



**WOLKITE UNIVERSITY
COLLEGE OF MEDICINE AND HEALTH SCIENCE
DEPARTMENT OF NURSING**

**KNOWLEDGE, ATTITUDE AND PRACTICE & ASSOCIATED FACTOR OF MOTHERS ON
CARING CHILDREN WITH ACUTE RESPIRATORY INFECTION AMONG MOTHERS
ATTENDING UNDER 5 OPD AT ATTAT PRIMARY HOSPITAL, GURAGE ZONE, SINPS
REGION, ETHIOPIA 2015**

INVESTIGATOR

S. N	NAME	ID NO
1	SOSNA BAZEZEW	1354/ 12
2	KUMARA WAKJIRA.....	0883/ 12
3	ABRAR SHEMSU.....	1754/ 12

**A RESEARCH THESIS TO BE SUBMITTED TO WOLKITE UNIVERSITY COLLEGE OF MEDICINE
AND HEALTH SCIENCE DEPARTMENT OF NURSING THE PARTIAL FULFILLMENT OF
BACHELOR OF DEGREE IN NURSING**

AUGUST, 2023

WOLKITE, ETHIOPIA

WOLKI TE UNI VERSTY

COLLEGE OF MEDI CI NE AND HEALTH SCI ENCE

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CHI LDEREN WI TH ACUTE RESPI RATORY I NFECTI ON AMONG MOTHERS ATTENDI NG
UNDER 5 UNI T AT ATTAT PRI MARY HOSPI TAL, GURAGE ZONE, SNNPS REGI ON,
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I NVESTI GATOR

S. N	NAME	I D NO
1	SOSNA BAZEZEW.....	1354/ 12
2	KUMARA WAKJI RA.....	0883/ 12
3	ABRAR SHEMSU.....	1754/ 12

ADVI SOR

S. N	NAME
1	Mr. Bogale C.
2	Mrs. Agerie A.

AUGUST, 2023

WOLKI TE, ETHI OPI A

APPROVAL SHEET

TITLE: KNOWLEDGE, ATTITUDE AND PRACTICE & ASSOCIATED FACTOR OF MOTHERS ON CARING CHILDREN WITH ACUTE RESPIRATORY INFECTION AMONG MOTHERS ATTENDING UNDER 5 UNIT AT ATAT PRIMARY HOSPITAL, GURAGE ZONE, SNNPRS REGION, ETHIOPIA, 2015

Submitted by [Students]:

1. _____

Student Name Signature Date

2. _____

Student Name Signature Date

3. _____

Student Name Signature Date

Approved by [Advisor's]:

1. _____

Advisors' Name Signature Date

2. _____

Advisors' Name Signature Date

Approved by [Board of Examiners]:

1. _____

Examiners' Name

Signature

Date

2.

Examiners' Name

Signature

Date

ACKNOWLEDGEMENT

First of all, we would like to thank and glorify the almighty God who has been and will be the source of strength throughout our life. We would like to acknowledge Wolkite University, College of Medicine and Health Sciences, Department of Nursing for helping us to perform this research. Our deepest gratitude goes to our advisors Mr. Bogale C. and Ms. Agerie for valuable advice, encouragement, necessary guidance and support in developing this research thesis.

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ACRONYMS/ ABBREVIATION

ARI	Acute Respiratory infections
KAP	Knowledge, Attitude And Practice
LRI	Lower Respiratory Tract Infections
SNIPS	South Nation Nationality And Peoples
SPSS	Statistical Package For Social Sciences
URI	Upper Respiratory Tract Infections
WKU	Wolkite University

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ABSTRACT

Back ground: Acute respiratory infection is leading killer of children under 5 years of age. Clinical based data in Ethiopia indicate that acute respiratory infection is responsible for 35- 60% of outpatient attendants. Studies done on mothers sign and symptom of shows that most mothers did not recognize the sign of cough and difficult of breathing including key sign of pneumonia.

Obj ective: To assess knowledge, attitude and Practice of Mothers on Caring Children with Acute Respiratory Infection among mothers attending Under 5 units at Atat primary hospital

Method: Institutional based cross- sectional study was conducted to assess knowledge, attitude and practice of mothers on caring children with ARI at Atat primary hospital. The study was conducted from May 25- June 25, 2023 among mothers who have children of under 5 years who visited the hospital during the data collection period was included. A total of 327 mothers who have children of under 5 years were selected by systematic random sampling method. Every two mothers were approached and invited to participate in the study until the required sample size reached. Data were collected through face- to- face interview with structured questionnaire. The data were entered to Epi data version 3.1 and analyzed using SPSS version 20.

Result: Among the included mothers more than half, 56.3% of them within age group 25- 34 years then the study indicated that 64.5% of respondents have good knowledge (95% CI 59.1% - 69.7%) on the other hand, 50% of respondents had good practice (95% CI 44.9% - 56.0%) on ARI and 57.8% respondent had favorable attitude (95% CI 57.8% - 55.2%).

Conclusion and recommendation: The study reveals sufficient knowledge, attitude and practice of mothers towards ARI. Better literacy rate has a positive influence on the knowledge attitude and practice of mother. Health education programs for mothers in inpatient and outpatient clinic needs to be emphasized by professional and concerned

Keywords: Acute respiratory infection, knowledge, practice, attitude

1. INTRODUCTION

1.1 Background

Upper respiratory tract infections (URIs) and lower respiratory tract infections are two categories for acute respiratory infections (ARIs). The airways in the upper respiratory system, which also include the middle ear and paranasal sinuses, extend from the nostrils to the voice cords in the larynx. The continuation of the airways from the trachea and bronchi to the bronchioles and alveoli is covered by the lower respiratory tract(1)

The most common cause of acute diseases worldwide remains acute respiratory infections (ARI). Lower respiratory infections (LRIs) are the main cause of the almost 4 million respiratory disease-related deaths that occur each year, although upper respiratory infections (URIs) are very prevalent but rarely life-threatening. LRIs also cause more serious conditions like pneumonia and bronchiolitis.(2)

The primary cause of morbidity worldwide is acute respiratory infections, and pneumonia is a leading cause of death in children under the age of five in underdeveloped nations. It has been noted that there are a number of risk factors for respiratory infections in underdeveloped nations, including poverty, limited family income, low parental education, low birth weight, malnutrition, and lack of breastfeeding.(3)

ARI, particularly in young children under the age of five, is a significant cause of morbidity and mortality in underdeveloped nations. Around 70% of ARI-related deaths in children under 5 occur in Africa and Asia each year, accounting for roughly

1.9 million deaths overall. Comparing underdeveloped countries to industrialized countries, the death rate linked to ARI is 2–6 times higher in the latter.(4)

One of the most populous nations in Africa is Ethiopia, which has a sizable and increasing number of children living in rural areas. Ethiopia's under- five population is at risk, and ARI plays a significant role in the country's high rate of childhood mortality. The Ethiopian Demographic and Health Survey (EDHS, 2016) found that 7% of children under the age of five exhibited ARI symptoms, which was a higher prevalence than fever or diarrhea.(4)

The most common childhood illnesses in low- and middle- income countries are acute respiratory infections (ARI s). Each area of the respiratory system, including the middle ear, nose, and lungs, is susceptible to ARI s. A serious type of ARI that just affects the lungs is pneumonia. Pneumonia caused 1.4 million deaths among children under the age of five, accounting for 18.3% of all fatalities in 2008. The most common cause of death for young children in Ethiopia is pneumonia, which is projected to cause 3.9 million cases and 112,000 deaths annually. The leading causes of death each year are pneumonia (28%), neonatal illnesses (25%), diarrheal illnesses (20%), and malaria (20%).(5)

The diagnosis and treatment of moderate to severe ARI can be carried out by health professionals with minimum training and without the use of sophisticated technology by using the WHO- recommended categorization and case management procedures. Early detection and treatment of moderate and severe acute lower respiratory infections can reduce the risk of mortality from these diseases (ALRI). When active case finding is used in research conditions. The only alternative left is passive case discovery, which calls for parental or caretaker involvement. The effectiveness of reducing mortality from Acute Lower Respiratory I nfection depends on mothers, who typically serve as their children's primary caregivers, and on their capacity to recognize its signs.(7)

1.2. STATEMENT OF THE PROBLEM

Before they turn five, more than 12 million children worldwide pass away from acute respiratory illnesses, many of them during the first year of life. Acute respiratory tract infections, malnutrition, and diarrheal diseases are the main causes of morbidity and death in underdeveloped nations among all children illnesses. The mother's perspective on these conditions and her awareness of them are important factors in determining the health of the kid. In almost all societies, the mother is the primary caretaker for the kid. As a result, the mother's knowledge, attitude, and health habits directly affect the child's health and survival.(6)

Pneumonia affects children under the age of five in underdeveloped nations at a rate of 70–100 per 1000, which rises to 500 per 1000 in malnourished children. In underdeveloped nations, pneumonia accounts for 30% of all fatalities among children under five. While bacterial infections cause 80% of pneumonia cases in underdeveloped nations, the high death rate can be avoided by using the right medicines early in the course of the illness.(7)

The diagnosis and treatment of moderate to severe ARI can be carried out by health professionals with minimum training and without the use of sophisticated technology by using the WHO recommended categorization and case management procedures. Early detection and treatment of moderate and severe acute lower respiratory infections can reduce the risk of mortality from these diseases (ALRI). When active case finding is used in research conditions. The only alternative left is passive case discovery, which calls for parental or caretaker involvement. The effectiveness of reducing mortality from Acute Lower Respiratory Infection depends on mothers, who typically serve as their children's primary caregivers, and on their capacity to recognize its signs.(7)

The neonatal mortality rate in Ethiopia is 29 per 1,000 live births, infant mortality (IMR) is 48 per 1,000 live births, and the under- five mortality rate is 67.(8)

Neonatal mortality is thought to be caused by a delay in seeking medical attention, which is dependent on awareness-related ARI. In order to describe the degree of knowledge and practice of women caring for ARI in the research region, this study set out to(8)

This study aimed at describing the level of knowledge, attitude and practice of women caring for ARI in the study area.

1.3. SIGNIFICANCE OF THE STUDY

A few studies have conducted on knowledge, attitude and practice of mothers on caring children with acute respiratory infection. This study made as to have a better or supplementary information community towards a caring child with ARI.

Since mothers are the primary care providers for their children, their ability to recognize symptoms of ARI early determine the success of controlling childhood mortality by initiating early management. The findings of this study are useful in

providing background information for planning strategic interventions that will help address morbidity due to ARI in the study area and in efforts to meet the Millennium Development Goal of reducing child mortality.

So, understanding knowledge, Attitude and practice of mothers on these cases is an important basis for implementation of locally effective, appropriate health action strategies of planning, management and evaluation program on ARI causes. The purpose of study was to collect health information in relation to mother's knowledge, attitude and practice on case management after a relevant of data collection analysis and to lay a ground on long- and short-term health education program specific to acute respiratory infection.

2. LITERATURE REVIEW

2.1. Prevalence of knowledge, attitude and practice of mothers on caring children with acute respiratory infection

2.1.1. knowledge of mothers on caring children with acute respiratory infection

In rural Bangladesh an analysis of 63 older and younger mothers' qualitative data demonstrated that virtually all of them identified pneumonia and provided both mild and severe symptoms to explain pneumonia occurrences. Eighty-eight percent of mothers could describe a variety of minor and major pneumonia symptoms, including "The kid gets a cold, becomes restless, has trouble breathing, and there are noises in the throat." (9)

A study in Kumasi, Ghana on Maternal knowledge, attitude and practices regarding childhood acute respiratory infections in open-air marketplaces in 143 female merchants revealed that mothers showed knowledge of the symptoms that distinguish between mild and severe ARI, many of them said they would put off seeking medical attention if they experienced the dyspnea (11.2%), tachypnea (18.9%), chest retraction (21.7%), cough, fever, and anorexia (30.0%), or cough, fever and lethargy (57.3%) symptoms that indicate severe respiratory distress. These results confirm Ghana's need for an ARI health education campaign. (10)

Across sectional, community based study conducted in Khartoum among 300 mothers revealed that 77(25.6%) of them had good knowledge towards ARI. A cross sectional study conducted in Kharrakai community among 250 parents showed that 47.7% of them had good knowledge. A study conducted at civil hospital Mithi of Tharparkar among 1000 mothers revealed that 72% of mothers had good knowledge about ARI. Facility-based cross-sectional study conducted in Bedele hospital, South west 57.4% of mothers knew that microorganisms were the root of ARI, and 83 or 42.6% of them cited bad eyes as the culprit, 70% of moms knew a lot about ARI. In this study among the total of 195 mothers 70% of them had good knowledge of ARI (11,12,13,8).

2.1.2. Attitude of mothers on caring children with acute respiratory infection

A study on acute respiratory infections in rural Bangladesh, the mother's choice to

seek medical attention relies on how serious the child's health is seen to be by her and the rest of the family.(9)

According to a descriptive quantitative cross-sectional, community-based study conducted in Khartoum State 300 mothers were included 146(48.6%) of them have favorable attitude, from them 273 women (91%) believe that seeing a doctor is crucial when they feel their kid may have pneumonia, while 12 of them (4%) disagree and 15 of them (5%), in fact, had no idea.130 mothers (43.3%) preferred alternative and conventional treatment; 41 mothers (13.7%) preferred using antibiotics they already had at home; and 14 mothers (4.7%) preferred waiting for the illness to go away on its own. Mothers generally have a negative attitude when it came to how they feel about getting medical attention. Across sectional study conducted in kharrakai community among 250 parents showed that 26.7% of them had positive attitude towards ARI (11,12).

2.1.3. Practice of mothers on caring children with acute respiratory infection

A cross sectional study conducted at Civil Hospital Mithi of Tharparkar Desert revealed that 36 percent of moms began using home remedies, whereas 64 percent of mothers saw a doctor, and 95 percent of mothers accepted the doctor's advice while just 5 percent did not.(13)

Qualitative data collected from 63 older and younger mothers in rural Bangladesh, Home care routines often entailed steering clear of certain "cooling" meals and stroking the child's chest with oil and garlic solutions to "expel mucous." To relieve chest congestion, 40% of the moms gave their children basil leaf juice or warmed a combination of garlic and oil or black cumin seeds and massaged it on the child's chest.(9)

A Community based cross-sectional survey in Baringo District, Kenya the majority of mothers kept feeding their sick kids. The significance of giving sick children enough food and fluids is widely recognized.(14)

A study in Kumasi, Ghana on Maternal knowledge, attitude and practices regarding childhood acute respiratory infections in open-air marketplaces in 143 female merchants were questioned. Poor mother awareness of the ARI etiology by Western

norms existed. For the prophylaxis and treatment of ARI, a number of herbal and home care therapies. Some of which have potentially hazardous effects were often used. For instance, 25.9% of patients reported using castor oil and enemas to avoid ARI, while 39.9% of parents reported prescribe antibiotics to treat cough.(10)

Across sectional, community based study conducted in Khartoum among 300 mothers revealed that 77(25.6%) of them had good practice towards ARI.(11)

The study on Knowledge and Practice of Mothers Caring for their Children with Acute Respiratory Infection at Bedele Hospital, Southwest Ethiopia showed that 57.5% of mothers had good practice towards ARI. Merely 57 (29.23%) of the study's participants offered honey to their kids as a home treatment, whereas 192 (98.46%) of the moms gave their kids the right medication. In overall, only 57.5% of the moms had experience caring for children with ARI in pre- hospital activities.(8)

2.2 FACTORS ASSOCIATED WITH KNOWLEDGE OF MOTHERS ON CARING CHILDREN WITH ACUTE RESPIRATORY INFECTION

2.2.1. Socio demographic characteristics of mothers

A cross-sectional survey was conducted in the Department of Pediatrics at Darul Sehat hospital, found Literate moms are more diligent in ensuring that their children receive medical treatment. (12)

A cross sectional study conducted 300 mothers in Khartoum States. From the 300 mothers 227 are unemployed. among them 160 mothers have bad knowledge regarding ARI but the rest have good knowledge and from 73 employed mothers 63 of them have poor knowledge and 10 of employed mothers have good knowledge. (11)

2.2. 2 Obstetric and medical history of mothers

A study conducted in Kilimanjaro region, Tanzania showed strong maternal understanding of pneumonia and even identified potential risk factors, such inhaling amniotic fluid during birth and smoking, that could lead to respiratory issues. (15)

Conceptual framework

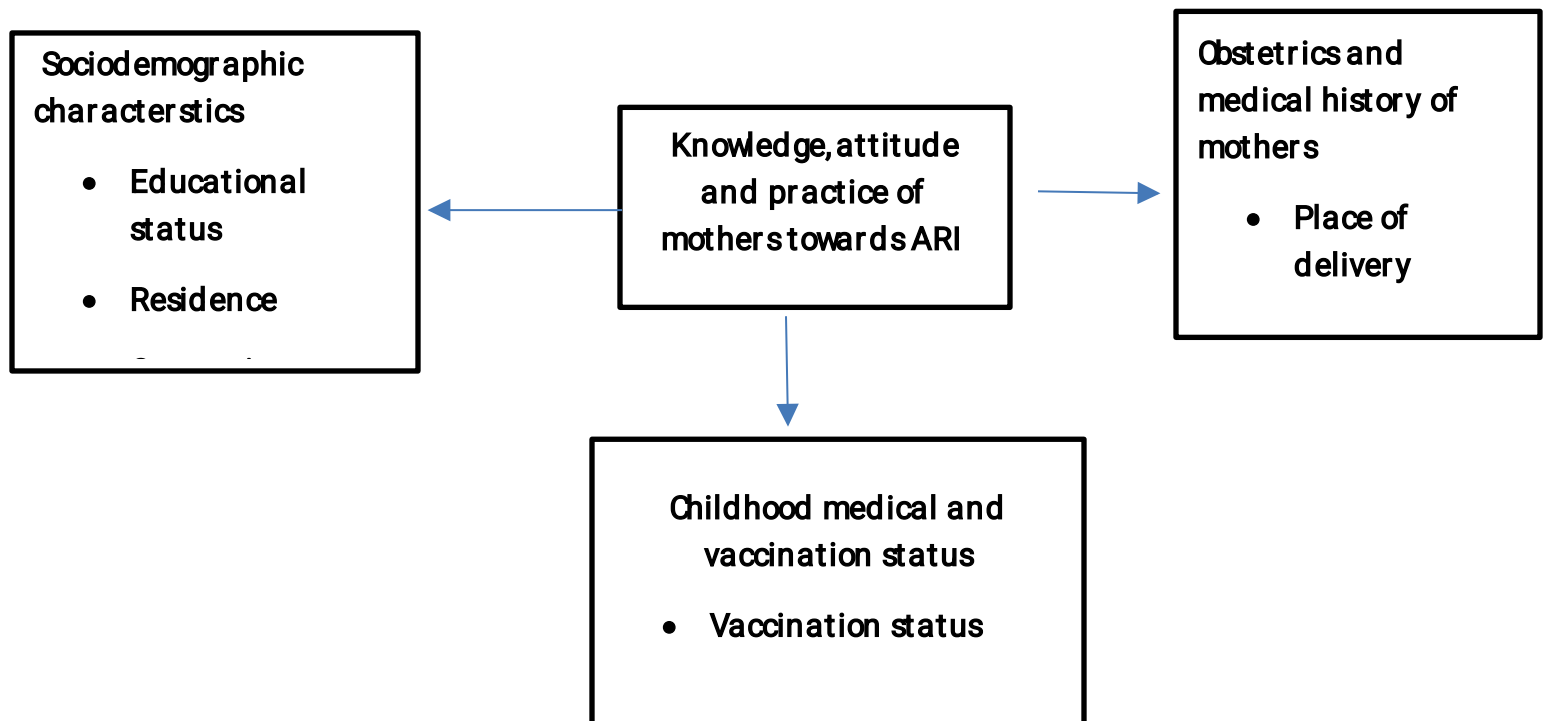


Figure 1 Conceptual framework for factors associated with KAP of mothers on caring children with ARI at Atat primary hospital, Gurage zone, SNNPR, ETHI OPI A, 2015 E.C (n=327)

3. OBJECTIVE OF THE STUDY

3.1. General objective

- To assess knowledge, attitude and Practice of Mothers on Caring Children with Acute Respiratory Infection among mothers attending Under 5 units at Atat primary hospital, Gurage zone, SNNPs region Ethiopia 2015

3.2. Specific objective

- To determine knowledge of mothers on caring their children with acute respiratory infection units at Atat primary hospital, Gurage zone, SNNPs region Ethiopia 2015
- To determine attitude of mothers on caring their children with acute respiratory infection units at Atat primary hospital, Gurage zone, SNNPs region Ethiopia 2015
- To identify practice of mothers on caring their children with acute respiratory infection units at Atat primary hospital, Gurage zone, SNNPs region Ethiopia 2015
- To describe factors associated to knowledge mothers on caring their children with acute respiratory infection units at Atat primary hospital, Gurage zone, SNNPs region Ethiopia 2015
- To describe factors associated to Attitude mothers on caring their children with acute respiratory infection units at Atat primary hospital, Gurage zone, SNNPs region Ethiopia 2015
- To describe factors associated to practice mothers on caring their children with acute respiratory infection units at Atat primary hospital, Gurage zone, SNNPs region Ethiopia 2015

4. METHOD AND MATERIALS

4.1 The study area

The study was conducted in Atat primary hospital which is found in china woreda, Gurage zone, SNNPR which is 174 km from Addis Ababa along the Jimma road in the southern region of Ethiopia and 17 km off the town Wolkite. The catchment population was expected to be 80000 people according to the hospital administration. The hospital has been operative since 1969. The hospital provides services to both inpatient and outpatient. In Atat primary hospital a lot of services were given from this antenatal care, EPI service, delivery service, under five and adult service and also emergency service are given. The study was conducted on under five outpatient department.

4.2. Study period

The study was conducted from May 25- June 25, 2023

4.3. Study design

Institution based cross sectional study was conducted.

4.4 Population

4.4.1 Source population

All mothers who seek care of their children with any problem at Atat hospital

4.4.2 Study population

All mothers who brought their children to Atat hospital with a problem of ARI during

study period

4.4.3 Inclusion criteria

Those mothers who had at least one less than 5 years of children, and those who were present at the time of data collection was included

4.4.4 Exclusion criteria

- Mothers who have hearing problem,

4.5. Sample size and sampling technique Determination

The required sample size of the study was determined using a formula to estimate single population proportion with the following assumption;

$nf = Z^2 P(1 - P) / W^2$, Whereas $p =$ prevalence of good knowledge = 70% (8)

$Z^2 =$ confidence interval (1.96)

$W =$ marginal error (5%)

$nf =$ initial sample size

$$nf = (1.96)^2 (0.7) (1 - 0.7) / (0.05)^2 = 323$$

Then finally we considering 10% non- respondents from the participant

i.e. $nf = n + 10/100(n)$

$$nf = 323 + 10/100 * 323 = 327$$

4.5.1 Sampling technique

A simple random sampling technique was done for selecting the participant hospital from seven hospitals in the study area. In which Attat primary hospital is selected then, a systematic random sampling technique will be used to select study participants at each k^{th} interval. The actual sampling fraction (k^{th}) was determined by dividing the total number of source population attending in Attat primary hospital in one month on average during the study period (627) by the corrected sample size (327) $k = 1.9$. Therefore, every two patients will be approached and invited to participate in the study until the required sample size will be reached in this hospitals. The corrected sample size will be taken in this hospital proportionally.

4.6. STUDY VARIABLES

4.6.1. DEPENDANT VARIABLES

- Knowledge of care provision on ARI
- Practice of care provision on ARI
- attitude of care provision on ARI

4.6.2. INDEPENDENT VARIABLES

The independent variables are Socio demographic characteristics (Age, Sex, Residence, Religion of care giver, Age of care giver, caregiver's occupation), Obstetric history of mothers (Planned pregnancy, ANC followup, PNC followup) vaccination status.

4.7. Data collection instrument

Structured questionnaires which were adapted from reviewing different literature(8,12,13). Structured questioners containing a variable of socio demographic characteristics obstetric history of mothers and child medical & vaccination status and knowledge, attitude and practice of mother on ARI was used to collect by interviewing the sample subjects. The questioner was prepared in English and translated in to Amharic and completeness of the information filled on the questioners was checked on daily basis during the data collection by the principal investigator. The questions and statements were arranged according to particular objectives that they can address

4.8. Data collection technique

The data was collected by using interviewer administered questionnaires. Two 4th year BSc nursing students to collect the data and one supervisor who will control and manage the data collection procedures were recruited. They were oriented on how to fill the questionnaire, about the ethical principles, confidentiality and data management prior to their involvement for data collection to assess knowledge, attitude, and practice of mothers on caring children with acute respiratory infection.

4.9. Data quality assurance

Attention was given to check all questionnaires for completeness and accuracy. Pretest of the questionnaire was carried out on mothers who will seek care children with acute

respiratory infection was done before one- week data collection period in under five units at Atat primary hospital who are not included in the study. It was carried out by the investigators to detect any problem in order to modify before the actual utilization with the study population before 01 week of data collection time.

4.10. Data processing and analysis

Data was cleaned, coded and entered into EPI- data 3.1, and was exported to SPSS version 25.0 statistical package for further analysis. Descriptive statistics was carried out to illustrate the proportions of developmental delay. Characteristics regarding socio- demographics and other status was expressed in percentages. Bivariable binary logistic regression model was employed to check explanatory variables having associated with the dependent variables. Variables found to have a p- value less than 0.2 in the bivariate analysis will be a candidate to the multi- variable binary logistic regression model. Odds ratio with its 95% confidence interval and p- values were used to measure strength of association and identify statistically significant result. Variables having P- value ≤ 0.05 were considered as statistically significant association

4.11 Ethical Issues

An official letter was taken from Wolkite university college of medicine and health science, department of nursing and given to the health center administration before starting interviewing of the study subject. Confidentiality will be kept throughout data collection and the mother has a right to refuse or discontinue the interview

4.12 Operational definitions

Care giver - Throughout this document care giver is used to the principal taker of the child these is especially mothers.(8)

ARI - An infection which include ear, nose, throat, larynx, trachea, bronchi, Bronchioles and lung.(8)

knowledge of respondents (8)

Score is determined by convening the number of corrected answers for the knowledge.

Good Knowledge- Mothers who answered more than 50% out of items

Poor Knowledge- Mothers who answered less than 50% out of items

attitude of respondents(12)

Favorable Attitude- Mothers who score more than the mean score of five- point Likert scale questionnaires towards ARI .

Unfavorable Attitude- Mothers who score less than the mean score of five- point Likert scale questionnaires towards ARI .

practice of respondents(14)

Good practice- Mothers who answered more than 50% out of items

Poor practice- Mothers who answered less than 50% out of items

4.13 DISSEMINATION OF RESULT

The final report of the study will be presented and submitted to Wolkite University, College of Medicine and Health Sciences, Department of Nursing and to Atat primary hospital administrators. It will also be disseminated to the respective health institutions and sectors, like pediatrician as well as other non-governmental organizations working on the pediatric health of child with ARI .In addition, efforts will be made to present in scientific conferences and publish in national journals.

5. RESULTS

5.1 SOCIO DEMOGRAPHIC CHARACTERISTICS OF MOTHERS

Three hundred twenty-seven mothers of under five children with ARI participated in the study (100% response rate). Among them, majorities 184(56.3%) are age group was between 25- 34 years, 91(27.8%) had secondary. Majority 249(76.1%) of them were married. 131(40.1%) mothers were house wives. From 327 mothers 58.8% belong to urban area and the rest are to the rural area. Most of them (68.5%) are Gurage in ethnicity. 176(53.8%) of mothers are orthodox in religion.

Table 1 Socio demographic character of mothers in Atat primary hospital, Gurage zone, SNNPR, ETHIOPIA, 2015 E.C (n=327).

Variables	Response	Frequency	Percent%
Age of mother	15- 24	69	21.1
	25- 34	184	56.3
	35- 44	74	22.6
Education status	Can't read and write	55	16.8
	Read and write	45	13.8
	Primary(1- 8)	27	8.3
	Secondary	91	27.8
	Collage(diploma)	71	21.7
	University(degree and above)	38	11.6
Marital status	Single	1	3
	Married	249	76.1
	Divorced	56	17.1

	Widowed	21	6.4
Occupation	Government employed	88	26.9
	Private business	35	10.7
	Merchant	28	8.6
	Farmer	45	13.8
	House wife	131	40.1
Residence	Urban	189	57.8
	RULAR	138	42.2
Ethnicity	Gurage	224	68.5
	Amhara	78	23.9
	Oromo	13	4.0
	Tigre	12	3.7
Religion	Orthodox	176	53.8
	Muslim	94	28.7
	Protestant	52	15.9
	Catholic	5	1.5

5.2 Children related characteristics

Majority of children were in the age group of 12- 60 months (90. 8%).there were 63.0% male children.49.8% of children were delivered at health center. Fully vaccinated children by EPI were 257(78.6%).

Table 2Children related characteristics in Atat primary hospital, Gurage zone, SNNPR, ETHI OPI A, 2015 E.C(n=327).

Variables	Response	Frequency	Percent
Age of children	2- 12 month	30	9.2
	12- 60 month	297	90.8
Sex of children	Male	206	63.0
	Female	121	37.0
Place of delivery	Home	55	16.8
	Health center	163	49.8
	Hospital	109	33.3
Children is fully vaccinated	Yes	257	78.6
	No	70	21.4

5.3 KNOWLEDGE OF MOTHERS ON CARING CHILDREN WITH ACUTE RESPIRATORY INFECTION

209(63.9%) of mothers knew that the cause of ARI was microorganism. Mothers knowledge regarding sign and symptoms of ARI cough (99.4%), fast breathing (3.1%), difficulty of breathing (64.5%), fever (80.7%). The most common worsening environment was summer (63.9), most common complication was pneumonia (64.2%) and the most common treatment option was through medical practitioner (64.2%)

Table 3 Knowledge of mothers on caring children with ARI in Atat primary hospital, Gurage zone, SNNPR, ETHI OPI A, 2015 E.C(n=327).

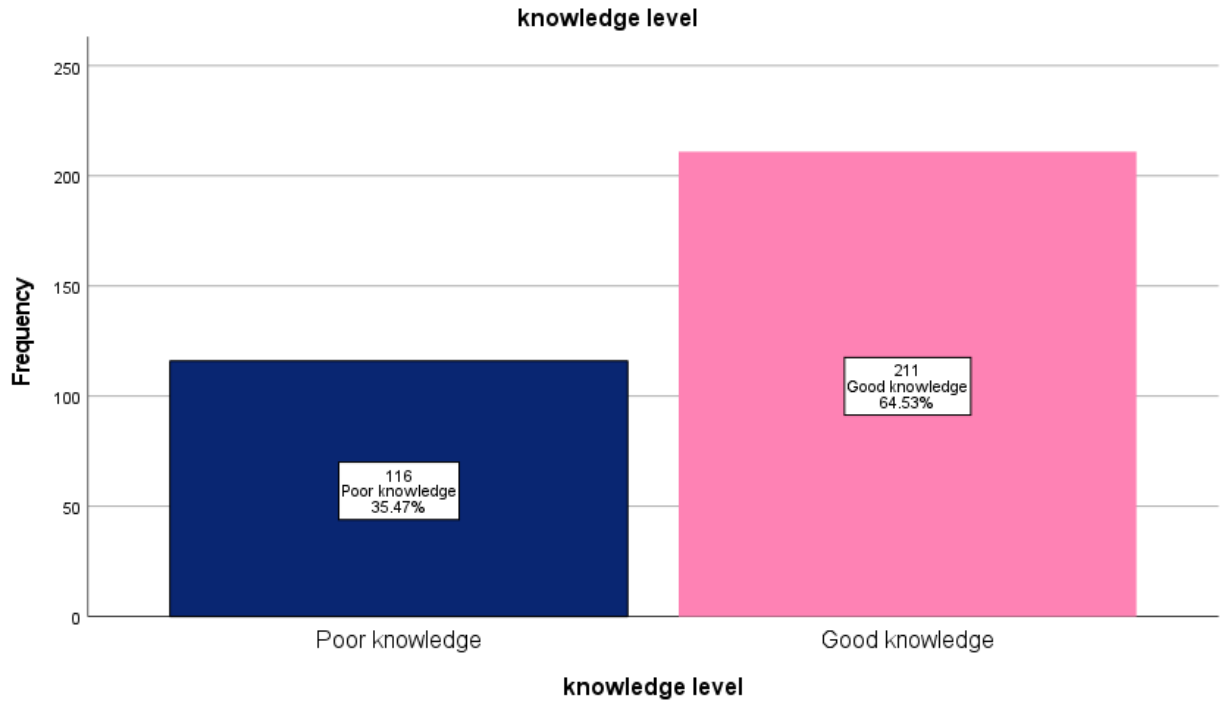
Knowledge assessment questions	Frequency			
	Yes	%	No	%
1. Does evil eye cause for ARI ?	118	36.1	209	63.9

2.Does microorganism cause for ARI ?	209	63.9	118	36.1
3.Does exposure to cold cause for ARI ?	131	40.1	196	59.9
4.Does God cause for ARI ?	118	36.1	209	63.9
5.Does cough the symptom of ARI ?	325	99.4	2	0.6
6.Does fast breathing the symptom of ARI ?	10	3.1	317	96.9
7.Does difficulty of breathing symptom for ARI ?	211	64.5	116	35.5
8.Does fever symptom for ARI ?	264	80.7	63	19.3
9.Does summer condition worsen the disease?	209	63.9	118	36.1
10.Does winter condition worsen the disease?	109	33.3	218	66.7
11.Does autumn condition worsen the disease?	12	3.7	315	96.3
12.Does rain condition worsen the disease?	94	28.7	233	71.3
13.Does dust aggravate the disease?	247	75.5	80	24.5
14.Does overcrowding aggravate the disease?	3	0.9	324	99.1

15. Does poverty aggravate the disease?	157	48.0	170	52.0
16. Does no immunization aggravate the disease?	197	60.2	130	39.8
17. Does it's complication of ARI ?	97	29.7	230	70.3
18. Does pneumonia complication of ARI ?	210	64.2	117	35.8
19. Does ear discharge complication of ARI ?	184	56.3	143	43.7
20. Does measles complication of ARI ?	126	38.5	201	61.5
21. Does bed rest treatment option for ARI ?	1	0.3	326	99.7
22. Does home remedy treatment option for ARI ?	118	36.1	209	63.9
23. Does visit to health institution treatment option for ARI ?	210	64.2	116	35.5

5.3.1 The overall knowledge of participants

Mothers who asked to score 23 knowledge related questions towards ARI. Out of the total study participants, 64.5% mothers had good knowledge (95% CI 59.1% - 69.7%).



- Poor knowledge towards ARI
- Good knowledge towards ARI

Figure 2 Knowledge of mothers on caring children with ARI in Atat primary hospital, Gurage zone, SNNPR, ETHI OPI A, 2015 E.C(n=327).

5.4 ATTITUDE OF MOTHERS ON CARING CHILDREN WITH ACUTE RESPIRATORY INFECTION

Majority of mothers (46.5%) of disagree about letting sick child with pneumonia untreated due to its harmless effect. 46.2% mothers agree on antibiotic gave usually useful to treat a child with pneumonia

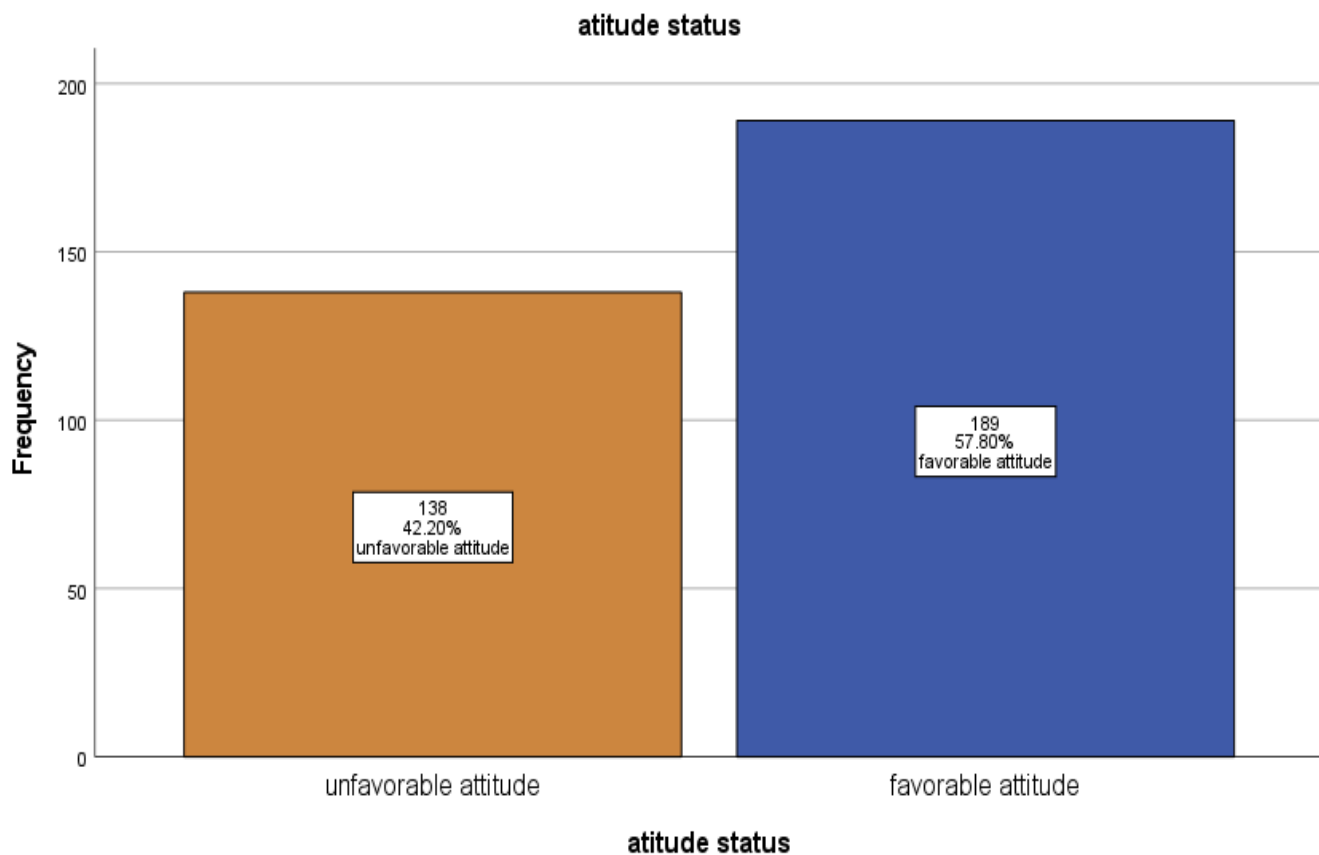
Table 4 Attitude of mothers on caring children with ARI in Atat primary hospital, Gurage zone, SNNPR, ETHI OPI A, 2015 E.C(n=327).

Attitude assessment questions	Strongly disagree(1)	Disagree(2)	Neutral(3)	Agree(4)	Strongly agree(5)

Pneumonia is not dangerous disease, which doesn't harm a child with pneumonia if left untreated	152(46.5 %)	32(9.8%)	27(8.3%)	94(28.7%)	22(6.7%)
A child with pneumonia should be brought immediately to health institution	27(8.3%)	111(33.9%)	2(0.6%)	24(7.3%)	163(49.8%)
A child with pneumonia should be isolated to protect from 'tilla' which causes pneumonia	0	92(28.1%)	126(38.5%)	108(33.0%)	1(0.3%)
Traditional healers sometimes can treat childhood pneumonia	29(8.9%)	93(28.4%)	67(20.5%)	46(14.1%)	92(28.1%)
Mothers can treat cough or common cold at home	0	0	0	149(45.6%)	178(54.4%)
Antibiotic gave usually useful to treat a child with pneumonia	2(0.6%)	22(6.7%)	76(23.2%)	151(46.2%)	76(23.2%)

5.4.1 The overall attitude of participants

Mothers that asked to score 6 questions on a five- point Likert scale related to ARI. Among the 327 respondents the 189(57.8%) had favorable attitude (95% CI 52.2% - 63.2%).



- Favorable attitude
- Unfavorable attitude

Figure 3 Attitude of mothers on caring children with ARI in Atat primary hospital, Gurage zone, SNNPR, ETHI OPI A, 2015 E.C(n=327).

5.5 PRACTICE OF MOTHERS ON CARING CHILDREN WITH ACUTE RESPIRATORY INFECTION

Our study evaluated the knowledge, attitudes, and practices of mothers of children under five who were presenting to the pediatrics outpatient department. Mothers said that the amount of food and fluid given to a child with ARI is the same while 46.5% mothers said that the amount of food and fluid given to a child with ARI should be increased.

Table 5 Practice of mothers on caring children with ARI in Atat primary hospital, Gurage zone, SNNPR, ETHI OPI A, 2015 E.C(n=327).

Practice assessment question	Frequency			
	yes	%	No	%
1.does the amount of food and fluid given to a child with ARI would be increased?	152	46.5	175	53.5
2.does the amount of food and fluid given to a child with ARI would be decreased	21	6.4	306	93.6
3.does the amount of food and fluid given to a child with ARI would be same	172	52.6	155	47.4
4.does the amount of food and fluid given to a child with ARI would be never given	1	0.3	326	99.7
5.Do you give herbsto a child with ARI at home?	174	53.2	153	46.8
6. Do you give modern drug to a child with ARI at home	106	32.4	221	67.6
7.Do you give holy water to a child with ARI at home	265	81.0	62	19.0
8.Do you give massaging chest with butter and herbs to a child with ARI at home	177	54.1	150	45.9
9.Do you consult health personnel to a child with ARI at home	152	46.5	175	53.5

10. Do you give antibiotic to your child with ARI ?	325	99.4	2	0.6
11. Do you give syrup to a sick child with ARI ?	172	56.3	155	47.7
12. Do you give tablet to sick child with ARI	14	4.3	313	95.7
13. Did you go to self- medication when your child becomes sick with ARI	174	53.2	153	46.8
14. Did you go to health institution when your child becomes sick with ARI	178	54.4	149	45.6
15. Did you go to traditional healer when your child becomes sick with ARI	174	53.2	153	46.8
16. Did you do nothing when your child becomes sick with ARI	1	3	326	99.7

5.5.1 The overall practice of practice

Mothers who asked to score 16 practice related questions towards ARI .Among 327 mothers 165(50.5%) mothers had good practice (95% CI 44.9% - 56.0%) towards ARI .



Figure 4 practice of mothers on caring children with ARI in Atat primary hospital, Gurage zone, SNNPR, ETHI OPI A, 2015 E.C (n=327).

5.6 Factors Associated with Knowledge on caring children with acute respiratory infection

In the multivariate logistic regression analysis three variables were meet the required criteria from bivariate logistic regression analysis for multivariate logistic regression analysis at P Value of <0.05. According to our finding the odds ratio of mothers whose education level was secondary, collage have 12.5 and 9.5 times higher to have good knowledge as compared to those who are illiterates respectively OR 95% CI (4.22- 43.18 AND1.70- 31.57). The oddsratio of Mothers on the age group 15- 24 have 87.7% times lower to have good knowledge status AOR 95% CI (0.03- 0.40). the odds ratio of Mothers with urban residence are 6.7 times higher to have good knowledge AOR 95% CI (3.16- 14.42)

Table 6 Bivariate and multivariate analysis of factors associated with knowledge of

mothers towards ARI at Attat primary hospital, SNNPR, Ethiopia

Variables	Respondents	Knowledge		COR	AOR	P Value
		Poor n(%)	Good n(%)			
Education status	Can't read and write	40(34.5)	15(7.1)	1	1	
	Read and write	31(26.7)	14(6.6)	1.41(0.60- 3.32)	1.15(0.424- 3.1)	0.782
	Primary	10(8.6)	17(8.1)	4.80(1.81- 12.7)	2.083(0.66- 6.54)	0.209
	Secondary	13(11.2)	78(37)	13.90(6.09- 21.32)	12.5(4.9- 21.71)	0.00†
	Collage	16(13.8)	55(26.1)	9.83(4.371- 22.12)	9.58(3.66- 25.05)	0.00†
	University	6(5.2)	32(15.2)	13.33(4.626- 38.4)	6.63(1.85- 23.75)	0.006
Age of mother	15- 24	42(36.2)	27(12.8)	0.46(0.23- 0.23)	0.123(0.03- 0.40)	0.00†
	25- 34	43(37.1)	141(66.8)	2.36(1.33- 4.19)	0.78(0.28- 0.28)	0.641
	35- 44	31(26.7)	43(20.4)	1	1	

Residence	Urban	32(27.6)	157(74.4)	0.13(0.07-0.21)	6.75(3.16-14.42)	0.000
	Rural	84(72.4)	54(25.6)	1	1	

NB: COR: crude odds ratio * significant p value ≤ 0.05 AOR: adjusted odd ratio

5.7. Factors Associated with attitude on caring children with acute respiratory infection

In the multivariate logistic regression analysis two variables (education level and occupation) were meet the required criteria from bivariate logistic regression analysis for multivariate logistic regression analysis at P Value of <0.05 The odds ratio of mothers whose occupation was government worker have 60% times higher to have favorable attitude status respectively AOR 95% CI (0.215- 0.757).

Table 7 Bivariate and multivariate analysis of factors associated with Attitude of mother towards ARI at Attat primary hospital, SNNPR, Ethiopia

Variable	Respondents	Attitude		COR	AOR	P Value
		Unfav n(%)	Fav n(%)			
Education level	Can't read write	14(10.1)	41(21.7)	1	1	
	Read and write	8(5.8)	37(19.6)	1.404(0.544-3.623)	1.463(0.556-3.852)	0.441
	Primary	11(8)	16(8.5)	0.721(0.266-1.957)	0.980(0.333-2.887)	0.971
	Secondary	50(36.2)	41(21.7)	0.253(0.120-0.530)	0.291(0.127-0.666)	0.084
	Collage	37(26.8)	34(18)	0.332(0.156-	0.403(0.172-	0.086

)		0.709)	0.942)	
	University	18(13)	20(10.6)	0.341(0.140-0.833)	0.539(0.196-1.486)	0.233
Occupation	Gov't employed	24(14.8)	64(38.8)	0.414(0.235-0.730)	0.404(0.215-0.757)	0.005*
	Private business	10(6.2)	25(15.2)	0.268(0.125-0.574)	0.326(0.147-0.724)	0.006
	Merchant	7(4.3)	21(12.7)	0.571(0.251-1.299)	0.621(0.261-1.475)	0.280
	Farmer	44(27.2)	1(0.6)	1.319(0.622-2.797)	0.722(0.307-1.696)	0.454
	House wife	77(47.5)	54(32.7)	1	1	

NB: COR: crude odds ratio* significant p value ≤ 0.05 AOR: adjusted odd ratio

5.8. Factors Associated with practice on caring children with acute respiratory infection

In the multivariate logistic regression analysis two variables were meet the required criteria from bivariate logistic regression analysis for multivariate logistic regression analysis at P Value of < 0.05 . in addition the odds ratio of mothers whose education level was secondary, collage were 3.6 and 3.5 times higher to have good practice respectively AOR 95% CI (1.671- 7.773 AND 1.574- 7.914). the odds ratio of Mothers with urban residence are 3.4 times higher to have a good practice.

Table 8 Bivariate and multivariate analysis of factors associated with practice of mother towards ARI at Attat primary hospital, SNNPR, Ethiopia

Variable	Response	Practice		COR	AOR	P Value
		Poor	Good			
Educatio	Can't	41(25.3	14(8.5)	1	1	

n level	read write)					
	Read and write	30(18.5)	15(9.1)	1.464(0.615- 3.486)	1.368(0.555- 3.372)		0.495
	Primary	13(8)	14(8.5)	3.154(1.197- 8.307)	2.133(0.733- 5.881)		0.143
	Secondar y	36(22.2)	55(33.3)	4.474(2.139- 9.359)	3.604(1.671- 7.773)		0.00†
	Collage	27(16.7)	44(26.7)	4.772(2.203- 10.339)	3.530(1.574- 7.914)		0.00‡
	Universit y	15(9.3)	23(13.9)	4.490(1.845- 10.929)	2.153(0.983- 6.423)		0.054
Residenc e	Urban	67(41.4)	122(73. 9)	4.023(2.521- 6.421)	3.410(2.073- 5.610)		0.00†
	Rural	95(58.6)	43(26.1)	1	1		

NB: **CCR**: crude odds ratio* significant p value ≤ 0.05 **ACR**: adjusted odd ratio

6. DISCUSSION

Our study evaluated the knowledge, attitudes, and practices of mothers of children under five who were presenting to the pediatrics outpatient department

6.1. knowledge of mothers on caring children with ARI

In this study 64.5% of mothers had a good knowledge towards ARI. The finding in this study is higher than study done in Khartoum, Sudan 25.6%, Kharrakai 47.7% (11,12) The possible reason for this difference might be high literacy rate of mothers in our study and the difference in the study population (due to community based cross sectional study). In contrast, the prevalence of knowledge towards ARI in this study is lower than studies conducted at civil hospital mithi of tharparkar 72%, Bedele hospital 70%. (8,13) The possible reason for this difference might be due to the study participants high level of education and variation in sample size. The study found that 83.2% of mothers were literate overall. 61.1% of them had schooling beyond a secondary level.

6.2 Factors associated with knowledge of mothers towards ARI

In this study education level of mothers was one of the significant factor for knowledge of mothers towards ARI. Mothers with educational level secondary and collage were more likely to have good knowledge. This finding was similar to a study conducted in civil hospital mithi of Tharparkar (8). and also residence of mothers also a significant factor for knowledge of mothers on caring children with ARI. Mothers with urban background were more likely to have good knowledge which were supported by a study done in Tharparkar revealed that 74% of mothers with urban backgrounds were generally literate (11). Both studies indicate that women from urban backgrounds had greater levels of education, and this fact emphasizes the need for the government to work to raise these levels among moms in rural regions. Literate mothers are more diligent in ensuring that their children receive medical care.

6.3 Attitude of mothers on caring children with ARI

In this study 57.8% of mothers had favorable attitude. The result of this study is higher than a study conducted in Kharrakai community (26.7%), Khartoum (48.6%) this might be due to difference maternal socio-demographic characteristics and other differences in sample size (12, 13)

6.4. Factors associated with attitude of mothers towards ARI

In this study occupation is significantly associated. Mothers who are government workers had favorable attitude towards ARI than government workers.

6.5 Practice of mothers on caring children with ARI

In this study 50.46% of mothers had good practice. The finding of this study is lower than a study conducted in Bedele hospital south west Ethiopia (57.5%) this might be due to difference in sample size (8). On the other hand, the current study finding higher than a study conducted in Khartoum (25.6%) (11). This might be due to a difference in study population.

6.6. Factors associated with practice of mothers towards ARI

In this study education status were significantly associated to practice of mothers and urban residence were significantly associated. This finding was similar to a study

conducted in the department of pediatrics, darul sehat hospital. Residence were also significantly associated with practice of motherstowardsARI . (12)

7. CONCLUSION AND RECOMMENDATION

7.1 conclusion

The study reveals good knowledge of mothers on ARI symptoms, worsening environmental conditions, aggravating factors and complications. Their attitude towardsARI was appropriate with early consultation with qualified medical practitioner. Better literacy rate, has a positive influence on the Knowledge and Practices of mothers. The prevalence of knowledge, attitude and practice of mothers on caring children with acute respiratory infection who are attending at Attat primary hospital, southern Ethiopia ,2015 were 64.5% ,57.8% , and 50.6% respectively.

7.2 Recommendation

On the basis of the study's findings, the following suggestions are made:

- Health care professionals should perform ongoing, thorough health education programs for mothers in inpatient and outpatient clinics regarding the causes, symptoms, potential problems, preventive measures, and care of their children with ARI.
- With a focus on early detection and home management, mass media should disseminate accurate information on ARI and its complications
- It would be better if the hospital and the woreda health office jointly thought about the outreach program in order to increase and keep the good knowledge and enhance mothers' caregiving practices for children with ARI.

8. Strengths and Limitation of the study

Strengths

- Standard and valid questionnaires' used in other studies were adopted for the study
- Many different variables are assessed to identify factors associated with KAP

of motherstowardsARI

Limitations;

- Firstly, the cross-sectional nature of this study was limit the causal and effective interpretation of the factors observed Therefore, the data collected might not be as accurate there might be recall bias from participants.
- Secondly, since the study was institutionally based it might not be generalized to the total population of mother's knowledge attitude and practice towardsARI .

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Knowledge, Attitude, Practice and Associated Factor of Mothers on Caring Children with Acute Respiratory Infection Among Mothers Attending Under 5 Unit at Attat

Primary Hospital, Gurage Zone, SNNPR, Ethiopia 2015

Annex I. Information sheet and consent form (English version)

Dear respondent my name is _____ I am here to collect data for a study which entitled with "assessment of knowledge attitude and practice of mothers regarding with acute respiratory infection among mothers attending under 5 units at Attat primary hospital, Gurage zone, SNNPR, Ethiopia 2015.

Annex ii; English version questionnaire

Date of collection ___/___/___ E.C.

Questionnaire No _____

Instructions:

Name of hospital

Fill in the blank space.

Circle the appropriate answer.

Do not omit any item of information

Part I Mother related socio demographic characteristics			
S/ No	Question	Response	Skip
101.	Age of mother	1.15- 25 2.25- 34 3.35- 44 4.45- 49	
102.	Educational status	1. Can't read and write 2. Read and write 3. Primary (1- 8) 4. Secondary (9- 12) 5. Collage (diploma)	

		6. University (degree and above)	
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103.	Religion	1. Orthodox 2. Muslim 3. Protestant 4. Others (specify) -----	
104.	What is your current marital status?	1. Single 2. Married 3. Divorced 4. Widowed	
105.	Occupation	1. Government employed 2. Private Business 3. Merchant 4. Farmer 5. House wife 6. Others (specify)-----	
106.	Residence	1. Urban 2. Rural	
107.	Ethnicity	1. Oromo 2. Amhara 3. Gurage 4. Tigre	

		5. Others (specify)_____	
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Part II children related characteristics

S/ No	Questions	Response	Skip
201.	Age of children	1. Birth- 2 month 2. 2 month- 1 year 3. 1 year- 5 year	
202.	Sex of children	1. Male 2. Female	
203	Place of delivery	1. Home 2. Health center 3. Hospital	

204.	Children is Fully vaccinated according to EPI schedule	1. Yes 2. No	
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Part III Knowledge related questions

S/ no	Questions	Yes	No	Skip
301.	What causes for ARI ? A. Evil eye B. Micro- organisms C. Exposure to cold D. From God			
302.	What are the symptoms of ARI ? A. Cough			

	<p>B. Fast breathing</p> <p>C. Difficulty of breathing</p> <p>D. Fever</p>			
303.	<p>What environmental condition worsening disease?</p> <p>A. Summer</p> <p>B. Winter</p> <p>C. Autumn</p> <p>D. Rain</p>			
304.	<p>What are factors Aggravating the disease?</p> <p>A. Dust</p> <p>B. Over crowding</p> <p>C. Poverty</p> <p>D. No immunization</p>			
305.	<p>What are the Complications of ARI ?</p> <p>A. Fits</p> <p>B. Pneumonia</p> <p>C. Ear discharge</p> <p>D. Measles</p>			
306.	<p>What are the treatment options for ARI ?</p> <p>A. Bed rest</p> <p>B. Home remedy</p> <p>C. Visit health institutions</p>			

Part IV Attitude related questions

Instruction: Please give one answer among the alternatives that most accurately reflects your view on each statement. The alternative answers are as follows

1. = Strongly disagree 2. = Disagree 3. = Neutral 4. = Agree 5. = Strongly agree

S/ No	Questions	1	2	3	4	5
401.	Pneumonia is not a dangerous disease, which does not harm a child with pneumonia if left untreated					
402.	A child with pneumonia should be brought immediately to health institution					
403.	A child with pneumonia should be isolated to protect from "Tilla" which causes pneumonia					
404.	Traditional healers sometimes can treat childhood pneumonia					
405.	Mothers can treat cough or common cold at home					
406.	Antibiotic gave usually useful to treat a child with pneumonia,					

Part V practice related questions

S/ no	Questions	Yes	No	Skip
501.	The amount of food and fluid given to a child with ARI would be? A. Increased amount B. Decreased amount C. The same amount D. Food and drink never be given			
502.	What Kind of treatment do you give to a child with ARI at home?			

	<p>A. Herbs (Tenadam, Damakesa)</p> <p>B. Modern drug (syrup, Antibiotics)</p> <p>C. Holy water</p> <p>D. Massaging chest with butter or herbs.</p> <p>E. No, it is undesirable practice I should consult health personnel</p>			
503.	Do you give antibiotic to your child with ARI ?			
504.	<p>What kind of antibiotic do you give to a sick child with ARI ?</p> <p>A. Syrup</p> <p>B. tablets</p> <p>C. Others</p>			
505.	<p>Where did you go to get treatment when your child becomes sick with ARI ?</p> <p>A. Self- medication</p> <p>B. Health institution</p> <p>C. Traditional healers</p> <p>D. Do nothing</p>			

Thank You for willingness to participate

