Original Paper

Risk Factors of Upper Respiratory Tract Infection among Children: A Case Study at Combined Military Hospital, Dhaka

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Abstract

The children constitute a large proportion of the total population of Bangladesh are a vulnerable or special risk group, deserving special health care as the child mortality and morbidity risks are much higher than older age. This descriptive type of cross-sectional study was carried out at Combined Military Hospital, Dhaka Cantonment, Dhaka during first week of July 2024 to last week of December 2024 with an aim to find out Risk Factor of Upper Respiratory Tract Infection among Under Five Children. A total of 71 children were purposively selected and data was collected by administering semi-structured questionnaire. Out of total 71 respondents maximum age 26(36.6%) of the children were in between 1-10 months and minimum age 4(5.6%) of the children were in between 51-60 months. The present study revealed that among all respondents' maximum educational level of respondents 22(31.1%) were HSC. According to monthly family income, most of the respondents 28(39.4%) monthly family income were 21000-30000/- Taka. Considering the seasonal variation, most of the children 43(60.6%) had suffered due to seasonal variation. The present study depicted that most of the children 57(80.3%) were completed their vaccination according to EPI schedule. It was evident from the study among the respondents 66(93.01%) had well lighted facilities. This study depicts that minimum of respondents' family members 17(23.9%) were smoker. The present study showed that among the URTI cases, there were 11(10.9%) malnourished children. (Bezerra et al. 2011)

Keywords

Respiratory Diseases, Children, Acute Respiratory Tract Infections (ARTI), Upper Respiratory Tract Infections (URTI), and Lower Respiratory Tract Infections (LRTIs).

1. Introduction

Upper respiratory tract infection (URTI) is one of the most frequent diseases observed at centers for pediatric health care. The incidence and prevalence of ARIs are a great burden in low and middle-income countries. A large portion of children with respiratory infection attended in health centers. These infections tend to be even more frequent in urban communities then the rural areas. Acute respiratory tract infections are heterogeneous and complex group of diseases caused by a wide range of pathogens in which the anatomic sites extend from the pharynx to the alveoli. Acute respiratory tract infections are classified as upper respiratory tract infections (URTIs) and lower respiratory tract infections (LRTIs). (Sultana et al., 2019) The upper respiratory tract consists of the airways from the nostrils to the vocal cord in the larynx including the para nasal sinuses and the middle ear. The lower respiratory tract covers the continuation of the airways from the trachea and bronchi to the bronchioles and the alveoli. (Rahman et al., 1997)

The mode of transmission of most ARIs is through droplets, infectious respiratory aerosols, or contact with others with an infection. Acute upper respiratory infections are among the most common infections in humans, especially in under-five children. The major burden of disease from acute lower respiratory infection involves pneumonia and bronchiolitis, which are caused by bacteria respiratory viruses. The problem of ARI is greater among children under 5 years of age because of their anatomical structure, which makes them more susceptible to infection, ongoing lung development, relative immune immaturity, high risk of exposure to infection, breathing closer to the ground, and increased air intake. Globally, ARI in children was responsible for an estimated 3.9 million deaths in 2012 with 98% of these deaths due to lower respiratory tract infections. On average, under five children suffer about 4-5 episodes of ARI per year. ARI is responsible for approximately 30-50% of visits to health facilities and accounts for 20-40% of under-five hospital admission. From an estimated 10.4 million deaths among under five children worldwide, 73% were attributable to ARIs. ARI is a major cause of morbidity and mortality in developing countries, especially in under-five children. (Berman, 1991) Annually, ARIs cause approximately 1.9 million deaths in children under 5 years of age, with over 70% of these deaths occurring in Africa and Asia. The mortality rate associated with ARI is 2-6 times higher in developing countries as compared to developed countries. (Peerapur, 2008)

The incidence of URTI is only related to cold air temperature when viruses are free to move around a large population of susceptible host. Breathing cold air will not only chill the nasal airway but also cause some drying of the airway as cold air is dry and will have a drying effect on the airway that may cause upper respiratory tract infections. Breathing cold air especially during exercise when the nasal air flow is increased, will cool and dry the nasal mucosa and act as a nasal irritant. The nasal irritation may lead to acute symptoms similar to common cold with sneezing, nasal congestion and runny nose. (Jain, Lodha, & Kabra, 2001)

Clinicians and epidemiologist thought that the control of respiratory infections did not deserve high priority because of the difficulties involved in preventing and managing these infections. (Savitha et al.)

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It was said that antibiotics might not be effective treatment against pneumonia because patients and that a wide variety of viruses and bacteria are associated with pulmonary infection making it impossible to identify the specific etiological agent in each patient. At most one quarter of the pneumonia cases in children can be prevented by the measles and pertussis vaccines including in the immunizations schedule of the Expanded Programmer on Immunization. (Hassen et al.)

Information on seasonal variability would be helpful to create an extra awareness among the community health professionals including physician and nurse. Preventive measures including personal, house hygiene, cleanliness and proper ventilation may be adopted across the peak ARI season. Other preventive measures include avoiding crowded public place and making a habit of frequent hand washing etc. (Florey et al., 1979)

Incidence of respiratory infections cannot be reduced without an overall increase in social and economic development. But enormous evidences have shown various measures to reduce this disease mortality. Every reduction in death due to ARI would give an incremental benefit toward achieving the Millennium Development Goal (MDG-4). Final step toward control of ARI would be commitment to implement this proven and evidence-based interventions. (Ferdous 2011)

Definition: Acute Respiratory Tract Infections (ARTI) among children is with any one or various combination of clinical manifestations like common cold, having a running or blocked nose, cough, sore throat, noisy and rapid breathing pattern, child reluctant to feeding and or drinking and in drawing of the chest. ARI is considered as one of the major public health problems and it's recognized as the leading cause of mortality and morbidity in many countries. The biggest problem for development countries is the mortality from ARI in children less than five years of age. It is estimated that, among global ARI mortality about 40% account from Bangladesh, India and Nepal.

Definition of the International classification of health problem in primary care (ICHPPC - 2) which defines Upper Respiratory Tract Infection (URTI) as the acute inflammation of nasal or pharyngeal mucosa in the absence of other is specifically defined respiratory infection. (Alemayehu et al., 2017)

Clinical manifestations: The clinical features of ARI depend upon age of the children, site and severity of infections, causative organisms, general health and associated medical conditions. Common manifestations of ARIs are nasal discharge (watery or mucoid), cough, fever, malaise, anorexia, sore throat, irritability, chest pain, chills, tachycardia, respiratory distress, ear problems etc. Upper respiratory infections may present as dry cough with post nasal discharge, purulent nasal discharge and inflammation of tonsils, pharynx and glands.

Children are our future. The development of children is basically affected by what happens to their health status during early years of life. Investing in children health and development means investing in the future of nation. The present study had highlighted the burden and public health problem of ARI among under 5 children. Estimation of the global burden of child mortality attributable to ARI has played a crucial rule in refocusing the attention of researcher and policy makers on the importance of maintaining

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optimal maternal – child health for promoting neonatal, infant and child survival, including the prevention of mortality. (Eccles & Wilkinson, 2015)

Acute respiratory tract infection is considered as one of the major public health problems and it is recognized as the leading cause of mortality and morbidity in many countries. The biggest problem for developing countries in the mortality from ARI in children less than five years of age. It is estimated that, among global ARI mortality about 40% accounts for Bangladesh, India and Nepal.

Acute respiratory infections accounts for 20-40% of outpatient and 12-35% of inpatient attendance in a general hospital. The vast majority of acute upper respiratory tract infections are caused by viruses. About 15% of the episodes may be due to Group A beta hemolytic streptococcus (GABS). (Bulla & Hitze, 1978)

2. Conceptual Framework

Following of study on risk factors of upper respiratory tract infection among the under five children attending at CMH, Dhaka is presented diagrammatically for better understanding.

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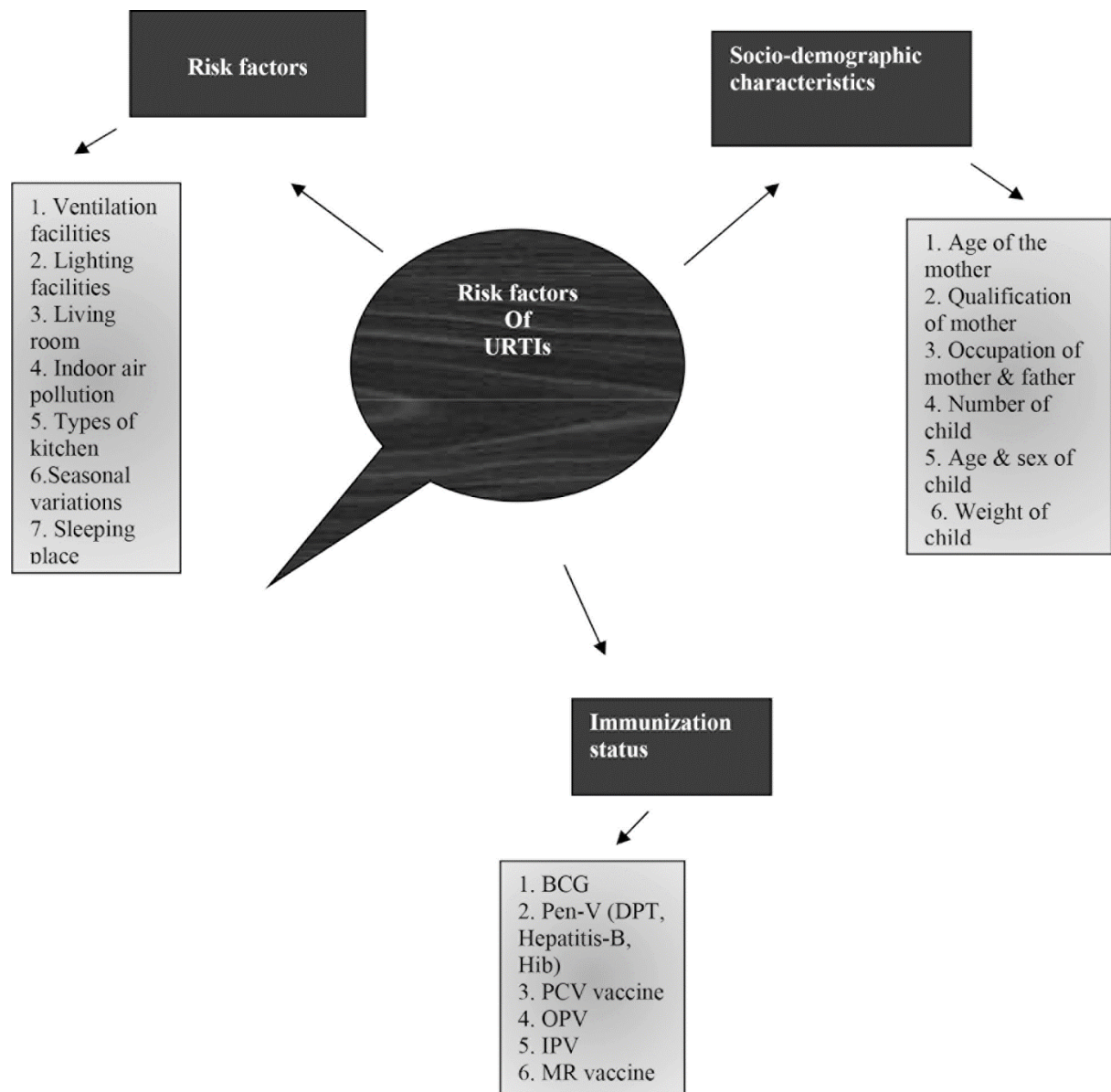
Figure 1. Conceptual Framework Illustrates the Concept of Study on Risk Factors of Upper Respiratory Tract Infection among under Five Children

3. Research Methodology

Study design: This was a descriptive type of cross-sectional study.

Study place: The study was carried out pediatric ward, child and ENT OPD at CMH, Dhaka cantonment. CMH Dhaka is the largest tertiary level military hospital in our country. In the pediatric ward children are admitted for special observation and care during their illness and also for treatment of URTI. Availability of children mother made this hospital a good choice for conduct this study. Moreover, it is within the Dhaka cantonment and nearer to AFMI, for which it is convenient for the researcher to conduct this study. This is also an educational and research institute.

Study period: The study was conducted from July 2024 to December 2024.

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Study population: This study population was under five children with URTI cases attending at Combined Military Hospital, Dhaka. And the respondents were mother of under five children.

Selection criteria of study population: Following criteria were used to select the study population.

Inclusion Criteria: All sick children those who suffered from URTI and attended at CMH, Dhaka for treatment.

❖ The age of sick children was under five.

❖ Both sexes.

❖ Sample included the respondents who gave consent and were willing to participate in this study.

Exclusion Criteria:

❖ The children age above five years.

❖ The children who were severely sick.

❖ The parents who are declined to give interview

Sample size:

When we want to measure any proportion- $n = Z^2pq/d^2$

Here,

n=Sample size

Z= The value of standard variate at a given confidence level, that is 1.96. p= What we are trying to estimate, for most conservative value, that is40%. q= 1-p

d= Degree of acceptable error, that is 0.05. So,

$n = Z^2pq/d^2$

$= (1.96)^2 \times (40\%) \times (1-40\%)/(0.05)^2$

$= (3.8416) \times (0.4) \times (0.39)/(0.0025)$

$= (0.5992896)/(0.0025)$

$= 239.7$

In the present study, minimum sample size was 239. But due to shortage of time for my convenience 70 sample sizes were taken. On the basis of research design and selection criteria of the sample a total of 70 patients who received indoor and outdoor treatment from CMH, Dhaka during data collection period were purposively selected as a sample size.

Sampling Technique: In this study, non-probability purposive sampling technique was followed for selection of samples.

Research Instrument: A semi-structured questionnaire was formulated and this questionnaire was used for data collection. These questionnaires were pretested among under five children with URTI attending at Kurmitola General Hospital, Dhaka. Then a set of questionnaires was finalized for data collection. The instrument was prepared on the basis of variables that implicit in the objectives.

Research approach: After getting the approval of the research proposal from protocol committee of AFMI, a formal application with all relevant paper was submitted to the ethical committee of CMH for

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collecting data from outpatient department & pediatric ward-2 of CMH Dhaka. The ethical committee have written permission to collect data.

4. Data Collection Procedure

Ensuring and explaining the purpose of the study to the respondents and obtaining verbal consent, the Novice researcher face to face interviewed respondents by asking question in Bengali. It was made clear to the respondents that they were at full liberty to answer any question or not. They were given complete assurance on some ethical points of the view that under no circumstances, finding to the study will be disclosed to any unauthorized person or anybody except for the purpose of the study.

5. Data Processing and Analysis

Each questionnaire was checked for its completeness, correctness and internal consistency to exclude missing or inconsistent data after interview. All the data were checked and edited then coded and analyzed by using 'Statistical Package for the Social Sciences (SPSS) version 23'. By the researchers herself an analysis plan was developed keeping in view with the objective of the study. Data was presented in tables, graphs and charts.

Sample unit: Under five children.

Ethical implication: The study needed to collect some personal information from the respondents. So, before collection of data and explanation was need to respondent about the purpose of the study. Informed consent was taken from the respondents. The respondents had the right to refuge and withdrawn herself from the study at any time. Confidentiality of the respondent was maintained. Due to importance was given on ethical aspect. It was ensuring that respondent's physical, mental and social harm will not done.

6. Findings of the Study

This was a cross - sectional study conducted among the 71 children who attended for treatment in the indoors and out patient department of child of CMH Dhaka to find out the disease pattern. A total respondent were selected purposively. The aim of study was to identify the risk factors of upper respiratory tract infections among the under five children, to assess the immunization status of the children and to find out the socio demographic characteristics of the respondents .This study was aimed also to find out the environmental conditions of household such as ventilation facilities, sanitation, family size and smoking and also to find out selected socio- demographic conditions of the children .Data were collected, analyzed and processed using the appropriate statistical procedures (SPSS version 22) and any relationship presented in this chapter through tables, charts and graphs to find out whether there was any relationship present between disease profile. All the findings are presented as follows: A. Information related to socio-demographic characteristics. B. Information related to risk factors of upper respiratory tract infection. C. Information related to selected immunization status.

Part-I: Socio-demographic information

Table 1. Distribution of Children by age (n=71).

Age (in months)	Frequency	Percent
1-10	26	36.6
11-20	17	23.9
21-30	9	12.7
31-40	4	5.6
41-50	11	15.5
51-60	4	5.6
Total	**71**	**100.0**

Mean,± SD =20.66,±17.56 months

Table shows that maximum 26 (36.6%) were within the age group of 1-10 months, followed by 17 (23.9%) were within the age group of 11-20 months, 11 (15.5%) were within the age group of 41-50 months, 9 (12.7%) were within the age group of 21-30, 4 (5.6%) were within the age group of 31-40 months, and 4 (5.6%) were within the age group of 51-60 months. The mean of children age is 20.66 with SD=17.56 months.
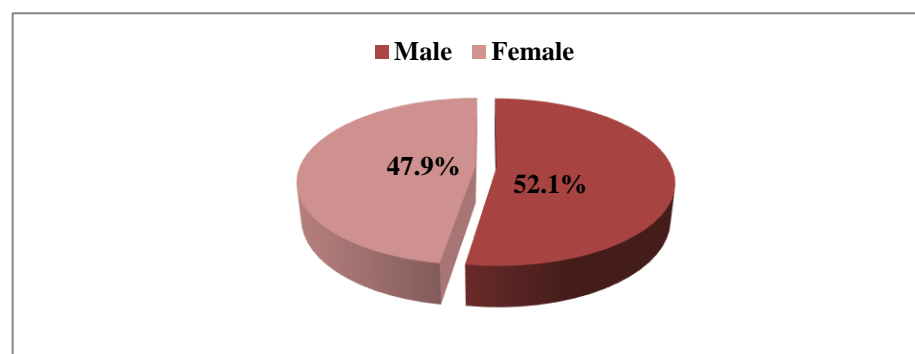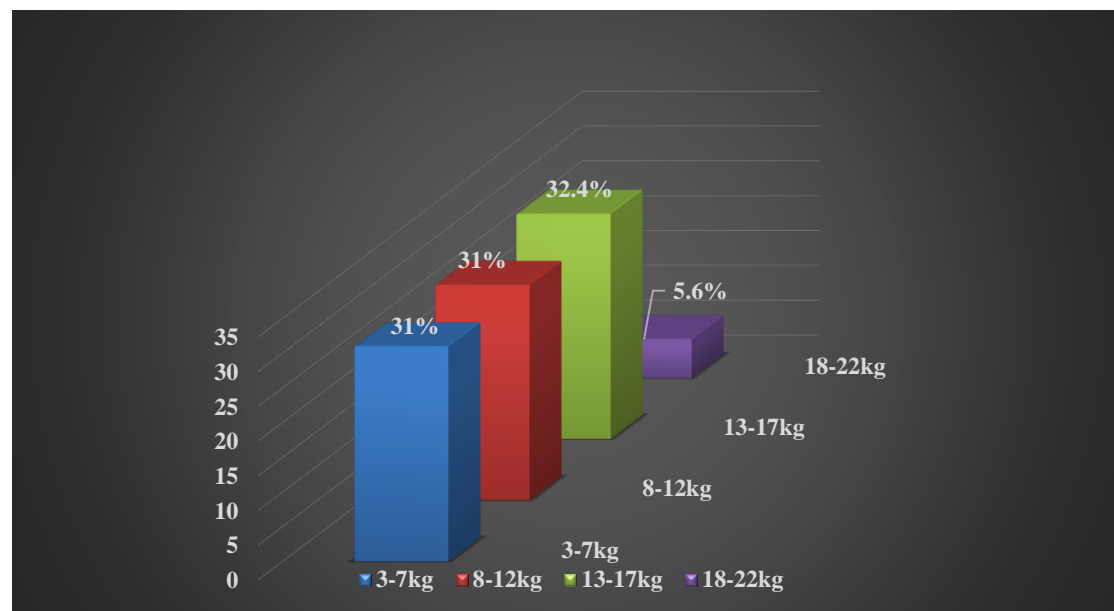
Table 2. Distribution of children by sex (n=71)

Table shows that most of the child were male 52(52.1%) and rest 48(47.9 %) were female.

Table 3. Distribution of Children by Weight (n=70)

It was evident from the study that, most of the children 32(32.4%) weight were 13-17 kg, 31(31.0%) children weight were 8-12 kg, 31(31.0%) children weight were 3-7 kg and 6(5.6%) children weight were 18-22kg.

Table 4. Distribution of Respondents by Religion (n=71)

Religion	Frequency	Percent
Islam	67	94.4
Hinduism	4	5.6
Total	**71**	**100.0**

Figure shows that most of the respondents 67 (94.4%) were Islam and 4 (5.6%) were Hinduism.
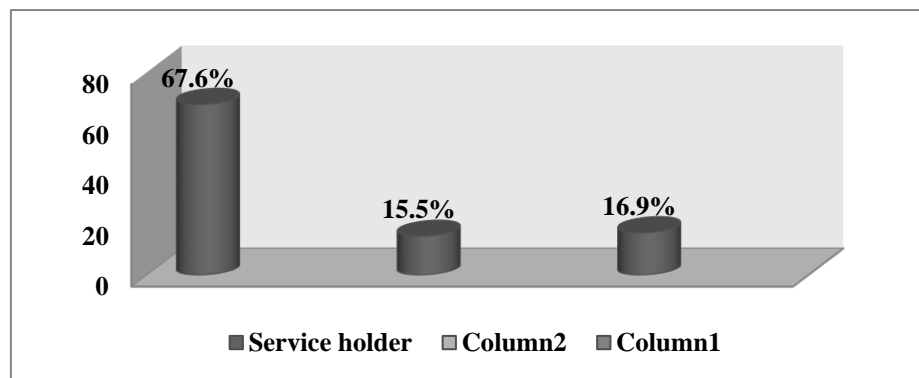
Table 5. Distribution of Respondents by Occupation (n=71)

Table depicts that most of the respondents' husbands were service holder 68 (67.6%), business 16 (15.5%) and both 17(16.9%).
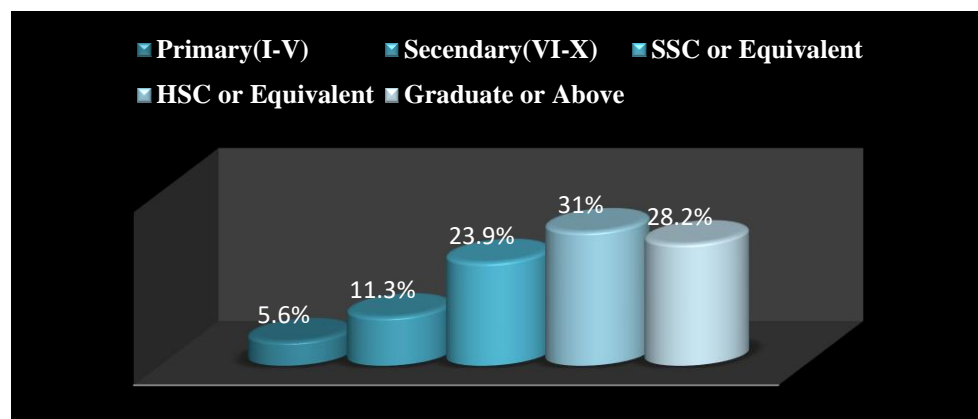
Table 6. Distribution of the Respondents by Education (n=71)

Table depicts that most of the respondents 31(31.0%) were HSC or equivalent, 28(28.2%) were Graduate or above 24(23.9%) were SSC or equivalent, 11(11.3%) were Secondary and 6(5.6%) were Primary.

Table 7. Distribution of Respondents by Family Income (n=71)

Income (BDTK)	Frequency	Percent
10000-20000	9	12.7
21000-30000	28	39.4
31000-40000	18	25.4
41000-50000	13	18.3
51000-60000	2	2.8
61000-70000	1	1.4
Total	**71**	**100.0**

Mean, ± SD= 34338.03, ±11591.800Tk

Table shows that most of the respondent's 28 (39.4%) monthly family income were 21000-30000/- Taka, 18 (25.4%) respondent's income were 31000-40000/-Taka, 13 (18.3%) respondent's income were 41000-50000/-Taka ,9 (12.7%) respondent's income were 10000-20000/- Taka ,2(2.8%) respondent's income were 51000-600000/- Taka, 1(1.4%) respondents' income were 610000-70000/- Taka.

Table 8. Distribution of Respondents by Living Room (n=71)

Living room	Frequency	Percent
2-4	60	84.5
5-7	11	15.5
Total	**71**	**100.0**

Mean, SD=3.18,1.257

Majority 60(84.5%) had 2-4 living rooms and rest of the part 11(15.5%) had 5-7 rooms.

Table 9. Distribution of Respondent by Family Members

Family members	Frequency	Percent
2-4	41	57.7
5-7	14	19.7
8-10	14	19.7
11-13	2	2.8
Total	71	100.0

Table represent that most of the respondents 41(57.7%) family members were 2-4, 14(19.7%) were 5-7, 14(19.7%) were 8-10 and rest of the 2(2.8%)

Part-II: Information related to risk factors of URTI

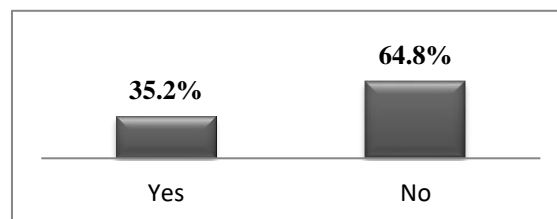**Table 10. Distribution of Respondents' House by Indoor Air Pollution**

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Table shows that most of the respondents house65(64.8%) had not indoor air pollution and 35(35.2%) had indoor air pollution.

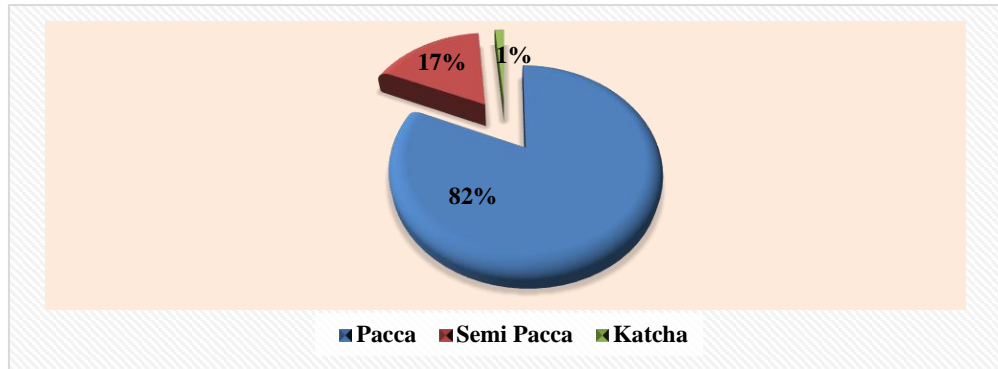**Table 11. Distribution of Respondents by Accommodation (n=71)**

Table shows that 82 (81.7%) were living in pacca house, 17 (16.9%) was living in semi pacca-house, and 1 (1.4%) were living in katcha house.

Table 12. Distribution of Respondents' House by ventilation Facilities (n=71)

Ventilation	Frequency	Percent
Yes	69	95
No	2	5
Total	**71**	**100.0**

Table represents that among respondent's 69 (95%) were well ventilated house and 2 (5%) were poor ventilated house.

Table 13. Distribution of Respondents' House by Lighting Facilities (n=71)

Lighting	Frequency	Percent
Well lighted	66	93.0
Poor lighted	5	7.0
Total	**71**	**100.0**

Table shows that most of the lighting conditions of the respondent's house were well - lighted 66 (93.0%) and poor – lighted 5 (7.0%).

Table 14. 4Distribution of Respondents by Smoking (n=71)

Smoking habit of the family member	Frequency	Percent
Yes	17	23.9
No	54	76.1
Total	**71**	**100.0**

Table represents that among the respondents' family members 7(9.9%) were smoker and rest 64 (90.1%) were not smoker.
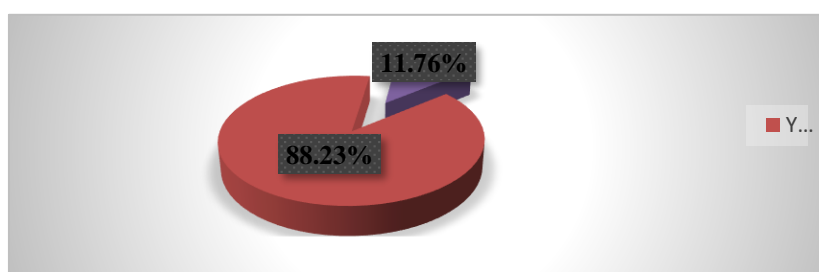
Table 15. Distribution of Respondents by Smoking Habit in the House (n=17)

Figure shows that among the respondents' family members no smoking habit in the house were (88.23%) and smoking habit in the house were (11.76%).

Table 16. Distribution of Respondents Smoking Habit in the Presence of Child (n=15)

Smoking habit in the presence of the child	Frequency	Percent
Yes	7	46.66
No	8	53.33
Total	**15**	**100.0**

Table represents that among the respondent's family member no smoking habit in the presence of child were 7 (46.6%) and smoking habit in the presence of child were 8 (53.33%).
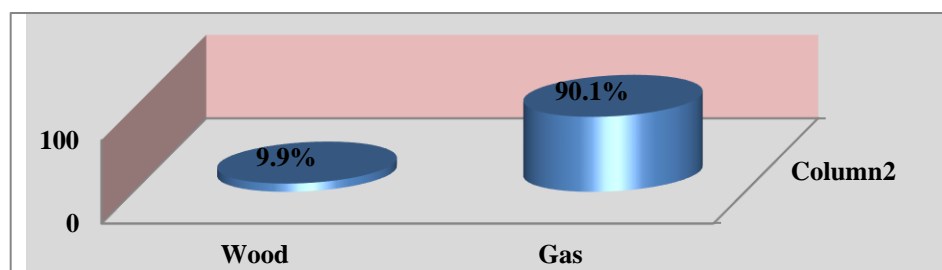
Table 17. Distribution of Burners Use for Cooking (n=71)

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Table represent that most of the respondents' type of burners use for cooking were gas 90 (90.1%) and rest 10 (9.9%) were wood.

Table 18. Distribution of Children Health Affect by Seasonal Variation (n = 71)

Seasonal variation	Frequency	Percent
Yes	43	60.6
No	28	39.4
Total	**71**	**100.0**

Table shows that most of the children 43 (60.6%) had suffered due to seasonal variations and rest 28 (39.4%) had not suffered due to seasonal variation.

Table 19. Distribution of Children by History of Low Birth Weight (n=71)

Low birth weight (in kg)	Frequency	Percent
Yes	7	9.9
No	64	90.1
Total	**71**	**100.0**

Table among the children 7 (9.9%) had history of low birth weight and rest 64 (90.1%) had no history of low birth weight.

Table 20. Distribution of Children by Suffering from Malnutrition (n=71)

Malnutrition	Frequency	Percent
Yes	4	5.6
No	67	94.4
Total	**71**	**100.0**

Table shows that most of the children 67 (94.4%) were not suffering from malnutrition and rest 4 (5.6%) were suffering from malnutrition.

Part-III Information related to immunization status under five children

Table 21. Distribution of Children History of Immunization Status (n=71)

Immunization	Frequency	Percent
Complete	57	80.3
Incomplete	14	19.7
Total	**71**	**100.0**

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Table shows that most of the children 57(80.3%) were completed their vaccination according to EPI schedule and rest 14(19.7%) didn't complete their vaccination.

Table 22. Distribution of Children by Taking Selected Immunization

Name of vaccine	Frequency	Percent
BCG	65	91.5
Pentavalent vaccine (DPT, Hepatitis-B, Hib)	63	88.7
PCV vaccine	63	88.7
OPV	63	88.7
IPV	51	71.8
MR vaccine	35	49.3

Multiple Respondents

7. Discussion

This descriptive type of cross-sectional study was conducted among 71 purposively selected under five children attending at CMH, Dhaka with an aim to access the immunization status, and socio demographic characteristics among under five children from July 2024 to December 2024. It is found that 52.1% were male and 47.9% were female. Another study conducted by Rahman et al. in three villages from Ghoraghat upazilla of Dinajpur district, incidence was 14.9% in male and 14.4% in female where male and female percentage of sufferings are almost similar, and study incidence were dissimilar may be due to more male child is suffering from URTI.

It is evident from present study that majority 36.6% were in between 1to 10 months of age, minority 5.6 % were in between 51 to 60 months and mean age 20.66 months. Which differ from the study findings conducted by Alemayehu S et al. on risk factors of Acute Upper Respiratory Tract Infection among under five children attending public hospitals in southern Tigray, Ethiopia and found that minority <6 months and majority 34.8% (25-59) months. The cause of difference may be due to sample size.

This present study indicating that among the respondents 94.4% were Muslim, 5.6% were Hinduism. Since the majority of the population was Muslim in Bangladesh, it was obvious that the number of Muslim respondents was higher than Hinduisms.

In recent years Bangladesh has taken many measures for increasing its literacy rate with special emphasis on female education. In this study it was found that majority 31.0% of the mothers of the study population were HSC or equivalent. There was no illiterate among mothers. It does not accord with the preliminary report of population census 2011 where the illiteracy rate for Bangladesh adult population was shown about 56.

The study showed that maximum respondent 39.4% had monthly income within taka 21000 to 30000 and the mean income is 34338.03 taka. The family income in comparison to national figure due to the fact that all father of study population was service holder and the income condition of Bangladesh is improved.

This present study depicted that 57.7% respondents had 2-4 members in the family. These findings are similar to the findings of household income and expenditure survey (BBS) where it was found that average number of family members in Bangladesh were four.

The study showed that most of the respondents 15.5% living rooms were 5-7. This overcrowding in the living room may be responsible for URTI.

In present study it was found that 35.2% respondent had indoor air pollution. The study is similar to the findings of the study conducted by Selvaraj K *et al.* Acute respiratory infections among under five children in India, exposure to indoor air pollution has 40.8%.

It is evident from present study that 81.7% respondents lived in pacca accommodation followed by 16.9% semi pacca accommodation and only 1.4 lived in katcha accommodation which are similar to the study findings of the study conducted Ferdous N A on Pattern of Upper Respiratory Tract Infection among the under five children Attending at CMH, Dhaka Cantonment where he found 81.7% lived in pacca house, 15% lived in semi pacca house and 3.3% lived in kathca house.

Among the respondent 97.2% had well-ventilated house and 2.8% poor ventilated house. Which indicate good ventilation of our population. Which is dissimilar to the study findings conducted by AK Savitha, S Gopalkrishnan in Tamil Nadu India 2018 Showed that 38.7% well-ventilated and 61.3% poor ventilated.

The present study revealed that most of the 93.0% lighting condition of the respondents' house were well lighted and 7.0% lighting condition of the respondents' house were poor lighted. Since everyone lived at well-furnished home, their lighting condition was much better.

The study depicts that about one third 23.9% were smoker among the respondents' family member. They all used to work in well-disciplined organization. Maybe they were service holder, they hide the fact. Which differ from the study conducted by Rahman *et al* in three villages from Ghoraghat upazilla in Dinajpur district, it was observed that parental smoking had 61%.

This present study revealed that most of the respondents 90.1% use gas burners. This study is nearly similar to the findings of the study carried out by Florey C du et al in a defined 4 square Km area in Middles Brough, Cleveland, UK where the respiratory illness was higher in children from gas then electric cooking homes.

Considering the seasonal variation, most of the children 60.6% had suffered due to seasonal variation. In this study showed that most of the child 94.4% were not suffering from malnutrition that may influence upper respiratory tract infection. The study findings dissimilar of study conducted by Savitha AK, Gopalakrishnan Son Determinants of Acute Respiratory Infections Among Under Five Children in Tamil Nadu, India were found that 66.4% Were suffering from magnetron and rest of the 26.6% had no history of malnutrition.

This study depicted that 80.3% children were completely immunized, 19.7% were not given against EPI vaccine. It is nearly similar to the study findings of the study conducted by Hossain A on Immunization Status Among the Children of Civilian Employees in Selected area of Dhaka Cantonment and found 70.00% children were fully immunized, 25.40% were continuing immunization and 4.60% were drop out. All the drop out cases were during Measles vaccination. This might be due to the maximum parents in Army Community are educated and conscious about the immunization of their child and they have easy accessibility to immunization centers.

8. Conclusion

The study has given an impression about the risk factor of upper respiratory infection among the under five children attending at CMH, Dhaka cantonment, Dhaka. The depicted results and discussion in the preceding chapters clearly indicates that the survey of 71 children attempted to understand the risk factor of upper respiratory tract infection. Upper respiratory tract infection recognized as a common problem among the under five children in our country. The smaller number of URTI in CMH Dhaka is due to better service facilities, better socio-demographic condition e.g. also, well better educational qualification, family income, housing condition. And ventilated house, better lightening facility in the house, a smaller number of smoking habit of family members in the house, a smaller number of low weight baby, a smaller number of malnourished baby and also well immunization status. But it does not definitely reflect the situation in other hospitals, other area such as slums of our country, where the patient load is very high, facilities are minimum, polluted environmental condition and overcrowding are sustained.

Based on the present study, maximum of the URTI children affected by seasonal variation 43 (60.6%), indoor air pollution 35 (35.2%), smoking habit of the family members 17 (23.9%), types of burners use for cooking gas 90 (90.1%) and malnutrition. It is hoped that present study will undoubtedly helping identifying the risk factors of upper respiratory tract infection cases. From this study the finding might be useful basis for recognizing the problem existing in the society and for future research on upper respiratory tract infection.

9. Recommendations

Based on the findings and discussion of the study, the following recommendations are put forward for the parents of children attending at OPD, pediatric ward-2, Combined Military Hospital, Dhaka Cantonment; Dhaka, as well as for the concerned particularly policy makers, public's health specialist, public health workers and future researchers to prevent childhood morbidity and mortality.

Measures should be taken to provide health education to the parents about the maintenance of health of their children and to encourage them for utilization of available health care facilities to minimize the Risk Factors of Upper Respiratory Tract Infection.

Health education should be provided by the health professionals to the respondent's to be more conscious about their child health particularly in pre-winter season.

Smoking habits among family members particularly of father should be changed through effective health education in the community.

More awareness should be created among parents regarding prevention and control measures of common health problem by ensuring ventilation facility, well lighting, nutrition and also ensure vaccination.

Since primary health care program are going on through the country. ARI control program should be effectively maintained.

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