Original Article

Parental knowledge and common practices regarding acute respiratory infections in children admitted in a hospital in rural setting

Kapil Bhalla[1], Ashish Gupta[2], Sanjiv Nanda[1], Shuchi Mehra[3], Savita Verma[4]

Departments of [1]Pediatrics, [3]Microbiology, and [4]Pharmacology, Pt BD Sharma PGIMS, [2]House Surgeon, Trauma Centre, Pt BD Sharma PGIMS, Rohtak, Haryana, India

Abstract

Context: In developing countries, there is paucity of data regarding knowledge and practices of parents regarding acute respiratory infections (ARIs). **Aims:** The present study was undertaken to study the knowledge and practices of parents for ARIs. **Settings and Design:** This was a prospective, cross-sectional study conducted over period of 3 months in pediatric ward of a tertiary care teaching hospital. **Subjects and Methods:** All the children admitted in pediatrics ward with complaints of ARI were included in the study. **Statistical Analysis Used:** Statistical analysis was carried out by using Statistical Package for Social Sciences software version 20. **Results:** A total of 1,752 children were enrolled in the study out of which 885 (50.51%) were males and 867 (49.49%) were females. Only 42.6% of parents answered correct answers about the proper use of antibiotics for children with ARI. Most of the caregivers (58.4%) had poor knowledge about incomplete immunization as a risk factor for developing diseases like diphtheria and pertussis. Majority of caregivers (66.3%) practice home remedies by themselves. **Conclusion:** The knowledge of caregivers/parents regarding symptoms, risk factors, and complications of ARI was adequate. Better awareness is needed for safe use of antibiotics, and caregivers shall be encouraged to minimize indoor air pollution. More awareness is required for discouraging the practice of visiting quacks as it can lead to serious complications in the child.

Keywords: Child, infection, knowledge, pneumonia, pollution, respiratory

Introduction

Acute respiratory infection (ARI) is the infection of upper or lower respiratory tract, or of adjoining structures such as paranasal sinuses, middle ear, or lung pleura.[1,2] It is considered as one of the leading causes of morbidity and mortality in children less than 5 years of age.[3,4] Viral infections account for half of the cases among those hospitalized in India. Of these, respiratory syncytial virus, influenza A, and parainfluenza virus 3 are important viruses in rural settings.[5,6] ARIs are categorized into upper respiratory tract infections (URIs) or lower respiratory tract infections (LRIs). The URIs comprises of rhinitis, sinusitis, tonsillitis, pharyngitis, laryngitis, epiglottitis, and ear infections. LRIs consist of pneumonia and bronchiolitis.[7] The various risk factors include illiteracy among parents, low socioeconomic status, overcrowding, malnutrition, lack of breast feeding, prelacteal feeds, partial immunization, indoor air pollution, early weaning, anemia, etc.[4,8-10] All these are modifiable risk factors and can be prevented by simple interventions such as proper infant feeding practices, providing proper nutrition to the child, and proper education of parents and the caregivers. The irrational use of antibiotics by parents and excessive use of radiographic and laboratory investigations further helps in

Address for correspondence: Dr. Ashish Gupta, H. No. 624, Sector 17 A, Gurugram, Haryana, India.
E-mail: ashishg19995@gmail.com

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spread of ARIs.[11] In developing countries, there is paucity of data regarding knowledge and practices of parents regarding ARIs. Hence, the present study was undertaken to study the knowledge and practices of parents for ARIs.

Subjects and Methods

The study was conducted in the Department of Pediatrics in a tertiary care hospital of North India over a period of 3 months. The ethical approval was obtained from Institutional Ethics Committee (19th of December, 2019). All the children admitted in pediatrics ward from rural areas with complaints of ARI were included in the study. The demographic details were taken from the patients such as age, gender, height, weight, immunization status, socioeconomic status, indoor air pollution, etc. The parents were given preformed self-administered questionnaire consisting of two sections. Section A comprised of questions assessing the knowledge of parents regarding ARIs, and section B comprised of questions assessing the practices of parents regarding the same. All the data were entered in Microsoft office excel 2016 analyzed using SPSSv20 software.

Results

A total of 1,752 children were enrolled in the study out of which 885 (50.51%) were males and 867 (49.49%) were females. Mean age of presentation was 1.01 ± 1.98 years. Demographic details of subjects are shown in Table 1. A total of 1,196 (68.26%) children were malnourished out of which 1,040 (59.36%) were moderately malnourished and 156 (8.9%) were severely malnourished. 96% children were immunized as per National Immunization Schedule. 36.6% households were burning firewood as combustion fuel and 54.5% had a smoker in their family, thus contributing toward indoor air pollution. History of hospitalization in last 1 year was present in 18.83% of the children. Table 2 demonstrates the awareness of caregivers toward ARI. About 98% of caregivers were correctly aware regarding presenting symptoms of ARI and only 2% showed inadequate knowledge with incorrect answers. Only 42.6% of parents answered correct answers about the proper use of antibiotics for children with ARI and most of parents (57.4%) had incorrect answers. 64.4% of caregivers had good knowledge regarding pneumonia being the most common complication of ARI. Majority of subjects (57.4%) had correct knowledge regarding consulting a physician if the child had ARI and 42.6% had poor knowledge. 66.3% of caregivers were aware of malnutrition as a risk factor for pneumonia, 70.3% were aware about indoor smoking as a risk factor for ARI. Most of the caregivers (58.4%) had poor knowledge about incomplete immunization as a risk factor for developing diseases like diphtheria and pertussis.

Table 3 demonstrates the practice pattern of caregivers toward ARI. Majority of the caregivers (56.4%) do not practice self-medication. On the other hand, most of the participated caregivers (89.1%) had positive attitude toward consulting a physician but 10.9% had poor practice. Majority of caregivers (66.3%) practice home remedies by themselves. Most of the caregivers (66.3%) had a practice of minimizing indoor air pollution as compared with 33.7% who do not do so.

Table 1: Demographic details of the subjects

Parameter	Percentage
Gender	
Male	50.51%
Female	49.9%
Nourishment	
Severely malnourished	68.26
Moderately malnourished	8.9
Normal	25.7
Overweight	1
Obese	5
Socioeconomic status	
Upper	14.9
Upper Middle	28.7
Lower Middle	41.6
Upper Lower	9.9
Lower	5
Immunization Status	
Complete as per schedule	96
Incomplete	4
Presence of smoker in home	
Yes	54.5
No	45.5
Type of combustion fuel used in home	
Firewood	36.6
LPG	63.4

Table 2: Awareness of caregivers toward ARIs

Parameter	Correct	Incorrect
ARI may present as cough, fever, wheezing, sneezing, or pain in ear, nose, and throat	98%	2%
Pneumonia is a complication of ARI	64.4%	35.6%
Antibiotics can be used as self-medication for treatment	57.4%	42.6%
Pediatrician shall be consulted in case of ARI	57.4%	42.6%
Malnutrition can lead to pneumonia	66.3%	33.7%
Indoor smoking, burning of fuels (for cooking) is a risk factor for ARI	70.3%	29.7%
Immunization is important for prevention of diseases like diphtheria and pertussis	41.6%	58.4%

Table 3: Practice pattern of caregivers toward ARIs

Parameter	Correct	Incorrect
I visit physician whenever my child develops fever and cough	89.1%	10.9%
I give medications at home without consulting a doctor	43.6%	56.4%
I often use home remedies to treat ARI	66.3%	33.7%
I try to minimize indoor air pollution	66.3%	33.7%

Discussion

ARI in children contributes for about 3.9 million deaths worldwide annually. In developing countries like India, pneumonia incidence is high due to high prevalence of malnutrition, low birth weight,

and presence of indoor air pollution.[12,13] Malnutrition, indoor air pollution, low socioeconomic status, and low immunization are key risk factors for ARI.[12,14] In this study, 68.26% children were malnourished, and children belonging to low socioeconomic status were more malnourished than higher socioeconomic status. These findings were similar to a study by Stalin *et al.*[15] 36.6% households were burning firewood as combustion fuel and 54.5% had a smoker in their family, thus contributing toward indoor air pollution. Many studies have suggested indoor air pollution as a major risk factor for ARI,[12,16,17] therefore we assessed the knowledge of parents regarding indoor air pollution as a risk factor, and to our surprise 70.3% parents had the knowledge regarding the same. These findings are concordance with a study by Saldanha *et al.*[18] Biomass fuels and other fuels like kerosene oil are major contributing factors to indoor air pollution. The mechanism is the injury caused to local defenses of respiratory tract because of toxic pollutants arising from incomplete combustion of these fuels.[12] Therefore, use of cleaner fuels like LPG shall be promoted for which mother's education is very important.

In this study, 57.4% of the caregivers believed that antibiotics can be self-administered for treatment of ARI. In studies by Chan *et al.*[19] and Bhanwra *et al.*,[20] misuse of antibiotics has been reported. The knowledge of caregivers regarding consultation for physician was adequate (57.4%). This was in contrast with findings by other researchers.[11,21] Knowledge of symptoms of ARI was very good among caregivers (98%), which was higher than other studies.[22] Use of self-medication was found (43.6%) in this study which is similar to other studies.[23,24] Home remedies were practiced by 66.3% of the parents in our study. This was slightly higher than other studies.[11,24-26] 66.3% of parents showed a healthy practice of minimizing indoor air pollution. 89.1% parents agreed that they visit a physician whenever child presents with symptoms such as cough, fever, etc. On further interviewing it was noted that most of the parents visit an unregistered medical practitioner (quacks) which is a dangerous practice. Therefore, parents' education and socioeconomic status play a very important role toward consulting a registered medical practitioner. Also, government and all other stakeholders shall take necessary steps for strengthening the primary healthcare system so as to discourage the practice of visiting quacks and thereby controlling serious complications and misuse of antibiotics.

Conclusion

The knowledge of caregivers/parents regarding symptoms, risk factors, and complications of ARI was adequate. The parents in the study had good practice of consulting a physician whenever child develops symptoms of ARI. Better awareness is needed for safe use of antibiotics, and caregivers shall be encouraged to minimize indoor air pollution. More awareness is required for discouraging the practice of visiting quacks as it can lead to serious complications in the child.

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Conflicts of interest

There are no conflicts of interest.

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