

The Knowledge, Attitude and Practice of Mothers Regarding Acute Respiratory Tract Infection in Children

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Control of acute respiratory infections (ARI) is a major problem of public health in developing countries. Effective health education programs are required to be designed in accordance with knowledge, attitude and practice (KAP) of society. The purpose of this study was to investigate the KAP of mothers in children's acute respiratory infections. This was a cross-sectional study conducting on 255 mothers. The data were collected through using interviewer-administered questionnaire in Dec 2010. The most common treatment adopted by mothers for ARI in children was syrups and cold pills (22%). The mean value of mother's practice and the mean scores of their knowledge and attitude were high. Performance score of mothers with young children with ARI and last source of their information and knowledge and attitude scores were correlated with mother's age and nationality (Persian or Afghan). Significant relationship was not found between the mother's attitude and performance. On the other hand, attitude and performance were not related to the mother's education level and occupation. The knowledge and attitude of mothers were high and their practice was good toward ARI. Since mothers practice is related to their source of information, the designing of educational programs with regard to mothers practice is useful to improving their practice.

Key words: Knowledge, attitude and practice, Acute respiratory infections, Health education.

Acute respiratory infections (ARI) especially pneumonia caused 1.6 million children's death in 2008¹. Most children experience ARI four to six time in a year². Pneumonia is the main cause of death in children under 5 years old worldwide that is even more than the combination of AIDS, malaria and measles^{3, 4}. Although the mortality rate has declined since 1970, not all countries have benefited to the same extent; Mortality rate in children under 5 year olds with low-income

families in under developing countries are about ten times higher than their peers in developed countries⁵⁻⁷. The pneumonia is the most hazardous form of acute respiratory infections if not treated properly.

About 95% of childhood pneumonia (under 5 years old) cases are in under developed countries where the immune systems of children are weak because of malnutrition and infectious diseases. One out of five mothers cannot distinguish the pneumonia from other diseases because of their similar symptoms of such as fever, cough and hypertension⁸. There have been few studies conducted to evaluate the Knowledge, Attitude and Practice (KAP) of mothers regarding acute respiratory infections (ARI) in children. Chan *et*

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al.,⁹ suggested that approximately 59 percent of parents believed that bad weather was the main cause of acute upper respiratory tract infections of their children. However, 13 and 27 percent of the subjects related the main cause of the disease to the food and germs, respectively. Twenty eight percent of the parents believed their child needed antibiotics, and 93 percent received what they wanted for their child with acute upper respiratory tract. The results of the study indicate the incorrect KAP of mothers regarding ARI and utilizing antibiotic that lead to resistance against antibiotic drugs⁹.

The study carried out in Ethiopia showed that 64.4% of parents used traditional remedy like applying butter and herb to the chest via a massage at home¹⁰. Kapoor *et al.*,^{11, 12} showed that more than 50% of the mothers preferred to use only home remedies. In Pakistan, there is not even the concept of contagion among the mothers but they believe exposure to cold is responsible for pneumonia¹². One of the main causes of morbidity and mortality of children is the lack of mother's knowledge regarding care of children. Attitude and practice are the consequence of knowledge. Moreover, one of the main reasons is lack of insufficient women's education¹³. The health education program is only effective if designed based on KAP regarding ARI in children. mother's education is still considered as a necessity to improve school literacy as well as health literacy¹⁴.

Scheduling, preventing and treatment of ARI in children require the accurate information about Knowledge, attitude and practice of family's members. There was not any study in our county which evaluate above mention. Therefore, the present study aims to evaluate KAP of mothers regarding ARI in children.

Methodology

This is a cross sectional, carried out in Imam Zaman Health Center (Tehran, Iran) in December, 2010. The population comprised of 255 mothers attending the Imam Zaman Health Center. No parent refused to take part in this questionnaire study. The inclusion criteria was the mothers who had at least one child less than 8 years of age with the symptoms of ARI. The parents were interviewed only after taking informed consent.

The questionnaire contained identification data including name, nationality, qualification,

educational level and mother's occupation, knowledge and attitude regarding the ARI symptoms and cause.

The range of practice score was between -2 to 3. The scores -2, -1, 0, 1, 2 and 3 are assigned to very low, low, null, high and very high level of practice, respectively. Practice questions included the performance of mothers in ARI such as utilizing left over antibiotic, visiting physician, traditional remedy and breast-feeding infants.

The range of knowledge and attitude were rated from -6 to 8. The scores between -8 to -6, -3 to -1, 0, 1-4, 5 to 8 are assigned to very low, low, null, high and very high level of knowledge and attitude. These questions included the knowledge of mothers regarding ARI. For instance their knowledge of its symptoms, the ways of ARI infections and so on. In the case, that mothers mentioned several items the highest score was recorded.

Quantitative data obtained from questionnaires were analyzed using Statistical Package for Social Sciences (SPSS version 17). One-way analysis of variance (ANOVA), Spearman's Rank-Order Correlation Coefficient and T-test were used in this study.

RESULTS

The mean age of mothers was 27.61 ± 5.17 years. Fourteen children were in kindergarten level (5.5%). Ninety-six percent of mothers were housekeeper and the 50% of them were working in medicine-related occupations. Twenty-one mothers (8.2%) were Afghan and the remaining was Iranian. 56.1% of mothers had secondary school education. The educational level of 20% mothers was more than high school degree. Overall, 229 of children had ARI experience. The most common type of infection was common cold and the least common type was pneumonia. (Fig. 1)

Fifty-three mothers did not do any therapeutic action before visiting doctors. The most common actions were utilizing cold pills and syrup (22.1%), watery soup (21.6%), acetaminophen syrup (9.6%) and diphenhydramine (7.3%) while only 5% used antibiotic. Mothers mentioned the reason of these performances as a prevalence of common cold (37.6), fever (26%), rhinorrhea (12%); chest and throat pain (8.5%) and caught (4.3%). More than 50% admitted that

Table 1. Scores of knowledge, attitude and practice of mothers regarding ARI in children by career, education, field of study and nationality of mothers attending health center of Imam Zaman

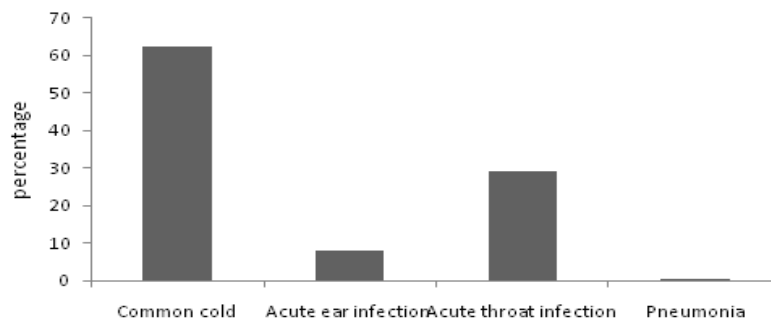
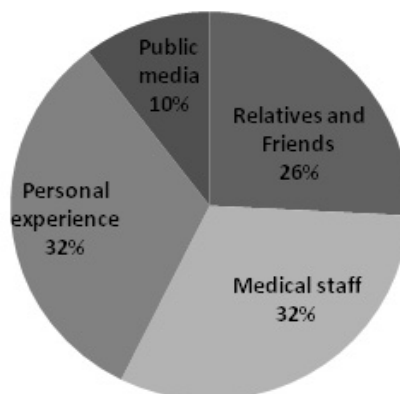
Career field	Housekeeper	Very high (5.15)	High (1.16)
	Medical-related	Very high (6.67)	Neutral (0.67)
	Non-medical- related	Very high (5.33)	High (1.33)
Mother's education	Secondary school & lower	High (4.95)	High (1.15)
	High school & Diploma	Very high (5.44)	High (1.17)
	Above Diploma	Very high (5.45)	High (1.1)
Education field	Medical-related	Very high (6.60)	Neutral (0.40)
	Non-medical- related	Very high (5.14)	High (1.17)
Mother's Nationality	Persian	Very high (5.41)	High (1.16)
	Afghan	High (2.48)	High (1.1)

they practiced based on their own experiences. The frequency of information source is presented in Fig.2. (Fig. 2)

The mean practice score regarding ARI was 1.15 (SEM=0.92). The minimum and maximum of practice score was -1 and 3 respectively. The mean knowledge and attitude was 5.17 (SEM=1.85). The minimum and maximum

score of knowledge and attitude was -3 and 8 respectively.

Statistical analyses showed that there was not any significant difference between knowledge, attitude and practice of mothers. Spearman's correlation analyses showed significant correlation between mothers' age and knowledge and attitude regarding ARI in children ($p=0.008$) while there

**Fig. 1.** Shows the frequency of different acute respiratory infection in children of mothers attending health center of Imam Zaman**Fig. 2.** Shows frequency of information sources of mothers about the measures done for ARI-infected children

was no significant correlation between the practice score and mother's age ($p < 0.05$). It can be seen in table 1 that there was significant correlation between the last occurrence of ARI in child and the practice score but there were no correlation between knowledge and attitude of mothers. (Table 1)

There was not any significant correlation between KAP of mothers and their occupation type, education level, employment status, university degrees and the number of children in the family. The mean practice score of housekeeper mothers was 1.6 while that was 1 in the employed mothers.

T-test analyses found significant relation between mothers' nationality and attitude regarding ARI ($p < 0.001$) but there was no significant difference between mothers' nationality and practice score ($p < 0.05$). There was significant difference between the type of information sources and practice score ($p < 0.001$), but there was no significant difference between information source type and the knowledge and attitude of the mothers ($p < 0.05$).

DISCUSSION

Findings of the present study demonstrate that the older mothers had more attitudes on the ARI but their practice scores were not higher than younger mothers. On the other hands, although the attitude level of employed mothers was higher, their practice was not higher than the housekeeper mothers.

The higher attitude level of employed mother is due to their higher communication in society but it does not guarantee their appropriate practice regarding ARI. On the other hand, practice scores for housekeeper mothers were relatively higher which can be attributed to their more free time.

Unexpectedly, there was not any relationship between educational level of the mothers and their attitude and practice levels. This may be because of the high level of general knowledge of society and abundance of health education programs, so that mothers with low educational level increase their KAP score and reach to the KAP score of educated mothers.

Our finding showed that although the mothers with medical education had higher levels

of knowledge and attitude, their practice score was lower, compared to the mothers with non-medical education.

Simiyu *et al.*, found that educational level influences the mothers' attitude and knowledge but do not affect practice¹⁵. Considering the nationality, Afghan mothers, as compared to Persian mothers have significantly lower scores of knowledge and attitude, but there was no significant difference of performance scores between these two groups of mothers with respect to the ARI.

Since there was a positive correlation between information resources of mothers and the corresponding scores of their practices, it is necessary to make perspective planning on the information resources towards the improvement of mothers' practices.

Organizing the educational program based on improving the practice will be beneficial. In contrast to the other studies, although the subjects of the present study were from low income families, their knowledge and attitude score was high and very high, respectively.

Previous studies conducted by different groups, (Chan *et al.*,⁹ Hossein *et al.*,¹² Deno *et al.*,¹⁶ Zaman *et al.*,¹⁷ Hadi¹⁸ and Hong *et al.*,¹⁹) showed that the mothers who had low level of knowledge and attitude, demonstrated low practice level. However, in the present study although the subjects' knowledge and attitude was high, the practice level was relatively high, which is similar to the findings of the Kapoor *et al.*'s study¹¹. On the other hand, Athumani²⁰ and Reyes *et al.*,²¹ indicated that the level of mothers' knowledge was relatively high and the level of their attitude and practice was reasonable because of training programs.

Our findings demonstrate that taking antibiotics without prescription for treatment of ARI is low while the other similar studies (Chan *et al.*,⁹ Deno *et al.*,¹⁶ Nicoist *et al.*,²² and Watson *et al.*,²³ found that the demand for antibiotics was high.

The present survey reveals that there is no function in accordance with awareness in mothers though the status of awareness and insight is desirable. One of the main reasons is weakness in training programs¹². Carzol and Grane reported that it might be difficult to change the behavior pattern among groups just via training²⁴. Thus, using healthy communications by public media

can also be useful in enhancing and promoting behavioral changes²⁵. To achieve that, United Nations International Children's Emergency Fund (UNICEF) has applied a strategy with the aim of controlling the most typical childhood diseases in developing countries by improving abilities health center staffs, health and cure systems to control disease and by enhancing function of family and society²⁶. So it is essential to design training programs focusing on the level of health system nationwide. Regarding the universality of public media, it is possible to make advantage of those resources to improve mothers' function. On the other hand, training programs at health centers should be guided to become practical.

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