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## Original Article

# Assessment of Upper Respiratory Tract Infection Among the School Going Children

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***ABSTRACT***

***Introduction:*** *Acute respiratory infection (ARI) is one of the commonest causes of death in children in developing countries. They are responsible for 4 million deaths each year, and two-thirds of these deaths are in infants (especially young infants). The study aimed to analyze the pattern of upper respiratory infections among the school-going children treated at the combined military hospital Dhaka.* ***Methods & Materials:*** *This descriptive type of cross-sectional study was conducted at the OPD of CMH Dhaka and CWC Dhaka, Bangladesh for a period of 25 March 2012 to 30 June 2012. A total of 120 subjects were selected as per inclusion criteria.* ***Result:*** *In this study, the Greatest number of respondents (46.7%) had tonsillitis, (28.3%) pharyngitis, and the next significant number (15.0%) had epiglottitis, and the rest 6.7% and 3.3% had laryngitis and nasopharyngitis respectively.* ***Conclusion:*** *The diseases which were found to be prevalent among the children were tonsillitis, pharyngitis, epiglottitis, nasopharyngitis, and laryngitis. In this study, the factors which were found to be high among the respondents were poor immunization, poor socioeconomic conditions, indoor air pollution, indoor smoking, and kaccha housing.*

***Keywords:*** *Respiratory tract, Tonsillitis, Pharyngitis, Infection*

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## INTRODUCTION

Acute respiratory infection (ARI) is responsible for 4 million deaths each year, and two-thirds of these deaths are in infants [1]. Most children have about four to six episodes of acute upper respiratory tract infection each year [2]. Acute upper respiratory infections result in few deaths in children but cause considerable disability. Otitis media is the leading preventable cause of deafness in developing countries and is a significant contributor to developmental and learning problems in children [3]. Moreover, pneumonia has been a neglected problem until very recently. It was said that antibiotics might not be an effective treatment against pneumonia because patients are often weakened by conditions such as chronic malnutrition and parasitic infections [4]. AURI that becomes fatal is almost always due to pneumonia [5]. Children who are severely malnourished have a much greater risk of dying from pneumonia than other children [6]. Validated IMCI guidelines were developed for the need for referral in young infants and children with pneumonia in Bangladesh. The study aimed to analyze the pattern of upper respiratory infections among the school children attending at combined military hospital Dhaka.

## OBJECTIVES

### General Objective

- To find out the pattern of upper respiratory infections in children.

### Specific Objectives

- To find out the occurrence of different types of upper respiratory tract infections among children.
- To find out the immunization status among the respondents.
- To find out the socio-demographic characteristics.

## METHODS & MATERIALS

This descriptive type of cross-sectional study was conducted at the OPD of CMH, Dhaka cantonment, and CWC Dhaka, Bangladesh. The study was conducted for the period of 25 March 2012 to 30 June 2012. All the URI cases of primary and secondary school children reported to CMH Dhaka during the study period were the study population. A total of 120 patients who received indoor treatment from CMH Dhaka during the study period were purposively selected as the sample size. Data were processed and analyzed by SPSS 19 version.

### Inclusion Criteria

- Patients who attended the hospital with signs and symptoms of upper respiratory infection.
- Patients who had given consent.

### Exclusion Criteria

- Patients who were unable to answer the criteria question.
- Patients who were affected with other chronic diseases etc.

## RESULTS

A total of 120 cases were studied. Most of the respondents (35.0%) were 5-7 years age group, 26.7% of the respondents were 8-10 years age group followed by 23.3% of the respondents in were 11-13 years age group. The minimum age of respondents was 5 years and the maximum was 15 years **(Table I).**

**Table I : Distribution of respondents by their age and sex group (N=120)**

| Age group (years) | Sex of the children | | Total No. (%) |
|---|---|---|---|
| | Male No. (%) | Female No. (%) | |
| 5-7 | 22(18.3) | 20(16.7) | 42(35.0) |
| 8-10 | 14(11.7) | 18(15.0) | 32(26.7) |
| 11-13 | 10(8.3) | 18(15.0) | 28(23.3) |
| 14-16 | 06(5.0) | 12(10.0) | 18(15.0) |
| **Total** | **52(43.3)** | **68(56.7)** | **120(100.0)** |

Most of the respondents (55.0%) numbers of a living room were more than 3 and 41.7% had 2-3 living rooms in number **(Figure 1).**

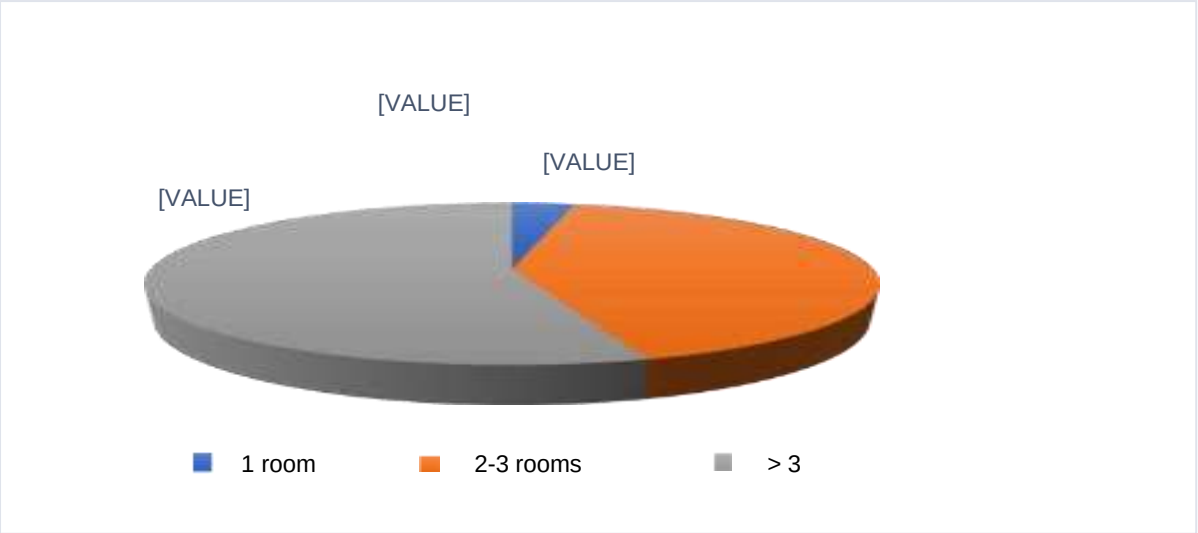


**Figure 1:** Distribution of respondents by their number of living rooms (N=120)

Most of the respondents (45.0%) complained during admission of cough/cold, followed by (31.7%) fever, and the rest (1.7%) complained about chest in the drawing **(Figure 2).**

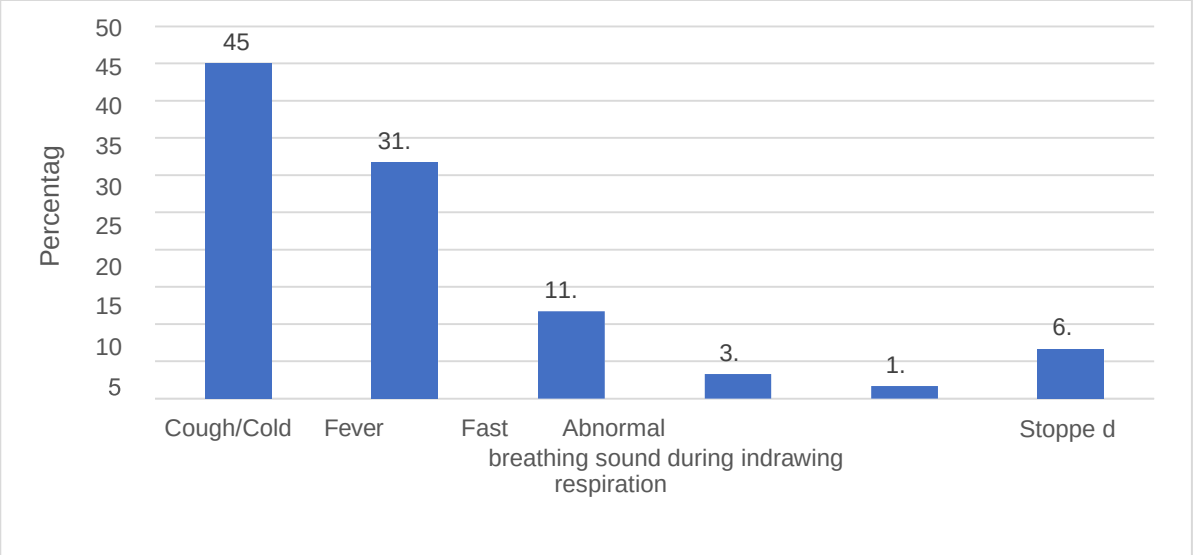


**Figure 2:** Distribution of respondents by their complaints during admission (N=120)

Greatest number of respondents (46.7%) had tonsillitis, followed by (28.3%) pharyngitis, and the next significant number (15.0%) had epiglottitis, and the rest 6.7% and 3.3% had laryngitis and nasopharyngitis respectively **(Figure 3).**

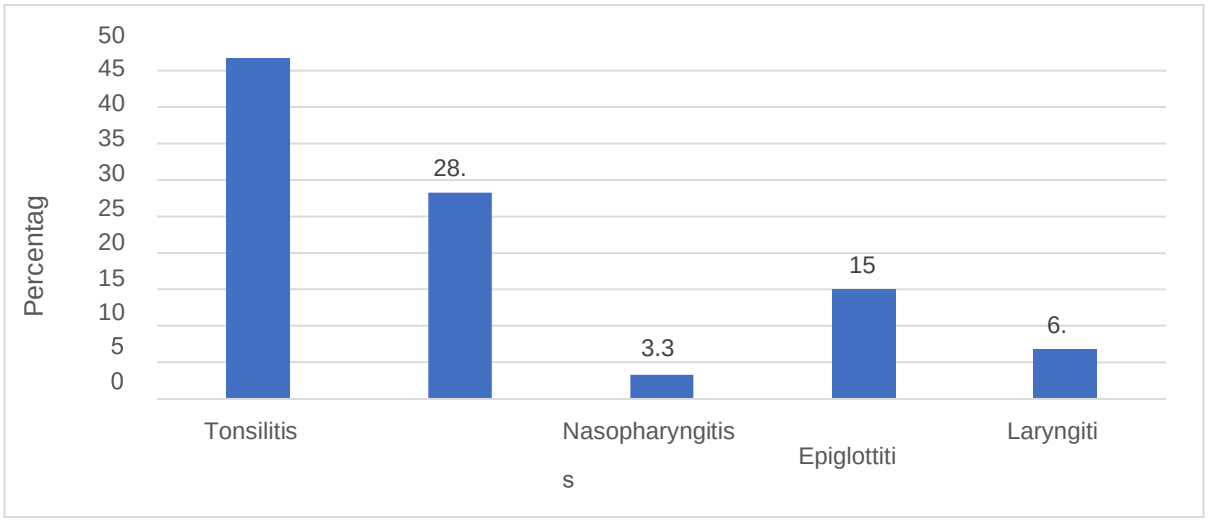


**Figure 3:** Distribution of respondents for the reason of getting admission to the hospital (N=120)

This study showed that most of the respondents (46.7%) illness was tonsillitis while getting admission to the hospital whose house was kaccha **(Table II).**

**Table II:** Distribution of respondents by their illness and condition of house (N=120)

| Illness | Condition of house | | | Total No. (%) |
|---|---|---|---|---|
| | Pacca No. (%) | Semi Pacca No. (%) | Kaccha No. (%) | |
| Tonsilitis | 40(40.81) | 12(66.67) | 04(100) | 56(46.7) |
| Pharyngitis | 30(30.61) | 04(22.22) | 00(0.0) | 34(28.3) |
| Nasopharyngitis | 04(40.81) | 00(0.0) | 00(0.0) | 04(3.3) |
| Epiglottitis | 16(16.32) | 02(11.11) | 00(0.0) | 18(15.0) |
| Laryngitis | 08(8.16) | 00(0.0) | 00(0.0) | 08(6.7) |
| **Total** | **98(81.7)** | **18(15.0)** | **04(3.3)** | **120(100)** |

Most of the respondents' illness was tonsillitis (46.7%) while getting admission to the hospital and out of them 47.16% did not complete immunization according to the EPI schedule **(Table III).**

**Table III:** Distribution of respondents by their illness for getting admission to the hospital and infant complete immunization according to EPI schedule (N=120)

| Illness | Infant complete immunization according to EPI schedule | | Total |
|---|---|---|---|
| | No No. (%) | Yes No. (%) | |
| Tonsilitis | 50(47.16) | 06(42.8) | 56. (46.7) |
| Pharyngitis | 34(32.07) | 00(0.0) | 34(28.3) |
| Nasopharyngitis | 04(3.77) | 00(0.0) | 04(3.3) |
| Epiglottitis | 10(9.43) | 08(57.14) | 18(15.0) |
| Laryngitis | 08(7.54) | 00(0.0) | 08(6.7) |
| **Total** | **106(88.3)** | **14(11.7)** | **120(100)** |

This present study also showed that most of the respondents who had smoking status in the living room (47.5%) suffered more from tonsillitis (46.7%) **(Table IV).**

**Table IV:** Distribution of respondents by their illness for getting admission to the hospital and smoking status in the living room(N=120)

| Illness | Smoking status | | Total |
|---|---|---|---|
| | No (%) | Yes (%) | |
| Tonsillitis | 18(45) | 38(47.5) | 56(46.7) |
| Pharyngitis | 12(30) | 22(27.5) | 34(28.3) |
| Nasopharyngitis | 00(0.0) | 04(5.0) | 04(3.3) |
| Epiglottitis | 08(20) | 10(12.5) | 18(15.00 |
| Laryngitis | 02(5.0) | 06(7.5) | 08(6.7) |
| **Total** | **40(33.3)** | **80(66.7)** | **120(100.0)** |

## DISCUSSION

According to the site of infection, acute upper respiratory tract infections include common cold, pharyngitis, and otitis media and acute lower respiratory tract infections include epiglottitis, laryngitis, nasopharyngitis, bronchitis, bronchiolitis, and pneumonia [7]. In developing countries, there has been a very slow reduction in specific childhood mortality in the last few decades [8]. Concerning the fatality in different countries which expresses the frequency of affected children dying from pneumonia and other acute respiratory tract infections, it will be seen that the case fatality ratio ranges from 2.7% to 12.3% [9]. Registered death rates from influenza and pneumonia in children are often 20-50 times higher in developing countries than in developed countries due to socioeconomic conditions which were seen in this study as well [10]. 8 out of 11 studies that reported ARI incidence found that children had an average of 5 to 7 episodes per year [11]. With the financial assistance provided by the research program of the Board of Service Technology for International Development (BOSTID) investigations from 10 countries studied the epidemiology of acute respiratory infections (ARI) among young children (0-59 months old) on basis of some coordinated data which were quite relatable with the present study [12]. Regarding the annual incidence rate, it was between 30%-40% among children of 5 years old in urban areas of the United States whereas it appeared to be at least double in urban areas of developing countries [13]. a study showed infectious diseases and AURI are the main causes of mortality and malnutrition in many countries [14]. Numerous studies have been conducted on ARI in the past few years. The understanding of the ARI problems, in general, has been significantly progressing [15].

### *Limitations of The Study*

The study was conducted in two hospitals with a small sample size. So, the results may not represent the whole community.

## CONCLUSION

The diseases which were found to be prevalent among the children were tonsillitis, pharyngitis, epiglottitis, nasopharyngitis, and laryngitis. In this study, the factors which were found to be high among the respondents were poor immunization, poor socioeconomic conditions, indoor air pollution, indoor

smoking, kaccha housing.

## RECOMMENDATION

The socioeconomic conditions of the family should be improved through effective health education in the community. EPI program should be launched more effectively. Due attention should be given to indoor air pollution and health care facilities.

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