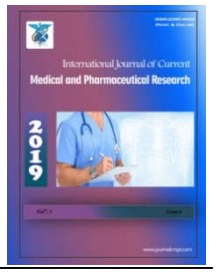
INTERNATIONAL JOURNAL OF CURRENT MEDICAL AND PHARMACEUTICAL RESEARCH
ISSN: 2395-6429, Impact Factor: 4.656
Available Online at www.journalcmpr.com
Volume 5; Issue 06(A); June 2019; Page No. 4250-4255
DOI: http://dx.doi.org/10.24327/23956429.ijcmpr201906668



Research Article

KNOWLEDGE, ATTITUDE AND PRACTICE OF MOTHER HAVING CHILD LESS THAN 5 YEARS OF OLD REGARDING ACUTE RESPIRATORY TRACT INFECTION

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ARTICLE INFO

Article History:
Received 4th March, 2019
Received in revised form 25th April, 2019
Accepted 23rd May, 2019
Published online 28th June, 2019

Key words:
Acute respiratory infection, mother's knowledge, children less than 5 years of age, breast feeding, bottle feed, noisy breathing, castor oil

ABSTRACT

Introduction: Acute respiratory infection remain a common cause of morbidity and fatality, influencing children mainly. 16% of Pakistani children become victim of it and 4 million children die due to it annually. It usually triumphant in urban areas. To know the ARI related concept of mother it is very important to enhance the quality of life because domestic care impacts greatly upon fitness of child. The capability to decipher the standard perception of the mother in terms of the basis treatment of the disease is a considerable foundation for rational health interventions. However the involved facts about the faith and sports allied to infant of ARI is finite.

Methods: Data was collected through interview based questionnaire from October to December at Dr Ruth KM Pfau Civil Hospital Karachi. The study population included mothers of children aged under 5 years who visited the pediatrics OPD and ward in this duration for any medical problem. Mothers of children with chronic illness or congenital anomalies were also excluded from the study. Data was entered and analyzed by SPSS 24 to examine the association between knowledge, attitude and practice of mother regarding acute respiratory infection

Results: A response rate of 95% was obtain with 40.8% were males. Almost an equal number of individuals (71.4%) participants from the urban area and [28.8%] from the rural area. Public /media [47.8%] and friends/relatives [47.8%] found to be the main source of knowledge. Also micro-organism [43.1%] and air born disease [49.1%] found to be the main contributing factor. Majority [45.1%] knew that winter can worsen the situation. [20.8%] people marking pneumonia to be the greatest complication. More than half population [61.4%] thinks that delivery at hospital reduces the risk of ARI. Environmental factor has not shown any significant association (p=0.211) with knowledge of mother. When alarming signs was compare all show i.e. fast breathing (p=0.001), noisy breathing (p=0.001) show statically significant association. Gender specific analysis revealed no significant finding.

Conclusion: This study disclosed insufficient knowledge of mothers regarding the symptoms of ARI, environmental influence on ARI, aggravating factors and convolutions. Their perspective towards ARI was suitable however the practices being followed were not. Good literacy rate showed to have more constructive impact on the knowledge, attitude and practices of mothers. Thus, the national ARI control program in Pakistan should consider these findings when developing ARI policy. There is also the need for research on the efficacy and any possible adverse effects of identified home remedies.

INTRODUCTION

Acute Respiratory Infections remains a paramount cause of morbidness and fatality pandemically, mostly influencing children less than 5 years of age [1]. On annual basis, approximately 4 million children die due to ARI related diseases. [2] Most of the countries economy is incurred upon these infections. It is the prime purpose for utilise health care assistance for the children. Public health sectors are concerned for the control of these ARI's [3]. As depicted by a survey conducted in Pakistan in 2011, 16% of Pakistani children are affected by ARI. It was also observed ARI was more pervasive in urban areas of the country [3]. ARI related vocabulary, concepts of mothers regarding affliction produced by the infection and home care enactment varies greatly among societies [4]. Identifying the contributing elements relating to ARI in various groups is cardinal for formation of more constructive policies and strategies to enhance quality of health, worldwide [1]. The pragmatic treatment of ARI is only possible only if the mothers as the chief custodians can perceive the signs of the disease and take the imperative steps. The ability to decipher the usual insight of the mothers in relation to the basis and remedy of the disease is a significant foundation for rational health interventions [2]. The interchanging of knowledge between the health care workers and the mothers should be uncomplicated and should express analogous meaning to one another. This can easily be seen by knowing how mothers handle home care after health care workers interface with them [4]. However, the concerned information about the faiths and exercises allied to childhood ARI in Pakistan is finite. A few studies have been published considering the subject. A clinical study conducted in Pakistan revealed that the mothers practiced home remedies for their

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children to resist the symptoms of the disorder and that only a splinter group was well informed about the primary purpose of the airways [2].

This paper subjects to describe the knowledge, attitude and practices of mothers related to ARI in their child. These statistics can also be helpful in three ways. Firstly to device a suitable home care advice for mothers. Secondly to design an effective survey tool to collect data on ARI. Thirdly to help health care workers with particulars that would fit regional language and culture so that imparting of information to mothers can be perfected.

MATERIAL AND METHODS

This cross sectional KAP study has been conducted with random sampling technique at Dr Ruth KM Pfau Civil Hospital Karachi in the duration from 21st October 2018 to 16th December 2018. The study population included mothers of children aged under 5 years who visited the paediatrics OPD and ward in this duration for any medical problem. The only criterion was that they should have at least one under 5 child, but a previous or recent attack of ARI wasn't necessary. Foreign mothers and/ or those having difficulty in interpreting questions were excluded. Mothers of children with chronic illness or congenital anomalies were also excluded from the study. The sample size was calculated using **www.openepi.com** with 95% confidence interval. After adding 5% non response rate, the final sample size was 400. Mothers who met the above mentioned criterion were enrolled in the study only after taking informed, verbal consent. A face to face interview was conducted in the native language by researchers and 2 house physicians using a self designed questionnaire. In order to remove the interviewer bias, interviewers were given training on how to ask the questions. Pilot study was done to check the feasibility of the questionnaire.

Our questionnaire inquired about the basic demographic details, vaccination status of child, mother's education, occupation and socioeconomic status. In order to evaluate their knowledge we asked about the different symptoms of ARI including cough, fever, sneezing etc, possible aggravating factors, complications and treatment options. To judge their practices we asked about the types of self medication or any home remedies that they might have practiced including ibuprofen, Joshanda, honey, breathing steamed air etc and does their practice includes using any left over antibiotic and checking expiry date over an antibiotic too. Mother's attitude towards ARI was assessed by asking whether they consider fast/noisy breathing, chest indrawning and air hunger as an alarming sign for possible ARI. We also obtained their views about the protective role of breast feeding and delivery in hospital rather than home towards the development of ARI and the negative impact of smoking during pregnancy on the lung development of the baby.

Data was analysed using SPSS version 24. Frequencies and percentages were computed for categorical responses. Chi square test was applied to check the categorical responses of mothers belonging to 2 different areas (rural and urban). In case of ordinal data, the Mann-Whitney U test was used. A p-value of less than 0.05 was considered statistically significant.

RESULTS

Out of 399 individuals who completed the questionnaire {236, 59.1%} were female, while [163, 40.8%] were male. Almost an equal number of individuals 285 (71.4%) participants from the urban area and [115, 28.8%] from the rural area were included.

[142, 35.5%] participants had never heard of ARI before. However, majority of the individuals [258, 64.6%] demonstrate varying level of awareness about this condition. Public /media [191, 47.8%] and friends/relatives [191, 47.8%] found to be the main source of knowledge. Also micro-organism [172, 43.1%] and air born disease [196, 49.1%] found to be the main contributing factor for infection, shown in Table 1. In regards to sign and symptoms of ARI, when given the choice to mark more than one option nearly half of the sample [196, 49.1%] opted for fever. A large bulk of individuals [172, 43.1%] thought cough to be the main symptom, [107, 26.8%] participants said wheezing as main factor, around [85, 21.3%] though sneezing is mostly seen in ARI. However, other symptoms were marked less than 30%. Furthermore, an overwhelming majority [180, 45.1%] knew that winter can worsen the situation while [123, 30.8%] participants felt that autumn have sufficient worsening effect. A large portion [138, 34.5%] know that overcrowding has played a major role in aggravating this disease [169, 42.3%] thought poverty and poor hygiene is the main culprit while [48, 12%] participants believed that no immunization will aggravate it more. Alongside more than half individuals [226, 56.6%] don't know that this disease is prevailing in Pakistan. Most people state that bed rest [55, 13.7%] is necessary in this disease, other half [32, 8.4%] opted that consult to a doctor would provide better result. Regarding the complication of ARI, participants could choose more than one factor.

A diverse outcome was seen with [83, 20.8%] people marking pneumonia to be the greatest complication, [64, 16%] participant's diarrhea as an insignificant complication. An interesting extrapolation was that 217, 54.3%] individuals concurred that they used home remedies to relive ARI. Additionally, [251, 62.9%] participants always check expire date before use. Around [56, 14%] people have use homeopathy remedy as self-medication [35, 8.7%] take steam to get relive, almost [33, 8.2%] participants use nasal saline and [25, 6.5%] drink warm beverages to avoid symptoms of ARI, shown in Table 2. When asked whether they consider fast breathing as an alarming sign [204, 51.1%] participants agreed while other [195, 48.8%] were unsure. A sizeable majority felt noisy breathing as an alarming sign of ARI while majority [203, 50.8%] don't. About half participants disagreed that use of castor oil [229, 57.3%] and breast feeding [226, 62.45] may prevent ARI. A moderately large population [245, 61.4%] thinks that delivery at hospital reduces the risk of ARI. Almost an equal number of participants [221, 55.3%] doesn't feel that bottle feeding has an association with ARI, shown in Table 3.

When we compare the knowledge among mother of rural and urban area an insignificant association was found (p=0.94). In regard to symptoms an insignificant association found (p=0.37). When asked for source of knowledge among mothers of urban and rural area an insignificant association was found. Environmental factor has not shown any significant association (p=0.211) with knowledge. When aggravating

factor (p=0.16), treatment plans (p=0.164) was compared no significant association was found. Only when complication was compared with knowledge a statically significant association was noted. When asked for home remedy (p=0.063), checking of expire date (p=0.45), self-medication (p=0.061), practice home remedy to reduce ARI (p=0.137) has not shown any significant association. When alarming signs was compare all show i.e fast breathing (p=0.001), chest in drawing (p=0.02), noisy breathing (p=0.001), air hunger (p=0.001), castor oil use (p=0.001), massaging with herbs over chest (p=0.003), bottle feeding effect (p=0.015), and effect of smoking during pregnancy (p=0.001) show statically significant association. While the only effect of breast feeding on ARI (p=0.329), delivery at hospital (p=0.115) shows insignificant results.

Table 1 comparing knowledge of mothers regarding ARI in urban and rural areas

		Rural area	Urban area	p-value
Have you heard of acute respiratory infection	Yes	79 (30.7%)	179 (69.3%)	0.94
	No	36 (25.4%)	106 (74.6%)	
Do you know what are the symptoms of acute respiratory infection	Cough	53 (30.8%)	119 (69.2%)	0.37
	Fever	46 (23.5%)	150 (76.5%)	
	Wheezing	29 (27.1%)	78 (72.9%)	
	Sneezing	27 (31.8%)	58 (68.2%)	
	Pain in ear, nose, throat	11 (24.4%)	34 (75.6%)	
	Shortness of breath	11 (28.9%)	27 (71.1%)	
	Flu	12 (44.4%)	15 (55.6%)	
	Nasal congestion	7 (25.9%)	20 (74.1%)	
	Post nasal dripping	5 (26.3%)	14 (73.3%)	
	Chest congestion	8 (29.6%)	19 (70.4%)	
	Don't know	1 (20%)	4 (80%)	
What is your perception about acute respiratory infection	Water born disease	17 (38.7%)	28 (62.2%)	0.846
	Air born disease	31 (24.8%)	94 (75.2%)	
	Micro-organism causing	44 (30.8%)	99 (69.2%)	
	Spread by oil, junk or fast food	19 (26%)	54 (74%)	
	Don't know	4 (30.8%)	9 (69.2%)	
From where did you get to know about acute respiratory infection	Personal experience	15 (20.8%)	57 (79.2%)	0.81
	Public/media	60 (31.4%)	131 (68.4%)	
	Relatives/friends	33 (29.2%)	80 (70.8%)	
	\I don't know	7 (30.4%)	16 (69.6%)	
Do you know what environmental factor can worsen this disease	Summer season	21 (31.3%)	46 (68.7%)	0.211
	Rainy season	12 (52.2%)	11 (47.8%)	
	Winter season	54 (30%)	126 (70%)	
	Autumn	27 (22%)	96 (78%)	
	Don't know	1 (16.7%)	5 (83.3%)	
Do you know what are the aggravating factor of acute respiratory infection	Dust	9 (27.3%)	24 (72.4%)	0.16
	Over crowding	39 (28.3%)	99 (71.7%)	
	Poverty	49 (29%)	120 (71%)	
	No immunization	16 (33%)	32(66.7%)	
	I don't know	2 (18.2%)	9 (18.8%)	
Do you know this disease is increasing in Pakistan	Yes	34 (30.6%)	77 (69.4%)	0.65
	No	66 (29.2%)	160 (70%)	
	May be	15 (24.4%)	47 (75.5%)	
Do you know about the treatment of ARI	Yes	42 (28.4%)	106 (71.4%)	0.164
	No	73 (29.1%)	178 (70.9%)	
If yes, which one you think is best	Consult a qualified doctor	5 (20.8%)	19 (79.2%)	0.006
	Bed rest	17 (45.6%)	20 (54%)	
	Home remedies	15 (33.7%)	40 (72.8%)	
	Homeopathic medicine	5 (15.6%)	27 (84.4%)	
Do you know what are the complication of ARI	Fits	25(47.1%)	28(52.8%)	0.003
	Pneumonia	23 (27.7%)	60(72.2%)	
	Ear discharge	10 (19.2%)	42(80.7%)	
	Measles	11(23.4%)	36 (76.5%)	
	Malaria	15 (25.4%)	44 (74.5%)	
	Diarrhea	22 (34.3%)	42 (31.3%)	
	Don't know	9 (21.9%)	32 (78%)	

Table 2 comparing practice of mothers regarding ARI in urban and rural areas

		Rural area	Urban area	p-value
Have you ever practiced any home remedy on your child to reduce/ relieve any sign and symptoms of ARI	Yes	59 (39.9%)	126 (68%)	0.063
	No	56 (26.3%)	158 (73.4%)	
Have you ever checked expiry date over an antibiotic before giving it to your child	Yes	70 (27.9%)	181 (72.1%)	0.45
	No	45 (30.5%)	103 (69.9%)	
Have you ever done self-medication on your child for ARI	Yes	57 (25.3%)	168 (74.4%)	0.061
	No	58 (33.3%)	116 (66.7%)	
If yes, what medication you	Ibuprofen	13 (26.5%)	36 (73.5%)	0.028

prefer				
	Homeopathy	13 (23.5%)	43 (76.8%)	
	Paracetamol	12 (26.1%)	34 (73.9%)	
	Anti-allergy	7 (17.9%)	32 (82.1%)	
	Antibiotic	10 (35%)	18 (60%)	
	Joshanda	2 (28.5%)	5 (71.4%)	
Have you ever practice any home remedy on your child to reduce/ relieve sign and symptoms of ARI	Yes	66 (30.4%)	151 (69.4%)	0.137
	No	49 (26.9%)	133 (73.1%)	
If yes, what do you prefer	Breathing steamed air	15 (42.8%)	20 (57.1%)	0.216
	Drinking warm beverages	8(32%)	17(68%)	
	Using vaporizer to create humidity in room	7 (35%)	13(65%)	
	Avoiding cold and dry air	6(27.7%)	16(72.7%)	
	Nasal saline/ salt water	9(27.2%)	24 (72.7%)	
	Applying warm pack to the face	5(35.7%)	9 (64.2%)	
	Salt water gurgles	9(28.1%)	23 (71.6%)	
	Honey	2 (13.3%)	13(86.6%)	
	Sleep in upright position	4 (28.5%)	10 (71.4%)	
	Others	1 (14.2%)	6 (85.7%)	

Table 3 comparing attitude of mothers regarding ARI in urban and rural areas

		Rural area	Urban area	p-value
Will you consider fast breathing as an alarming sign	Yes	59 (28.9%)	145 (71%)	0.001
	No	56 (28.7%)	139 (71%)	
Will you consider chest in-drawing as an alarming sign	Yes	46 (23.6%)	149 (79.5%)	0.02
	No	69 (33.3%)	135 (66.2%)	
Will you consider noisy breathing as an alarming sign	Yes	48 (24.5%)	148 (75.5%)	<0.001
	No	67 (33%)	136 (67%)	
Will you consider air hunger as a dangerous sign	Yes	58 (26.5%)	161 (73%)	<0.001
	No	57 (31.1%)	123 (68%)	
Do you think castor oil and enemas may help to prevent ARI	Yes	51 (30%)	119 (70%)	<0.001
	No	64 (27.5%)	165 (72.1%)	
Do you think massaging with butter and herb over chest reduce ARI	Yes	41 (28.1%)	105 (71.9%)	0.003
	No	74 (29.9%)	179(70.8%)	
Do you thing breastfeeding may play a healthy role in ARI	Yes	53 (30.6%)	120 (69.4%)	0.329
	No	62 (27.4%)	164 (72.4%)	
Do you think bottle feeding increases the risk of ARI	Yes	47 (26.7%)	131(73.4%)	0.015
	No	68(30.8%)	153 (69.3%)	
Do you think delivery in hospital rather than at home reduces ARI	Yes	72 (29.4%)	173 (70.6%)	0.115
	No	4 (27.9%)	111 (73%)	
Do you think that smoking during pregnancy can adversely affect the lung development of child	Yes	47 (24.5%)	145 (75.5%)	0.001
	No	68 (32.9%)	139 (67.1%)	

DISCUSSION

In-depth cognizance of the prevailing knowledge, practice, and attitude concerning acute respiratory infection in a population is crucial for its efficacious planning and eradication [5]. Past researches have shown that primarily mothers accompany their children to the clinics and hospital [6,7]. Therefore, chiefly mothers were interviewed in this study. Aung T *et al* has reported that KAP on ARI of mothers in both rural and urban areas was nearly identical with the possible exception of their behaviour about seeking medical advice and health care [8]. In contradistinction to this study, our study has highlighted overall higher literacy rates in urban area, where 69.3% of mothers knew about ARI.

Mothers from urban population identified fever (76.5%) while majority of those from rural area labelled flu (44.4%) as the most significant symptom of ARI which reflects better knowledge and awareness in urban areas. Other symptoms as stressed upon by mother of urban area in decreasing order of frequency were pain in ear, nose, throat (75.6%), nasal congestion (74.1%), cough (69.2%) while sneezing, cough and shortness of breath were emphasized by mothers from rural setup. A study centred at DarulSehat hospital revealed cough as the most recurrent symptom of ARI [3]. Whereas in Ghana, retraction of ribs (22.6%), fever, cough, and lethargy were the most prevalent symptoms [9]. Another study outlined fever (92.5%), cough and inability to play [10]. Aung K *et al* disclosed that only 2% of mother residing in urban area were able to identify the exact aetiology of ARI [8]. Contrary to this in our sample population from urban area, 75.2% of mothers succeed in identifying the correct aetiology for ARI. while majority of those from rural area either labelled it as waterborne disease or felt confused in naming the exact cause.

It is hypothesized that hospitalization rates of LRTI's are accredited to adjustable risk factor including health care access, overcrowding in house, poor indoor quality housing, lack of sufficient plumbing and exposure to smoke [11,12,13,14]. An Alaskan study carried out in rural area has described that in children less than 3 years of age inhabitants of a house having either less than 4 rooms or > 6 family members were consequently linked with higher number of hospitalization with lower respiratory tract infection [15]. A study carried out in Brazil also disclosed parallel results [16]. Additionally, irrefutable significant associations were found between tobacco, smoke and respiratory infection in children [17,18,19]. These infections were most pervasively exasperated by dust (81.1%) in one study published in 2016, while in Myanmar it was 89% [20]. In this survey, mothers

were mainly concerned about dust, overcrowding, poverty, and lack of immunization as the worsening factors of ARI.

According to Kapoor SK *et al* home remedies can be used by mothers in the management of mild ARI while 8 and ½ percentage of mothers responded that absolutely no treatment is needed [21]. In this study, mothers belonging to the urban setup preferred either consulting a qualified doctor (79.2%) or homeopathic medicine (84.4%), due to their higher literacy rate (Table 1). While rural mothers preferred bed rest and home remedies. A survey at Darulsehat hospital unveiled that about 6% of mothers practice home remedies [3]. Our survey has revealed even higher percentage (69.4%) from urban and 30.4% from rural areas to be exact. Among home remedies, honey, salt water, avoiding cold or dry air and applying the warm pack to the face were popular choices. Other studies carried out in Lahore [22] and Multan [23] mentioned practice of home remedies by mother as 23% and 40% respectively. Moreover, 27% of participants in a survey at New Delhi were of the opinion that ginger can also have many beneficial effect as a home remedy in ARI [24]. Significant cultural variance might be the reason behind this.

An alarming finding in our study is that 74.4% of the mothers even from the urban area have done self-medication on their children to relieve the symptoms and sign of ARI. The popular choices in decreasing order of frequencies were anti-allergy, homeopathic medicine, paracetamol, ibuprofen, joshanda and antibiotics. However, another study in Multan showed that 58% mothers practiced self-medication on their children [23]. This evinces that mothers assume that these drugs are harmless and can be used without any adverse outcome. In this research, the use of antibiotic as self-medication was found to be 60% in the urban and 35% in rural inhabitants. In other studies, the incidence for the use of antibiotic was affirmed as 68% by Chan *et al* [25] and 46% by Bhanura *et al* [26]. The findings of this research are fully assertive to their studies. This reflects that even in urban areas the literacy and awareness rates aren't sufficient enough. Most of the mothers need proper education about the hazards of using antibiotics. However, in contrast to our findings Farhad *et al* and Paragokau *et al* have reported the use of antibiotic as 5% and 10% respectively [27,28]. This reflects the need of immediate awareness campaigns in our region.

The beneficial effect of breastfeeding in the number of children admitted for acute respiratory tract infection is widely acknowledged [29,30,31]. However, in this survey mothers were doubtful about the healthy role of breastfeeding in ARI prevention. But on the other hand, 73.4% of the urban mothers also acknowledged that bottle feeding increases the risk of ARI as well.

In a descriptive cross-sectional study carried out in Myanmar, mothers from the urban background who labelled chest indrawning as a worrisome sign constituted 76% of the sample size [8]. Contrary to their study, our survey shows that a greater percentage of mothers (79.5%) from urban areas considered indrawning of the chest as an alarming sign (Table 3) which is a primary finding because early recognition of such signs will enable mothers to seek early professional medical advice.

The study showed that KAP of mothers, in general population, is not satisfactory but if proper impartment of health education to the target population is undertaken by the concerned authorities, the morbidity and mortality rate of younger population will decrease appreciably.

Limitations and Future Recommendations

The pivotal strength of this research lies in it highlighting the inadequate knowledge of mothers regarding ARI. However, there were some limitations too. This study was conducted in a tertiary care hospital where most of the mothers had either primary education (52.5%) or no education at all (28.4%). So, the relationship between knowledge, attitude, and practices of mothers and their education cannot be predicted from this study. Future researchers should use stratified random sampling to explore the in-depth relation of the said two variables.

The authors recommend that there is a dire need to highlight the proper management and preventive measures of ARIs in the primary health care plan, possibly by utilizing visual and audio facilities. A lot of mothers commonly practice the use of antibiotics that are although labelled safe, but their side effects, resulting from overuse, should not be ignored and hence need to be highlighted as well. Moreover, recent studies showed that a majority of the urban population prefers private practitioners as their health caretakers [8]. So, a training program for general practitioners is of utmost importance. In this regard, the use of mass media for communication could help in reaching out remote areas but live interactive sessions hold their importance in clearing out queries.

CONCLUSION

In conclusion, this study disclosed insufficient information of mothers concerning the signs of ARI, environmental effect on ARI, disturbing factors and convolutions. Their attitude towards ARI was appropriate, however the practices being accompanied were not. Proper literacy rate showed to have an extra constructive impact on the knowledge, attitude, and practices of mothers. Notwithstanding the fact, a sufficient wide variety of participants have by no means heard about ARI and more than half were not aware of the pervasiveness of those illnesses in Pakistan. Believes about the causes of ARI ranged from micro-organisms to airborne disorder, Poor hygiene, and exposure to smoke and dirt, winter season, poverty, and no immunizations. . Using inappropriate remedies For ARI need to be discouraged. Effective ARI control program need to be based on understanding the prevailing knowledge, beliefs and practice of the mothers. As a consequence, the countrywide ARI manage program in Pakistan should Consider these finding when developing policy for ARI. There is also need for research on the efficacy and any possible adverse effect of identified home remedies.

Acknowledgement

The author would like to acknowledge and thank the to two house officers of Peads ward, who helped us in data collection and all the participants for giving their precious time to the study.

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