF THE DETERMINANTS OF CARE SEEKING AND HOME MANAGEMENT PRACTICE IN AKATSI DISTRICT

A DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT OF THE MASTER IN PUBLIC HEALTH DEGREE

PRESENTED TO THE SCHOOL OF PUBLIC HEALTH, UNIVERSITY OF GHANA, LEGON.

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DATE: SEPTEMBER 2000.

DECLARATION

I declare that all the work in this study has been the result of my own research, except where specific references have been made; and that it has not been submitted towards any other degree, nor is it being submitted concurrently in candidature for any other degree.

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Abbreviations

ARI - ACUTE RESPIRATORY INFECTIONS

CHD - CHILD HEALTH DIVISION

DHMT - DISTRICT HEALTH MANAGEMENT TEAM

DHS - DEMOGRAPHIC AND HEALTH SURVEY

EPI - EXPANDED PROGRAMME ON IMMUNISATION

FES FOCUSED ETHNOGRAPHIC STUDY

FGD FOCUS GROUP DISCUSSSION

GHSB GHANA HEALTH SEEKING BEHAVIOUR

IMCI INTEGRATED MANAGEMENT OF CHILDHOOD ILLNESSES

JSS JUNIOR SECONDARY SCHOOL

TBA - TRADITIONAL BIRTH ATTENDANT

UNICEF - UNITED NATIONS CHILDRENS FUND

WHO - WORLD HEALTH ORGANISATION

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Dedicated to the 'Niis' in my life – Nii Nai, Nii Anyetei and Nii Ako

Abstract

Acute Respiratory Infections (ARIs) include infections in any part of the respiratory system lasting less than 3 days. They are a major cause of childhood deaths worldwide. Though the vast majority of ARIs are harmless, there are a few severe ones, which usually cause death within a short time and must therefore be recognised early. Available evidence shows that in Akatsi District about half of ARIs are managed at home. Since this care may be inappropriate there is the need for further investigation into what is actually being done and what determines this action.

This work is a descriptive study, conducted in July 20000, to assess the determinants of care seeking and home management practices of ARIs in under fives in Akatsi District. Perceptions of importance, cause, prevention and treatment of ARIs, knowledge of severity, home management practices, the time and sequence of care seeking and socioeconomic factors influencing these were studied, in order to make recommendations for development of appropriate health intervention programmes.

Qualitative and quantitative methods were used through FGDs with community members and administration of semi-structured questionnaire to 210 caretakers selected through cluster sampling.

The study showed that ARIs are perceived to be important for such reasons as cost of cure and inconvenience to caretaker and child and not because of their associated mortality. Knowlegde of modes of prevention was high. Severity was related to duration of episode and not signs and symptoms, implying that a severe ARI could be identified rather late. Food is not completely withheld from a child with an ARI, however certain foods may be withheld on grounds that they worsen the condition. Though most people would attempt to seek some form of care quite early, self-medication with herbal preparations and drugs from chemical shops is common. There is also a sequential resort, which can lead to delays in receiving appropriate care. The main constraint to care seeking is financial.

The study therefore recommends Health Education by health staff on recognition of signs of severe ARIs for early care seeking and a reinforcement of the positive practices identified. The District Health Administration should also collaborate with the alternative health providers in the communities and explore alternative methods of health care financing.

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CHAPTER ONE

1.1 INTRODUCTION

Every year some 12 million children in developing countries die before they reach their first birthday. Seven out of ten of these deaths are due to acute respiratory infections (ARI), diarrhoea, measles, malaria or malnutrition. ARI's account for 20 % of these deaths.[1]

ARI include infections in any part of the respiratory system of less than 3 days duration except acute ear infection, lasting less than 14 days[2] There are two major groups: acute **upper** respiratory infections include colds, ear infections and sore throats and acute **lower** respiratory infections which include infections of the epiglottis, larynx, trachea, bronchi, bronchioles and lungs (pneumonia). ARIs and related conditions usually manifest as pneumonia, coughs and colds, wheezing, ear infections and sore throat.

In Ghana and other developing countries ARI pose the greatest threat to child survival.

Many children aged 0 – 5 years develop 4 – 6 ARI episodes per year[2]. Though respiratory infections are common and constitute a considerable burden on the health services of developing countries, most ARI mortality is due to acute lower respiratory infections and pneumonia which is less common has the highest significance through its associated high case fatality rate. Pneumonia, by accounting for about a quarter of all deaths in children under 5, is the commonest cause of death or one of the two most common causes (with diarrhoea). The emphasis of ARI management has therefore been on case detection and management of pneumonia. Since the duration of illness before death is short (about $3^1/_2$ days) in pneumonia, its early recognition in the home, prompt attention and appropriate treatment are all necessary to significantly reduce

mortality[2] According to UNICEF, timely and appropriate care seeking could reduce ARI deaths by over 20 %[3] In addition to the threat to child survival, ARIs by virtue of their frequency of occurrence place an economic burden on developing countries – inappropriate drugs are often used and helpful ones are overused, being given to cases, which do not need them. Thus families and government without benefit spend large amounts of money.

WHO has defined Rational Case Management to include early recognition of pneumonia with focus on respiratory rate, antibiotic treatment at home, referral to hospital for more severe cases and supportive home care for the vast majority of cases, which do not require antibiotics[4]. In Ghana, the policy thrust of government is to reduce mortality due to the disease by intensive health education, to create awareness of the disease and to improve early recognition, self referral and proper management at the home and health facility and specifically increase the proportion of mothers who know signs and symptoms of ARI and self referral from 24% to 60%[5] Studies by the Child Health Division of the WHO on specific family practices aimed at improving care seeking for acute illness in infants and young children showed that even though there is limited scientific documentation of the extent to which initial delay in care seeking affect mortality, there is considerable evidence that families do not always make the best decision with respect to utilization of services. More knowledge is also required on initial decisions concerning when to seek help[6].

1.2 STATEMENT OF THE PROBLEM

According to the DHS (1998) use of Health facility for AR1 symptoms is low in Ghana – 1 in 4 are taken to health facility. This is particularly so in the Volta Region where a child is said to be least likely to be sent to a health facility[7].

A baseline study conducted in Akatsi in 1998 showed that 39.6% of children had had respiratory illness 2 weeks prior to the study. Of the 56% who said they had sought treatment 37.7 % went to a chemical shop, 28.3% government health facility 20.8% private facility, 7.5% relatives or friends and 5.7% other source not specified[8].

Thus in Akatsi of those who seek treatment for ARI, about half do not use orthodox health facilities* This implies that most people with children with ARI are managing at home or at unorthodox places. Available evidence suggests that this care is largely inappropriate and may be one reason why a majority of deaths in rural areas occur without the deceased having ever consulted a formal provider. In addition, household perceptions of aetiology can compound early diagnosis and effective treatment in the presence of formal services. Numerous factors including socio-economic factors in the community, accessibility of health services and the health service itself account for this.

Even though the vast majority of ARIs are harmless, appropriate treatment is only possible if caretakers recognize the signs of the disease and seek treatment early. Seeking treatment early is considered the most important action a mother can take in the face of a pneumonia episode[9]. If

* Orthodox facility means a modern health facility (hospital, clinic or health center), with a trained formal provider. It excludes drug/chemical shops, traditional practitioner, drug peddler or other unspecified source.

parents do not recognize signs of a pneumonia or do not understand how important these signs are or if they do not seek treatment from a trained health worker, then the child is at great risk as there is no life saving home treatment for pneumonia. Sufficient knowledge on the determinants of care seeking and an understanding of the prevailing perceptions of caretakers in relation to causation and treatment is needed if specific interventions aimed at these are to be designed.

1.3 STUDY LOCATION [10]

Akatsi District is located on the southern part of the Volta Region. The district is bounded on the south by Keta District, on the north by Ho District, on the west by South Tongu and east by Ketu District. The district has a population of 87 793, according to provisional results from the 2000 population and housing census, with five sub- districts. The people are spread out among at least 800 villages and hamlets, many of which have population of less than fifty people.

The climate is characterized by two rainfall seasons. The major one lasts from April to July and the minor one from September to November. December to March is a dry period.

The economy of the district revolves mainly around subsistence agriculture with main staples being cassava and maize

The people are predominantly Ewe speakers. The principal religions are Christianity and Traditional. Many shrines can be found in most communities.

The district is mainly rural with infrastructure gradually developing. Electricity has been extended to major communities. Most communities do not have source of potable water and streams and dams remain their major sources of water. The road network is poor and apart from

the two trunk roads (Ho – Akatsi and Accra – Aflao) that are motorable throughout the year, there are a number of feeder roads, which are rendered unmotorable during the rainy season.

The district has 8 Government health institutions with 3 private clinics. There is no hospital. The health facilities vary in their numbers, quality of staff as well as with regards to available infrastructure, equipment and supplies. Many of the communities are far from the nearest health centers and people find it difficult to make the journey on foot. In addition outreach services and supervision are hampered due to lack of transportation.

There is no Pharmacy in the District but there are quite a number of chemical shops.

Malaria ranks first on the list of diseases followed by respiratory infections, diarrhoea, and anemia. In 1999 pneumonia was included in the ten top cases seen in the district forming about 1% of all cases seen. In addition to these are other communicable diseases such as Guinea worm, Schistosomiases and Yaws.

CHAPTER TWO

2.1 LITERATURE REVIEW

Operational studies [9] indicate that the children with ARI who die are

(1) Those that remain in the community without having the opportunity to be reached by the health services.

(2) Those with pneumonia who do not receive adequate treatment and become severely ill

(3) Children with severe cases who are reached rather late by the service.

Determining factors enumerated for the above include:

(1) Inaccessibility of the services

(2) Socio economic problems

(3) Cultural factors which limit the frequency of consultation and acceptance of formal health service

(4) Inappropriate management of ARI cases by the general health service.

2.1.1 Socio Demographic Factors

Most studies have identified age as a good predictor of utilization. Younger generations are more likely to accept innovations and older generations are conservative and would prefer traditional solutions[11],[12]. A study conducted by Amofa in the Ashanti region showed that significant delay in reporting to hospital was observed when decisions to seek help were taken by grandmothers as caretakers[13]. According to the same study in seventy- five percent of cases the decision to seek help outside the home was made by the father, even though most

caretakers identified were women. Fathers therefore play an important role in making decisions to seek care, even though in most cases this may be due to financial difficulties.

2.1.2 Education

Since most caretakers are mothers, maternal education is even more significant. Indeed maternal education has been shown to have a strong impact on infant and child mortality. On average, each one-year increment in mothers' education corresponds with a 7 - 9% decline in under 5's mortality and exercises a much stronger influence in early and later childhood than infancy[14]. According to the DHS Ghana, (1998) children of mothers with little or no education have a higher occurrence of ARI symptoms than their better educated counterparts[7]. Levine et al in studying effects of schooling and maternal behavior on child survival found that in Mexico educated mothers are more likely to take sick children for treatment within 3 days of onset of symptoms[15]

Studies in rural Ghana have also shown that adults with primary schooling were more likely than those with no schooling to attribute natural cause to disease[16] This is significant because as will be explained later perception of cause of illness is an established determinant of where to seek help.

2.1.3 Household Income

Low household income has been found to be a barrier to the utilization of Primary medical services. However this may not simply be an income effect but also that of other correlates of income such as education and attitudes, etc[17,18].

2.1.4 Culture/beliefs

When a disease erupts both the symptoms of the sickness as well as its course within the social surroundings are discussed and labeled. It is these cultural specific labels, which determine the choice of health care resource considered appropriate. There is usually a hierarchy of classification and if there is no associated unusual development of illness the disease is likely to be labeled as natural. A quick or unusual development of an illness usually implies the influence of black magic (spiritual factors) or witchcraft[19,20]

Accordingly ordinary colds and most ARI are usually classified as not serious –

" They come and go with the weather"[19] Hence little or no medication is used.

However, as cough becomes chesty and persistent, mothers may prescribe cough medicine or even antibiotics (particularly if there is blood). The disease is then labeled as a chest disease and treated according – usually with warm fomentation of the chest or rubbing of menthol[13, 19,21,22]. Respiratory symptoms in newborns are thought to be caused by mishandling at the time of birth in parts of Egypt. Thus care seeking may be considered unnecessary as it is thought that nothing can be done[23]

2.1.5 Knowledge and interpretation of severity signs

According to reports on focused ethnographic studies conducted in Ile – Ife, Nigeria[24], 'fast breathing' was not generally recognised by mothers and was rarely noted when they watched a video tape developed to assess the recognition of ARI signs and symptoms. Indeed most of the mothers regarded many of the signs and symptoms of fever, cough and even convulsions as part of the child's development. Anum et al[22] found that severity signs like chest indrawing and rapid breathing may be recognized but their significance was not realised in the Dangme West district of the Greater Accra Region. In similar studies in Egypt[23] however mothers made a clear distinction between mild respiratory infections and serious illness (pneumonia). They also recognised symptoms of rapid and/or difficult breathing but did not believe them to be serious or reasons to seek care. Hence most communities try remedies at home as shown in Pakistan where mothers tried to counteract the "coldness" of the chest with home remedies without knowing the basic physiologic function of the airways[25] These practices have often led to delays in seeking help.

2.1.6 Availability/Accessibility of service

Studies in Bolivia[26] showed that dissatisfaction with the available health service was particularly due to cultural and language barriers. Financial constraints were also common and families had to sell animals or goods to obtain cash before seeking care, leading to delay.

Constraints to care seeking from the orthodox health services have been found to be mainly financial, that is high cost of treatment and in ability to pay[13]. People would delay their use of government health service until they were sure that illness was not self limiting or curable with simple drugs. This is particularly so with most ARI.

CHAPTER THREE

3.1 GENERAL OBJECTIVE

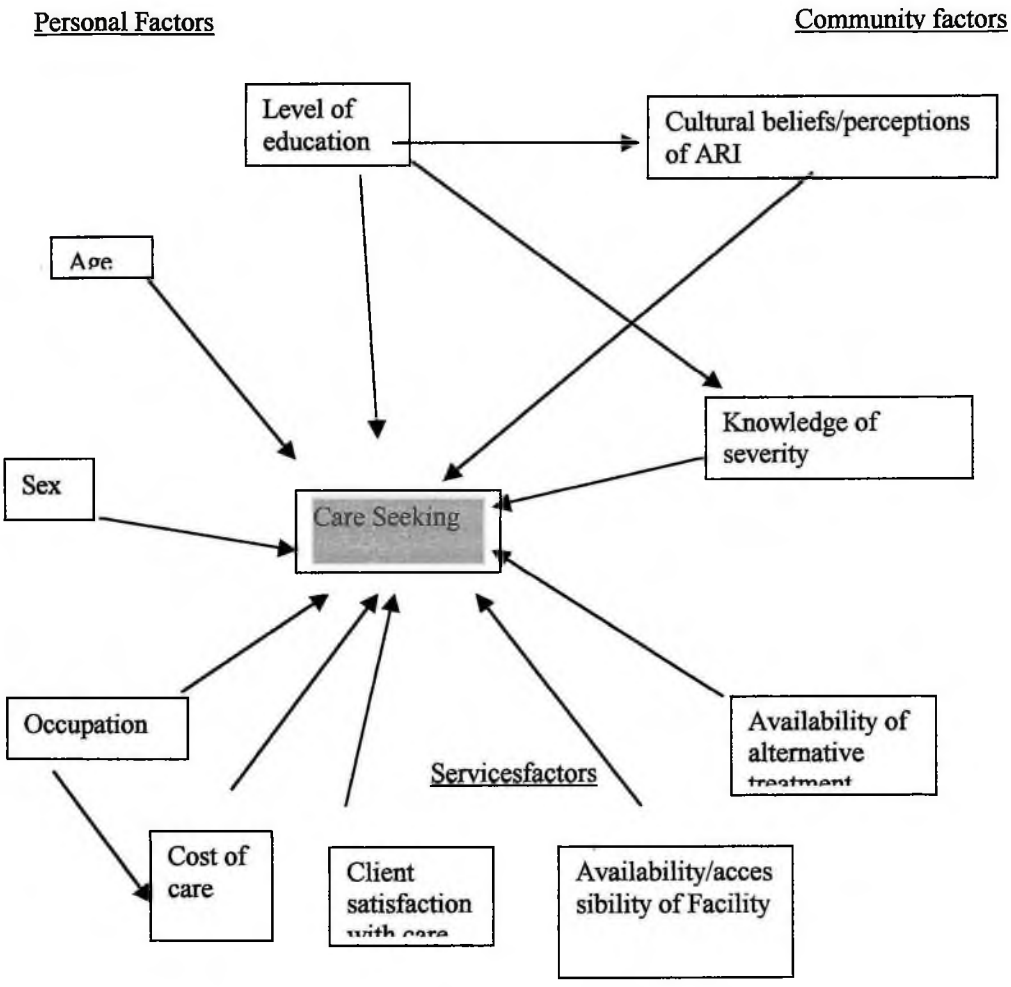
To assess the determinants of care seeking and home management practices of ARIs in under fives in Akatsi

3.1.1 SPECIFIC OBJECTIVES

1. To describe perceptions of caretakers of ARIs.
2. To determine whether caretakers know and can differentiate between mild ARIs and severe ones such as pneumonia.
3. To determine whether knowledge is a determinant of care seeking.
4. To describe home management practices.
5. To identify when people seek care outside the home – the time and sequence of care seeking.
6. To determine any socioeconomic and cultural factors which determine the above.
7. To make recommendations to the DHMT and other agencies concerned with child survival programmes in the district to facilitate the development of appropriate health intervention programmes.

3.2 CONCEPTUAL FRAMEWORK AND VARIABLES

FIG. 1 CONCEPTUAL FRAMEWORK



As shown in Figure 1, the decision to seek care may be influenced by two main factors- sociocultural and service factors. The former includes personal factors such as age, sex and educational level and community factors such as cultural beliefs. Service factors include cost of

care, availability of the service among others. These determinants are interrelated as shown in figure 1. For example, a caretakers educational level may influence his/ her cultural beliefs as well as knowledge of severity signs of acute respiratory infections and eventually determine care seeking behaviour directly or indirectly.

3.2.1 VARIABLES

DEPENDENT: care seeking

INDEPENDENT:

(1) SOCIOCULTURAL

Personal - Age, sex, education, religion, occupation

Community determined - community knowledge and perceptions of severity signs, cultural beliefs, preference for other treatment, availability of alternative treatment.

(2) SERVICE RELATED

Accessibility of services – "cost of care" and geographic location. Client satisfaction with care (attitude of providers).

3.2.2 DEFINITION OF VARIABLES

TABLE 1

VARIABLES	CHARACTERISTICS	OPERATIONAL DEFINITION
Dependent Variable	Care seeking	Any attempt to seek some form of treatment for an ARI episode
Demographic	Age Sex	Age at last birthday Male or female
Socio-cultural	Education (formal) Religion Community knowledge of severity signs Cultural beliefs	Highest level attained Form of worship. Recognition of rapid and difficult breathing, nasal flaring, and other severity signs. Any beliefs or taboos associated with causation and management of the disease.
Economic	Occupation	Employment status.
Service factors	Availability and accessibility of orthodox health facility	Living within 5km from health facility

CHAPTER FOUR

4.1 METHODS

4.1.1 STUDY DESIGN

The study is a cross sectional study, employing the use of both qualitative and quantitative methods to describe what makes caretakers in Akatsi District seek care and what they do at home during an episode of ARI in their children under five years. It was conducted in July 2000 during the field residency period.

4.1.2 STUDY POPULATION.

The study population was made up of:

- Female and male caretakers of children under 5 years in the district
- Opinion leaders.

4.1.3 DATA COLLECTION TECHNIQUE AND TOOLS

(1) In the quantitative study interviews were conducted using semi-structured questionnaires for 210 caretakers of under fives. Households were selected from clusters drawn using the WHO EPI 30-cluster method, explained in the next section. In cases where more than one caretaker of an under five was identified in a household, one of them was selected through balloting. If no caretaker was

identified in a selected household the next household with an identified caretaker of an under five was conveniently chosen.

(2) The qualitative study involved Focus group discussions with currently reproducing (younger) female caretakers, no longer reproducing (elderly) female caretakers as well as male caretakers and opinion leaders. In all 3 such discussions were held. Each group was made up of 8 members selected by a community contact person. One facilitator and a note-taker conducted the focus group discussions in the Ewe language and recorded on audiotapes. They were later translated and transcribed into English.

4.1.4 SAMPLE SIZE DETERMINATION AND SAMPLING STRATEGY

Sample size determination was based on the formula:

$$n = z^2 (pq) \div d^2$$

Where n = sample size

p = estimated prevalence/coverage rate

q = 1 – p

d = precision desired

p was defined by the prevalence of ARI from the baseline survey of 40 %

The value d was dependent on the precision or margin of error desired. In this case d = 0.1 %

The statistical certainty chosen was 95 %.

$\therefore n = (1.96 \times 1.96)(0.4 \times 0.6) \div 0.1 \times 0.1$

$n = (3.84)(0.24) \div 0.01$

$= 92$

Since random selection of identified individuals is difficult and Akatsi district already has clusters listed, the WHO 30 cluster survey, which is usually estimated to be two times the n calculated and requires a sample size of at least 210 was used for the sake of convenience. Cumulative populations of the district population data were calculated. 30 clusters were drawn using a random number and a sampling interval (total population of the district divided by 30).

4.1.5 DATA HANDLING, PROCESSING AND ANALYSIS

A file was opened for data collected. The principal investigator examined the daily batch of questionnaire at the end of each day, for completeness and consistency. The batching of questionnaires was the responsibility of the first research assistant.

A daily analysis of data was done after which the data was categorised by variables. At the end of the study, a focused synthesis was carried out and data entry made into a computer using epi info version 6 software. The data was summarised using descriptive statistics of simple percentages, tables and frequencies for any relationships between the independent and dependent variables. Data collected from the Focus Group Discussions was recorded, translated, transcribed and analysed manually by the team

To ensure quality control, the principal investigator and supervisor made unannounced follow-up household checks.

A pre-testing of all questions on a sample audience was carried out to check inconsistencies. The Focus Group Discussion results were used to complement the results of the questionnaire. All members of the team were given three days of training together to hone their skills as well as build cohesiveness.

4.1.6 Ethical Considerations

No equipment like tape recorders was used without the consent and knowledge of respondents. Respondents were assured that maximum confidentiality would be kept throughout the study and after.

4.1.7 Limitations

1. Since the principal investigator did not understand the local dialect there was the need to rely on an interpreter for the Focus Group Discussions.
2. To further understand the topic under study, other health care providers in the district such as chemical shop operators and herbalists should have been included in the study. This could not be done due to time and financial constraints.

CHAPTER FIVE

5.1 FINDINGS

5.1.1 General Characteristics

A total of 210 caretakers were interviewed with an age range of 15 to 75 years. Their mean age was 34.6 with a standard deviation of 11.6. They were mostly female (84%) with the majority 65% having received little (primary) or no formal education. 41% were farmers, 39.5%traders, 6.7% unemployed, 4.2% artisans, 1.9% with clerical jobs and 1% teachers.55% were Christians, 30.5% Traditional worshippers, 5.7% Moslems and 8.6% belonging to no religion.

5.1.2 Perceived importance of ARI

In order to obtain information on how important ARIs were perceived by the community, they were asked to spontaneously mention the most common diseases in the community affecting children. They were then later prompted. The following results were obtained and the first six ranked accordingly. (Table2)

TABLE 2 COMMON DISEASES MENTIONED.

Spontaneous	%	Prompted	%
1. Malaria	62.5	1. Malaria	95
2. Cough	50	2. Cough	89
3. Measles	33	3. Worms	78
4. Diarrhoea	25	4. Diarrhoea	78
5. Asthma	23	5. Measles	72
6. Worms	23	6. Asthma	68

Malaria ranked first in the spontaneous responses of the most common diseases affecting children closely followed by cough. Other ARI related conditions like asthma and measles also

featured quite prominently. Other, perceived as common diseases mentioned, included convulsion (21%) Rheumatic Pains (10%), Malnutrition (7%), eye and skin infections (5%). Fast breathing was spontaneously mentioned by 2.5 % of respondents.

When asked whether they perceived ARI as a problem over 90% said they perceive ARI as a problem and gave the following reasons:

"Affects mainly children" (31 %)

"Causes sleeplessness" (34 %)

"Costly to cure" (17 %)

These responses were also confirmed during the Focus Group Discussions in the following statements made by discussants:

"It is a problem because it means we have to send the children to hospital and there is no work in the town."

"It is a problem because it is in the air so it affects children easily"

"These diseases are problems to us because when we go to hospital we don't see any improvement; and there is no money to send the children to hospital"

Respondents were also asked to mention any ARIs they knew of and their local names. The following were the ones mentioned (table 3):

Table 3. ARIs AND RELATED DISEASE MENTIONED

ARI	Local name	freq.
Cough	*ekpe*	51%
Asthma	*gborxi*	39%
Measles	*gbayi*	23%
Whooping Cough	*Korkordjae*	9%
Catarrh	*tagba/taave*	2%

Others mentioned (these are not ARI) were Malaria (11%), worms (8%), rheumatic pains (2%), tuberculosis (3%). Caretakers did not mention pneumonia during the quantitative study. It was only mentioned during the FGD as *"Fafe na le dzitodzito"*, literally "cold lung."

5.1.3 Knowledge/ perceptions of cause of ARI

When asked what causes ARIs the following were the main responses obtained:

"Exposure to cold" (56% of respondents). By this respondents meant, exposing the child's body to the cold weather by not giving adequate clothing, or exposure to early morning dew.

"Eating dirty food" (32%). This was a reference to food considered as contaminated by dirt.

"Too much air pollution" (29%), referring to smoke from burning firewood and as mentioned during the FGDs, dust from quarrying activities in the District.

"Witchcraft" was mentioned by 21, that is 10% of respondents and 12% said they did not know what causes ARIs.

Others mentioned were malnutrition 9%, congenital 5%, exposure to heat 4%, worm infestation 4%, falling from height/mishandling 2% and overcrowding 2%.

5.1.4 Knowledge / perceptions of prevention

When asked how ARIs could be prevented the following were the main responses given and these were in accordance with the perceptions of cause mentioned above:

- Immunization 70 %
- Adequate clothing 32 %
- Protect food from house fly 21 %

Other perceptions on prevention were reducing air pollution and eating a well balanced diet. 12 respondents (6%) said they did not know how ARIs could be prevented.

5.1.5 Knowledge of which ARI can be transferred from one to another.

83 % of respondents were aware that ARIs could be transmitted from one person to another and the following were the types mentioned:

TABLE 4 ARI TYPES MENTIONED.

ARI	FREQ (%)
Cough	38 %
Whooping cough	18 %
Measles	17 %
Asthma	30 %

Others mentioned were catarrh (5%), tuberculosis (6%)

Thus as many as 53 (30%) of respondents were of the view that asthma, which is not a transferable ARI, could be transmitted from one person to another.

5.1.6 Symptoms/signs associated with ARI

Unprompted, respondents mentioned the following signs and symptoms as indicative of all ARIs:

Table 5 SIGN/SYMPTOM	FREQ (%)
• Refusal to feed	35 %
• Cough	30%
• Difficulty in breathing	26%
• Sleeplessness	23%
• Crying	23%
• Rapid breathing	14 %
• Noisy breathing	15 %
• Runny nose	11 %
• Chest pain	9 %
• Fever	8 %

Other symptoms mentioned included vomiting 3%, red eyes 3%, dullness sore mouth 5%, and convulsion 5%. Even though cough had previously been mentioned by about 50 % of respondents as an ARI it was only mentioned by 30% in this instance as a sign/ symptom.

5.1.7 Knowledge of severity

87% of caretakers were aware that ARIs could be mild or severe. 8.6% did not know and the rest said "no" to the question. Those who said ARIs could be mild or severe were further asked what symptoms they would associate with the two groups. The responses obtained are listed below (these were multiple responses):

Symptoms of mild ARI mentioned:

- **Short duration 75 %**
- **Recovers after first aid 19 %**
- **Continues to feed 2 %**
- **Breathes freely 1 %**

These were mainly related to duration and recovery after first aid and not with signs or symptoms. This was reflected in the poor knowledge of the expected signs and symptoms associated with severe ARI. (Table 6)

Table 6. Signs/ symptoms associated with severe ARI

SIGN	No.	%
Difficulty in breathing	**73**	**40**
Rapid breathing	**41**	**22**
Inability to suck/feed	**76**	**42**
High temperature	**61**	**33**
Convulsion	**19**	**10**
Change in sensorium	**28**	**15**
Excessive restlessness	**71**	**39**

Others mentioned **(5%)** included excessive crying, bleeding and persistence of symptoms despite first aid.

During the focus group discussions members showed a fair knowledge of signs of a severe ARI. The following were the main ones mentioned:

- Weak
- Cannot eat/ vomiting
- Unconscious
- Difficulty in breathing
- No improvement after going to hospital (male group)

5.1.8 Treatment options in the community

Discussants were also asked about how ARIs are treated in the community. The responses given are summarised in figure 2 on the next page. The suggestions do not take into account the age of the child.

FIG 2 Treatment options

Caretaker	Young female				Elderly female			Male	
SEVERITY	MILD		SEVERE		MILD	SEVERE		MILD	SEVERE
Conditions	Febrile	Not Febrile	Money available	No money available	--	Money available	No money available	--	--
Stage 1	Cold water bath	• Shea butter rub • Honey with M&B • Good clothing	Drug store for first aid	Herbs	• Herbal bath/drink • Consult elderly person	• Hospital	Bath seven times with herbs.	Herbs as Oral/nasal drops	Consult soothsayer
Stage 2			If no improvement -hospital						

From figure 2, it is clear that older female caretakers and men are more likely to use herbs than younger female caretakers. This finding is reflected in the responses quoted below from the focus group discussions held with the males:

"We normally use herbs in the house for a child with cough and malaria"

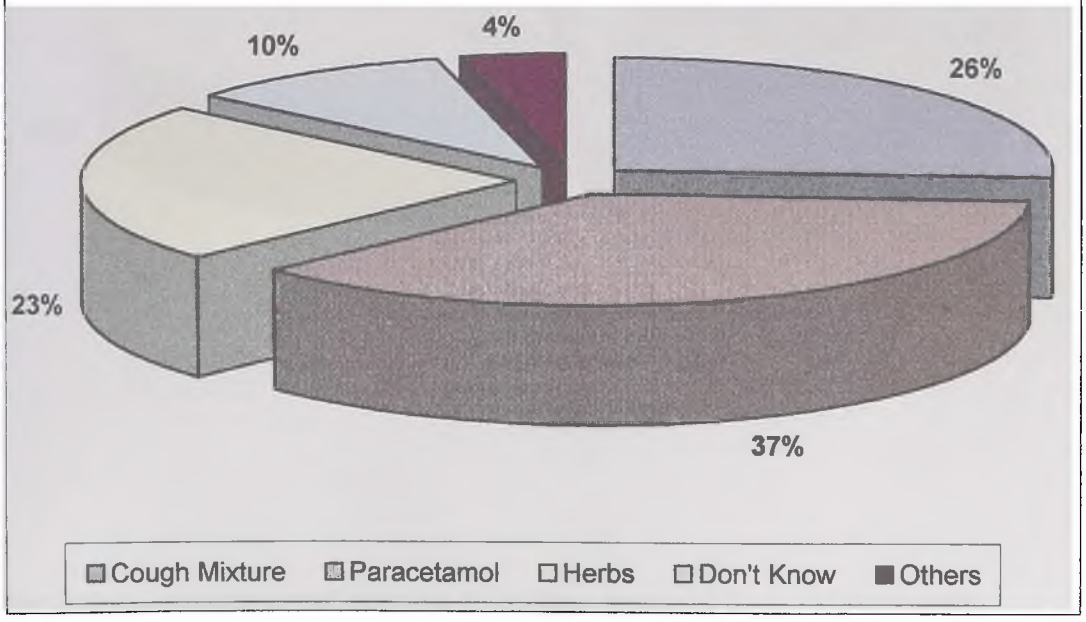
"When the breathing 'cease' we put some in the nose" (reference to nasal instillation of extracts from ground milk bush leaves for clearing nasal congestion)

"Go to the soothsayer and 'ask of' the disease." (Suggested treatment of severe ARI).

5.1.9 Perceived best treatment in the community for ARI

Caretakers were also asked what in their opinion was the best treatment for ARIs in the community. The results are presented in figure 3. below.

Figure 3.PERCEIVED BEST TREATMENT FOR ARI

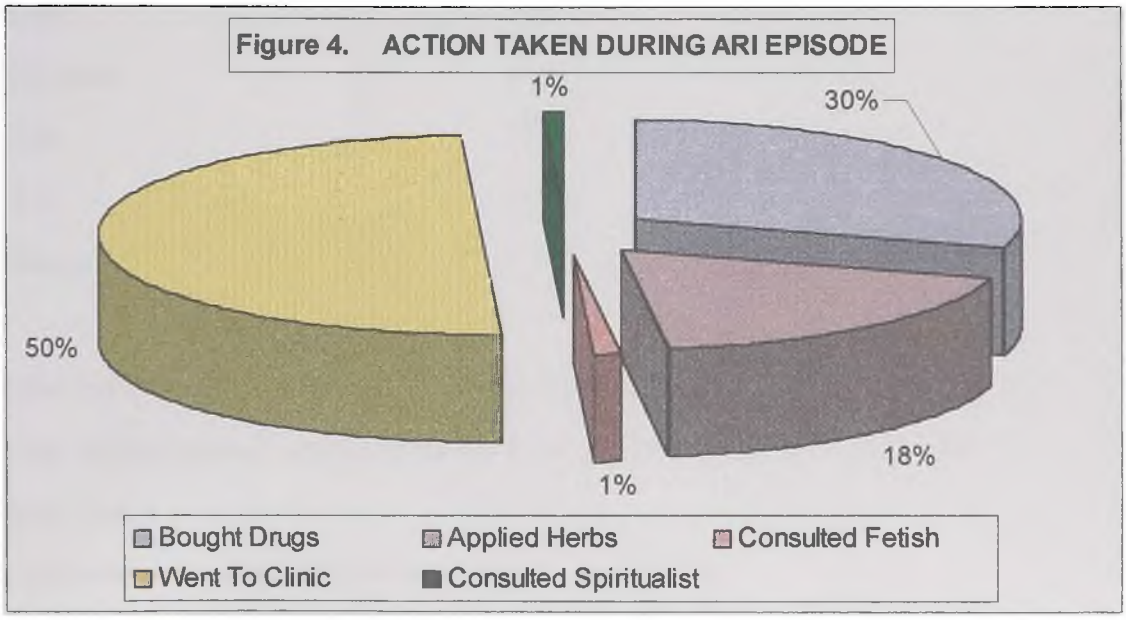


From figure 3, Paracetamol ranked highest (37 %), followed by cough mixture and herbs, 26% and 23% respectively.21 respondents (10%) said they did not know. 4% of respondents mentioned other things such as honey with lemon, chloroquin and septrin.

5.1.10 PRACTICE

5.1.10.1 Actions taken during ARI episode

About half, **96 (46 %)** of respondents said their children had had an ARI 6 weeks prior to survey. When asked what action they took the following were the responses given (figure 2.):



Half of these respondents said they went to the clinic, about a third went to the drugstore and bought drugs, 18, (18%) applied herbs and only 1% respectively consulted the

spiritualist or the fetish. Most caretakers (65%) took this action within 3 days of observing signs and symptoms, 29% after 3 days and 7 % after a week. The person responsible for taking the decision to seek care was the mother in 47 % of cases, the father in 42% and an elderly relative in the remaining cases (11%).

5.1.10.2 Feeding practices

During an ARI episode food is not completely withheld from children, however certain foods are not recommended. (Table7).

Table 7. Foods that should not be given during an ARI episode:

Food	freq.
Oily foods	40 %
Okro	37 %
Rice	20 %
Cassava	17 %

Other foods mentioned were gari, maize, groundnuts, sugar, pork, cold food, palm nut soup. Similar responses were given during the Focus Group Discussions. The reasons given were:

"Blocks the chest causing difficulty in breathing" – starchy foods

"Causes vomiting" – oily foods

"Worsens the cough" – rice, okro, gari

Recommended foods for a child with ARI (from FGD)

When asked what foods should be given to a child with an ARI all groups were unanimous in their suggestions. These were:

Soft or light food such as *koko* or *kafa*

Hot light soup with a lot of pepper *"to enter the stomach and heal the sore in the stomach"*

Even though there were no taboos associated with ARIs, some caretakers would not recommend bathing the child particularly with cold water as this could aggravate the situation.

5.1.11 HEALTH SERVICE FACTORS AFFECTING CARE SEEKING

5.1.11.1 Availability/Accessibility of facility

Over 90% of respondents said there was a health facility in their community. Health facilities mentioned included all facilities, both government and private, in the District as well as facilities in neighbouring districts. The latter were Comboni Hospital at Sogakope in the South Tongu District and the Catholic Hospitals at Abor and Dzodze in the Keta and Ketu Districts respectively. The distances given from their homes to these facilities ranged between 1 and 9 kilometres.

About half of the respondents said getting transportation to the facility was easy, whilst the remainder said it was either difficult or with some difficulty.

The road network to the health facility was described as motorable throughout the year by 55% of respondents, motorable for some part of the year by 18% and not motorable throughout the year by 27% of respondents.

5.1.11.2 Time spent at health facility

This ranged from one to five hours with a mean duration of 3.2 hours.

5.1.11.3 Constraints to care seeking

In spite of the responses mentioned above, (availability/ accessibility, time spent at facility) when asked what was the main constraint to care seeking, over 90% mentioned financial difficulties. This implied either lack of funds or high cost of treatment. As one elderly female caretaker put it, "the only problem for not going to the hospital is money."

Other constraints mentioned were transportation (14%) – this meant actually getting a vehicle as most vehicles operated only on market days; these market days fell on every fifth day. Long waiting time was mentioned as a constraint by only 6 (3%) respondents, even though the mean waiting time at the facility was quite long (about 3 hours), Attitude of health staff was mentioned by 4 respondents only and 7 respondents said they had no constraint to care seeking.

5.1.11.4 Perceived short comings of health providers

Respondents were also asked what in their view were some of the shortcomings of health providers. The following were the responses obtained:

"No sense of urgency"	53 %
"Shouting at patients"	34 %
"Rudeness/lack of respect"	23 %

Others mentioned (14%) were lateness and illegal charges. About 18%were satisfied with health providers

5.1.11.5 Suggestions for improvement of services

The main suggestions mentioned for improvement of services were: provision of drugs by 147 (70%) of respondents, availability of health personnel by 92 (44%) of respondents and a reduction in waiting time by 44 (21%) respondents.

5.1.11.6 Reasons for care seeking at specified places

During the FGDs discussants were asked reasons why people sought care at specified places. The table below summarises the responses given:

TABLE 8. Reasons for care seeking at specified places.

Health provider	Reasons given
Herbalist	• Proximity • Flexible payment terms- *"they usually collect payment in bits and don't demand money immediately"* • Cultural – *"it is from our grand fathers"* • Referral by hospital staff for chronic/ severe cases such as *gborxi.*
Fetish	• Complicated cases e.g. With diarrhoea • Cultural • Confidence/faith *"they are with us; we believe they are representing the gods and they know everything."*
Spiritualist	• Faith – *"after going to all places they finally come here because God is all powerful and can heal"* • Referral by health staff
Hospital	• Perception by some that herbs are dirty • Investigations – X-ray, laboratory • Confidence – *"it is the right place"*
Drug store	• Proximity • Financial – *"if you want just 200 cedis they will give you, but as for the hospital you have to buy all that they write for you."*

CHAPTER SIX

6.1 DISCUSSIONS AND CONCLUSIONS

6.1.1 Perceptions on importance, cause and prevention of ARIs

From the study, ARIs and related conditions are perceived as very common by the community. They were ranked second only to malaria in prevalence. It is therefore not surprising that community members had knowledge of specific diseases classified as ARI and with specified local terminologies. ARIs commonly identified were cough, whooping cough, asthma and measles. ARIs not mentioned spontaneously included pneumonia, an important one, and ear infections. Even though Pneumonia had no specified local name, a descriptive phrase was used – *fafa na le dzito dzito*, meaning cold lung. Such local phrases were identified in Focused Ethnographic Studies conducted for ARI programmes in the Philippines[27] – *Hirap huminga* (breathing is difficult) and *mabilis ang paghinga* (fast breathing). These phrases were then used to communicate health education messages on danger signs of ARIs.

ARI's are perceived as a problem by the community not because of their associated mortality but for other reasons such as the cost of cure, inconvenience to caretakers and because they affect mainly children.

Knowledge of cause of ARIs is not associated with the "germ theory" of disease but mainly with secondary factors mostly ecological and behavioural, such as exposure to cold conditions and nutritional factors. These secondary factors, as documented, are 'risk

factors' for ARI's[28]. The knowledge of these is therefore a positive perception, which must be reinforced during health education whilst other misconceptions such as witchcraft are discouraged.

Knowledge of prevention by the community members is impressively high and must be sustained as immunization has been identified as the single most important action that can prevent ARI's and their complications such as whooping cough and measles. This high knowledge is a reflection of the positive impact of EPI activities in the District. Such programmes usually involve health education sessions during which information is imparted on how to take care of children with febrile illness.

6.1.2 Knowledge of severity

Caretakers however showed a poor knowledge of signs and symptoms of ARI - cough was mentioned by only 30% even though it had been recognised by over 50% as an ARI. Severity signs were also not well known. Knowledge of severity was not associated with signs and symptoms but rather with duration of episode, which implies that a severe ARI would only be identified if it lasted longer than expected. This may lead to delays is care seeking for pneumonia which can develop and kill within 5 days.

6.1.3 Home practices

Foods are not completely withheld during an ARI episode however the importance of food substances not recommended, especially green vegetables such as okro which may be of some nutritional value would have to be investigated further, considering the fact that okro is a staple food in the District. Giving foods such as light soup and 'soft' meals

are positive perceptions in line with recommended Integrated Management of Childhood Illnesses (IMCI) management principles for sick children. Such perceptions must be encouraged.

There is a high prevalence of self-medication both with orthodox and herbal preparations. The results found in this study are similar to the baseline studies conducted by Africare and Volta Regional Health Administration on childhood illness for the child survival program in the district in 1998[8]. In that study 49% said they sought treatment at an orthodox health facility (government and private) compared to 52% in this study who said they went to a clinic. A similar proportion (38%) went to the chemical shop (31% in this study). In that study however the use of herbal preparations was not specified. Since options given for answering the question required only single responses, respondents who did other things apart from what was stated, for example using herbal preparations as a first aid before going to the clinic may not have been captured. Going to a drug seller was the most common action taken by caregivers during illness episodes (52% of mothers interviewed) in the research findings documented by the Ghana Health Seeking Behaviour (GHSB) Project in Kintampo between July 1998 and February 1999[29]

The use of herbal baths found in this study, (specifically bathing 7 times), for home treatment of fevers was found in all study communities in a qualitative research on 'Early appropriate home management of fevers in children aged 6 months to 6 years in Ghana' conducted in Gomoa, Ejisu-Juaben and Wa by Browne et al[30] of the Ghana Home Management of Fevers Team in August 1999. Since there is a high confidence in herbal

preparations by the community members in this study, they probably must be effective. There is therefore the need to investigate them further; meanwhile efforts must be made to discourage modes of administration (like nasal instillation) that may be harmful.

The stated response about drug stores giving drugs to people depending on what they can afford was also documented in the same study by Browne at al[30] This practice can lead to under dosing and antibiotic resistance. Health education would therefore have to be given to these chemical sellers on the need to give the full course of treatment.

6.1.4 Time and sequence of care seeking

Timing of care seeking is a complex issue, which takes into account availability of healthcare facilities, social and economic events and illness severity, to mention a few. From this study, most people would attempt to seek some form of care quite early whether appropriate or inappropriate. However the sequence of care seeking depends mainly on finances and severity to a smaller extent. There is a sequential resort demonstrated, however – initially nothing may be done, then home care with herbs or other home made preparations, then use of drugstore and then eventually to the health centre/clinic if resources can be found. These actions may lead to untimely report at the health facility. Main factors considered in selecting which provider to consult include:

1. Faith in the system
2. Proximity
3. Flexible payment system
4. Cost of treatment
5. Search for spiritual causes of illness particularly for chronic/severe cases.

6.1.5 Socio demographic factors

Even though the effect of age, sex, religion and education on care seeking and home management practices could not be statistically established, responses during the Focus Group Discussion suggests that differences exist between the different age groups (older and younger women) and the sexes. Older women and males are more likely to use herbal preparations than younger women. This finding was also documented in the study by Browne et al[30] mentioned earlier, where older mothers and fathers were found to use herbs more often than younger mothers.

The decision on external care seeking in this study could be made by either the father or the mother and sometimes by an elderly relative. This finding is different from other studies in which mainly the mother made the decision. Awedoba et al[31], in their FES of ARIs conducted in three Ghanaian sites found that at all sites mothers were central to the decision that a sick child needs treatment outside the home, even though they do consult other members of the household on this. In Amofa's[13] study on the same issue in the Ashanti region, however, fathers made the decision on care seeking in 75 % of cases.

6.1.6 Constraints to care seeking at orthodox health facilities

The main constraint mentioned to care seeking at the health facility was financial. This is not surprising taking into consideration the fact that respondents were mainly farmers, depending on subsistence agriculture and traders, whose wares are mainly produce from

these farms. These financial constraints and their effects on care seeking have been documented in other studies[13, 26, 29]. Even though other issues such as transportation, staff attitude and language barriers also featured. As one male participant put it *"They (the nurses) don't want to speak the local language and insist on speaking English."* The mean waiting time of 3.2 hours was similar to that of 3.12 hours documented in Amofa's study in the Ashanti Region on caretakers responses to ARIs[13], where long waiting time was one of the major constraints to care seeking at government health facilities. This problem can be addressed through good management practices at the health facilities.

CHAPTER SEVEN

RECOMMENDATIONS

In view of the findings from the study, it is recommended that health workers give health education to community members on the following:

a. Signs of severe ARI for early recognition and care seeking. This can be done using the WHO ARI videotapes and translated into local languages.
b. The need to increase fluid intake e.g. breastfeeding during illness episodes.
c. Reinforcing positive practices such as giving children soft foods and sponging febrile cases.
d. Sustaining positive perceptions on the role of immunisation in preventing ARIs.

Health care providers would have to explore the value of some of the foods restricted as well as the efficacy of the local herbs used. The latter would require collaboration with Traditional practitioners; meanwhile, health education can focus on addressing issues like the dangerous modes of administration of the herbal preparations, such as nasal instillation.

There is the need for collaboration between the District Health Administration and the alternative health care providers identified - the drug store operators and the herbalists.

The drug store operators should be given education on the need for the full management of a child with an ARI. They can then pass this message on to their clients and advice them to come back for the full course of treatment. These community providers should also be educated on what conditions they can handle, since not all ARIs are life-threatening, and encouraged to refer specified cases.

The formal health system providers would have to discuss with community members alternative modes of payment. These may include the possibility of paying in instalments or having a health fund managed by the community members themselves.

To further understand the issues under study, there is the need to interview the alternative health providers (Traditional Healers and Chemical Shop Operators) as well as health staff and TBAs, in another study. The author could not do this because of time and financial constraints.

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APPENDIX 1

ACUTE RESPIRATORY INFECTION IN UNDER FIVES – DETERMINANTS OF CARE SEEKING AND HOME MANAGEMENT PRACTICES. AKATSI DISTRICT COMMUNITY SURVEY – CARETAKER QUESTIONNAIRE

Study Number …… Date ……. / ……..

Name of interviewer ……

Village ……..

GENERAL INFORMATION

Age of caretaker [ ]

Sex: [ ] 1. Male 2. Female

Educational Level [ ]

1. No Schooling 2. Primary 3. Middle / J.S.S.
4. Secondary / Technical /Vocational / Commercial
5. Tertiary 6. Others……

Occupation: [ ]

1. Farming 2. Teaching 3. Artisan 4. Trading
5. Unemployed 6. Clerical 7. Others ……..

Religion: [ ]

1. Christian 2. Islam 3. Traditional Religion 4. Others……

BELIEFS, ATTITUDES & PERCEPTIONS

1. What are the most common diseases among children in this community?

Condition	(S)	(P)	Ranks
1. Malaria			
2. Diarrhoea			
3. Rheumatic Pains			
4. Waist Pains			
5. Convulsions			
6. Asthma			
7. Worm Infection			
8. Measles			
9. Malnutrition			
10. Fast breathing			
11. Cough			
12. Others			

2a. Do you consider ARI a problem in this community? [ ]

1. Yes 2. No 3. Don't know (If No or Don't know, go to 3)

2b. If Yes, why do you say so?

1. Very common [ ]
2. Can kill easily [ ]
3. Affects work output [ ]
4. Affects mostly children [ ]
5. Causes sleeplessness [ ]
6. Costly to cure [ ]
7. Others (specify) .....

3a. Mention any ARIs you know of? .....

3b. What are their local names .....

.....

4a. Are there some foods which should not be given to a child with ARI? [ ]

1. Yes 2. No 3. Don't know

If no / don't know skip to 5

4b. If yes, mention some.

4c. Please give reasons why.

.....

5. Are there any other taboos associated with ARIs? *(please mention some)*

6. What symptoms / signs will you associate with a child with ARI?

1. Cough [ ]
2. Running nose [ ]
3. Difficulty in breathing [ ]
4. Fever [ ]
5. Rapid breathing [ ]
6. Chest pains [ ]
7. Noisy breathing (wheezing, grunting etc.) [ ]
8. Crying [ ]
9. Hoarseness [ ]
10. Refusal to feed [ ]
11. Sleeplessness [ ]
12. Others (specify) .....

7. Are there some mild ARIs and severe ones? [ ]

1. yes 2. No 3. Don't know (If no / don't know skip to 11)

8. How would you know a child has a mild ARI ?

9. How will you know that a child has severe ARI ?

1. Difficulty in breathing (chest indrawing/rib retraction) [ ]
2. Rapid breathing [ ]
3. Inability to suck /feed [ ]
4. High temperature /Startling attacks [ ]
5. Convulsion [ ]
6. Change in sensorium [ ]
7. Excessive restlessness [ ]
8. Others (specify)

10. What causes ARI?

1. Witchcraft / curse / evil spirits [ ]
2. Exposure to cold/air [ ]
3. Too much air pollution [ ]
4. Over crowding [ ]
5. Over work [ ]
6. Falling from height /mishandling [ ]
7. Malnutrition / [ ]
8. Congenital (born with it) [ ]
9. Eating dirty food / drinking dirty water [ ]
10. Worms infestation [ ]

11. Don't know [ ]

12. Others (specify) ……

11. How can ARI be prevented?

1. Immunization [ ]
2. Adequate clothing [ ]
3. Sleeping in well ventilated rooms [ ]
4. Reduce air pollution [ ]
5. Staying away from smoke/ non smoking [ ]
6. Avoiding too much starchy food [ ]
7. Treat worm infestation [ ]
8. seek spiritual protection [ ]
9. Protect food from housefly [ ]
10. Do good so as not to invite curses [ ]
11. Prevent constipation [ ]
13. Eat well balance diet [ ]
14. Don't know [ ]
15. Other(specify) ……

……

12a. Can some types of ARI be transferred from one person to another? [ ]

1. Yes 2. No 3. Don't know (If No or Don't know, go to 13)

12b. If yes, which type?

1. Cough [ ]
2. Asthma [ ]
3. Whooping Cough [ ]
4. Catarrh [ ]
5. Tuberculosis [ ]
6. Others (specify) [ ]

PRACTICE

13a. Has your child had ARI within the past 6weeks ? [ ]

1. Yes 2. .No (If No, go to Q. 16)

13b. If yes, what did you do

1. Did nothing
2. Bought some drugs
3. Applied local herbs
4. Consulted a herbalist
5. Consulted a fetish priest
6. Consulted a spiritualist
7. Went to clinic/ hospital
8. Consulted a nurse at home
9. Other (specify)

13c. Please give reasons for your action/inaction

14 When do you decide to seek treatment for a child with ARI?

1. Within 3 days
2. After 3 days
3. Other (specify)

15. Who is responsible for taking the decision to send the child for treatment? [ ]

1. Father 2. Mother 3. Elderly person in the house

Others (specify) .....

16. What, in your opinion is the best treatment for ARI in this community ?

1. Cough mixture
2. Paracetamol
3. Herbs
4. Others (specify)

CONSTRAINTS

17a. Is there a health facility in this community? [ ]

1. Yes 2. No (If Yes, go to Q. 18a)

17b. If NO, how far is the nearest facility? ..... Km

18a. What is the nearest hospital (referral center) from here? [ ]

18b. How far is the hospital from here? ..... Km

18c. How easy is it getting transport to the hospital? [ ]

1. Easily
2. With a little difficulty
3. Difficulty

19. Describe the road network to the hospital. [ ]

1. Motorable throughout the year.
2. Not motorable for some part of the year.
3. Not motorable at all.

20. What are the major constraints you face in seeking health care from health institutions?

1. Financial [ ]
2. Accessibility [ ]
3. Long waiting time [ ]
4. Transportation [ ]
5. Attitudes of health workers [ ]
3. Other(specify) .....

21. How long does it usually take you to obtain (treatment) at the health facility? [ ]

(Time in hours)

1. 0 - 2. 1- 3. 2 - 4. 3 –
5. 4 - 6. 5 and more 7. Could not tell

22. What are some of the shortcomings of the health service providers?

1. Shouting at patients [ ]
2. Rudeness /lack of respect [ ]
3. Illegal Charges [ ]
4. Lateness [ ]
5. No sense of urgency [ ]
4. Others (specify

23. What factors are important in improving upon the health care delivery system in your community

1. Provision of drugs [ ]
2. Courtesy of health workers [ ]
3. Avoidance of taking bribes [ ]
4. Hygienic environment in H / Centre [ ]
5. Education (New concepts) [ ]
6. Collaboration between providers [ ]
7. Prompt referral [ ]
8. Availability of health personnel [ ]
9. Reduce waiting time [ ]
7. Others (specify) ……

……

….

APPENDIX 2

AKATSI DISTRICT

COMMUNITY SURVEY

GUIDELINES FOR FOCUS GROUP DISCUSSION

GENERAL INFORMATION

Village:……

Group:……

1. What are the most common diseases in this community in order of importance?

   ……

2. What are the most common diseases among children in this community in order of importance **(Record at least three)?**

   ……

   ……

   3. What are the local names used to describe ARI in this area?

   ……

   ……

4a. Do you consider ARI a problem in this community?

1 Yes [ ] 2. No [ ] 3. Don't know [ ]

4b. Why?

……

……

5. How can one recognise that a child has ARI?

6. Are there any mild and severe ARIs?

7. How can one know that a child has severe ARI?

8. What causes ARI?

9. How should we relate to someone with AR?

10. What food should be given to a child with ARI?

    Why? (for each food mentioned

11. What foods should not be given when one has ARI? (In terms of Taboos)

12. What do people do when a child has mild ARI?

13 What do people do when a child has severe ARI?

14 When do people seek help for a child with ARI?

15. What influences people in their choice of a particularly provider?

    Herbalist

    ……

    Drugstore

    ……

    ……

    Spiritualist

    ……

    ……

    Fetish

    ……

    ……

Hospital

……

16. Who is responsible for taking the decision to send the child for treatment?

……

17. How can ARI be prevented?

……

……

18a. Can ARI be transferred from one person to another? [ ]

1. Yes 2. No 3. Don't know (if No/Don't know, go to 19)

18b.If yes, which type?

……

……

18c. How? ……

……

19. What are the major constraints you face in seeking health care from health institutions? ……

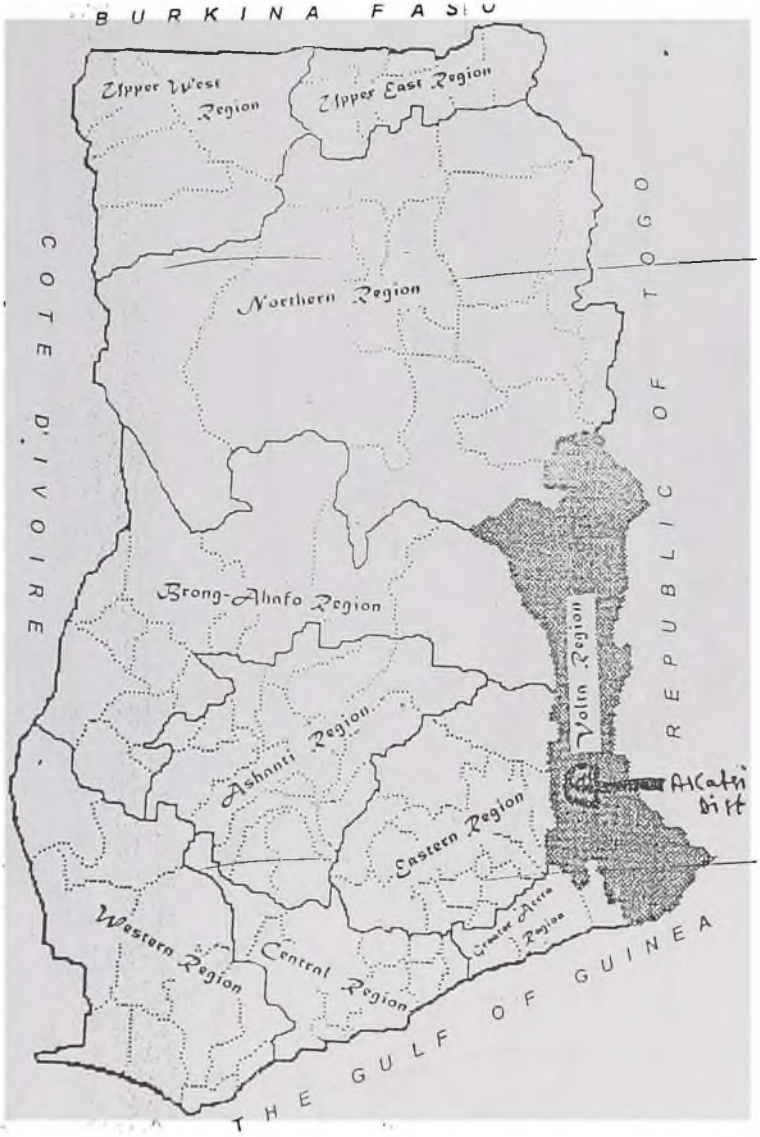
20. How long do you wait at the health centre before you get treatment? **(Time in hours)**

……

21. What are some of the shortcomings of the health service providers?

……

……


BURKINA FASO
Upper West Region
Upper East Region
Northern Region
COTE D'IVOIRE
REPUBLIC OF TOGO
Brong-Ahafo Region
Volta Region
Ashanti Region
Eastern Region
Western Region
Central Region
Greater Accra Region
THE GULF OF GUINEA

MAP OF AKATSI DISTRICT SHOWING THE SUBDISTRICTS