**Reviewer’s Comments**

****

**Assessment of Current Status of Pneumoniain Chittagong, Bangladesh.**

**Abstract**

Pneumonia is a form of acute respiratory tract infection (ARTI) that affects the lungs.The populations most at risk for pneumonia are children under five years, people aged 65 or over, and people with pre-existing health problems. Pneumonia affects approximately 450 million people globally resulting in about 4 million deaths per year.Pneumonia has many possible causes, but the most common are bacteria and viruses. While data collection on hypertension in resource poor environments has been improv~~ing~~ (ed)through the use of standardized surveys, little is known about ~~the~~ how well treatments are being applied. Knowledge of gaps in diagnosis, T(t)reatment pattern, proper vaccination and practicing good health is necessary if appropriate illness management are to (be)developed. Using ~~a~~ community based sample ~~has been~~ taken from Chittagong Medical College Hospital, Chittagong and from ~~the~~ Chittagong p(P)ort c(C)ity,

(Mention sample size, and how it was obtained) Studied through some questions ask to the suspicious patients and patients guardian. Questionnaire and focused interview ere used to collect necessary data) Randomized sampling methods were used to identify of different ages from different wards and areas of CMCH and Chittagong port city. Using World Health Organizations guidelines, data were collected on Subject’s demographics, medical history, blood pressure and health behaviours. The Study was conducted on 500 pneumonia patients at the Chittagong Medical College Hospital and Chittagong port city between 23 October 2021 to 8 December 2021, total 7 weeks. This Survey was done by a structured questionnaire written in Bangla and English. This questionnaire was used to collect the data from the patients. Questions were asked to the patients and also patients guardians and finally answers of the patients were inserted into the Data Collection.

\*Abstract should be: Introduction, Objective/s; Method; Results; Conclusion.

No results,

**Keywords**

**Introduction**

Pneumonia is a form of acute respiratory tract infection (ARTI) that affects the lungs. When an individual has pneumonia, the alveoli in the lungs are filled with pus and fluid, which makes breathing painful and limits oxygen intake. Pneumonia has many possible causes, but the most common are bacteria and viruses (1). The most common pathogens are *Streptococcus pneumoniae*, *Haemophilusinfluenzae* type b (Hib), and respiratory syncytial virus (RSV). *S. pneumoniae* is the most common cause of bacterial pneumonia in children under five years in the developing world. The second most common cause of bacterial pneumonia in children is Hib, followed by RSV the most common cause of viral pneumonia in children under two years (2). The populations most at risk for pneumonia are children under five years, people aged 65 or over, and people with pre-existing health problems. Pneumonia affects approximately 450 million people globally resulting in about 4 million deaths per year (3).According to UNICEF/WHO P(p)neumonia is caused by bacteria, viruses or fungi, and leaves children fighting for breath as their lungs (are) fill(ed) with pus and fluid. It is the biggest single killer of children, claiming the lives of 800,000 children last year, or 1 child every 39 seconds.Forecasts show 6.3 million children under the age of five could die from pneumonia between 2020 and 2030, on current trends. It should also be noted that pneumonia is one of the leading causes of deaths for children under the age of 5.In Bangladesh, pneumonia took the lives of around 17,000 children under the age of 5 in 2016. Two children die every hour in our country due to pneumonia (4). Newborn babies usually get more attention in the treatment procedure, but we must concentrate on other ages as well. Bangladesh ranked 14th in the list of total 15 countries who were listed for the high number of deaths due to pneumonia, followed by its South Asian neighbors India, ranked second with 127,000 and Pakistan, ranked third with 58,000 child deaths (5). The report further stated that pneumonia was the third major cause of child deaths in 2017 in Bangladesh. This infectious disease was responsible for the deaths of four children under five in 1,000 live births in 2018 (6(different font size)).Bangladesh, pneumonia (pneumonia in Bangladesh)is responsible for around 28% of the deaths of children under five years of age. Around 50,000 children die of pneumonia every year. An estimated 80,000 children less than five years of age are admitted to hospital with virus-associated acute respiratory illness each year; the total number of infections is likely to be much higher (7). Pneumonia was the leading cause of death found in of all deaths of children aged 5 to fewer months. Children who died from pneumonia were predominantly infants, with those aged less than 6 months being particularly at a higher risk. Report are revealed that most of the death caused by knowledge gaps in healthcare utilization by guardians of ill children in a rural community of Bangladesh (8). Only a few children received treatment or children who died from pneumonia had a prolonged duration of illness before death (9). A trend of delayed care seeking (≥ 2 days) after the onset of disease was noted in children who died from pneumonia rather than other causes. A children who died from pneumonia sought treatment from multiple sources more often before death than children who died from other causes (10). Altogether findings suggest that children who died from pneumonia had a time window between onset of symptoms and death, in which appropriate treatment could have been delivered to reduce the risk of death. However, in most cases, appropriate action was not taken during this critical timing (11).

Too many prevalence reports. No report on such study carried out elsewhere

**Aims of The Study**

**The Aim of this research is:**

* To find out the present scenario of pneumonia treatment in Chittagong port City Area, Bangladesh
* To analyze sign & symptoms, causes, effects of pneumonia.
* This Study aims to examine people’s knowledge, ideas awareness regarding pneumonia diseases and also measures to be taken to prevent it.

**Materials And Methodology**

1. This was a Cross sectional, observational study carried out in the Chittagong Medical college and hospital, Bangladesh. After obtaining approval from the University authority, consulted and taken permission from the Managing director of Chittagong Medical College hospital, started to conducted this Survey Study. Quantitative and Qualitative information Get From pneumonia patients hospitalized in Chittagong medical college, Hospital.

2. This Survey indicates the present Patients Health conditions, complications, possible sign, symptoms, causes, risk factors, and also which Drug are administered for pneumonia patients, how long to recover the patients from this diseases.

3. This survey was also done by bodily going to places and asking questions to the patient guardians. Medical prescriptions, medications chart, and hospital records were also accessed and matched with patient data obtained through the interview.

4. The Survey was conducted from 23 October 2021 to 8 December2021 total 7 weeks. Safety measures were taken During this survey and the result were prepared according to the responses.

**Result & Discussions**

Pneumonia is the Single largest infectious causes of death in Children Worldwide. Preventing Pneumonia in Children is an essential component of a strategy to reduce Child Mortality. This Survey based on current scenario of Pneumonia Diseases by evaluating the awareness of the Sign, Symptoms, causes, Preventions of Pneumonia. Here the Assessment has been done on the 500 responses that has been Submitted by the Patients and Patients Guardians. The Result in Demographic table and charts are shown and discussed here below:

**Gender-**

|  |  |
| --- | --- |
| **~~Total number of patients~~**  | **~~500~~**  |
| **~~Male~~**  | **~~277~~**  |
| **~~Female~~**  | **~~223~~**  |

|  |
| --- |
| Figure 5.1 – Gender of theParticipants |

**Discussions:**The figure shows that out of 500 Study participants, 277 (55%) were male and 223 (45%) were Female.

**Economic Condition-**

|  |  |
| --- | --- |
| **~~Economic Conditions~~**  | **~~500~~**  |
| **~~Rich~~**  | **~~40~~**  |
| **~~Poor~~**  | **~~300~~**  |
| **~~Middle class~~**  | **~~160~~**  |

|  |
| --- |
| Figure 5.2 – Economic Condition Of the Participants |

**Discussion:**Having pneumonia is not a joke, Its makes more complications in our human body. This figure shows that Patients were get sick (6%), Patients with suffer weaken immune system (29%), and also causes death were (10%), and most of patients face all of the effects were (55%) due to pneumonia diseases Out of 500 participants.

**Age Distribution:**

|  |  |
| --- | --- |
| **~~Age range~~**  | **~~Number of patients~~**  |
| **~~0 to 1years~~** | **~~385~~**  |
| **~~2 to 3 years~~** | **~~38~~** |
| **~~3 to 4 years~~** | **~~25~~** |
| **~~4 to more~~** | **~~52~~** |

|  |
| --- |
| Figure 5.3 - Age of the Participants |

**Discussion:** This Figure shows that the participants were divided into catagories based on their age differences. Most of the participants (n=385, 77%) were aged 0-1 years, (n=38, 8%)Were aged 2-3 years, (n=25, 5%) Were Aged 3-4 years and the other participants were (n=52, 10%) were aged at 4- more years.

 **Primary Causes of Pneumonia Diseases**-

|  |  |
| --- | --- |
| **~~Total number of patients~~**  | **~~Guardian Opinion (500)~~**  |
| **~~Yes~~**  | **~~335~~**  |
| **~~No~~**  | **~~165~~**  |

|  |
| --- |
| Figure 5.4-Primary Causes of Pneumonia Diseases |

**Discussion:**We know that Bacteria and viruses are the primary causes of pneumonia. This figure shows that out of 500 participants patient guardians (335, 67%) replied positively and they know about it and (165, 33%) replied that they did not about it.

**Possible causes of pneumonia :**

|  |  |
| --- | --- |
| **~~Possible causes of pneumonia~~**  |  **~~Total Patients~~** **~~(500)~~**  |
| **~~Cigerates~~** | **~~65~~**  |
| **~~Bacteria~~**  | **~~292~~**  |
| **~~Fungi~~**  | **~~123~~**  |
| **~~Liquor~~**  | **~~90~~**  |

|  |
| --- |
| Figure 5.5- Possible Causes of pneumonia diseases |

**Discussion:**This Figures shows that Out of 500 participants about (65, 13%) Patients suffer from pneumonia due to intake of cigerates, patients were (292, 44%) suffer from due to Bacteria infections, patients were (123, 25%) suffers from pneumonia due to Fungi infection, and patients were (90, 18%) suffer from this diseases due to infection of liquor.

**Possibility of Higher risk of having pneumonia.**

|  |  |
| --- | --- |
| **~~Higher risk of having pneumonia~~**  |  **~~Total patients (500)~~**  |
| **~~Alcohol abusers~~**  | **~~50~~**  |
| **~~Malnourished people~~**  | **~~27~~**  |
| **~~Smoker~~**  | **~~162~~**  |
| **~~None of the Above~~**  | **~~261~~**  |

|  |
| --- |
| Figure5.6 - Possibility of having higher risk of pneumonia |

**Discussion:** It’s true that patients of all ages can get pneumonia . with that said, this figure shows that some were more at risk than others like Alcohol abuser were(50, 10%), Malnourished people were (27, 5%), Smokers were (162, 32 %), and none of the above this category were (262, 52%) out of 500 participants.

**Effects of pneumonia into the Human body-**

|  |  |
| --- | --- |
| **~~Effects of pneumonia into the Human Body~~**  |  **~~Number of patients (500)~~**  |
| **~~Get Sick~~**  | **~~32~~**  |
| **~~Weaken Immune System~~**  | **~~145~~**  |
| **~~Causes death~~**  | **~~50~~**  |
| **~~All of the above~~**  | **~~273~~**  |

|  |
| --- |
| Figure 5.7- Effects of pneumonia into the human body |

**Discussion:**Having pneumonia is not a joke, Its makes more complications in our human body. This figure shows that Patients were get sick (6%), Patients with suffer weaken immune system (29%), and also causes death were (10%), and most of patients face all of the effects were (55%) due to pneumonia diseases Out of 500 participants.

**Possible Symptoms of Pneumonia diseases.**

|  |  |
| --- | --- |
| **~~Possible Symptoms~~**  | **~~Number of patients~~**  |
| **~~Typical cold~~**  | **~~133~~**  |
| **~~Coughing~~**  | **~~97~~**  |
| **~~Shortness of breathing~~**  | **~~97~~**  |
| **~~Fever~~**  | **~~173~~**  |

|  |
| --- |
| Figure 5.8- Possible symptoms of pneumonia diseases |

**Discussion:**This figure shows that the possible symptoms of pneumonia were typical cold which we found (27%), coughing which were (19%), Shortness of breathing were (19%), and the most common symptoms were fever which we found (35%), out of 500 participants.

**Another Symptoms of pneumonia diseases.**

|  |  |
| --- | --- |
| **~~Another Symptoms of Pneumonia~~**  | **~~Number of patients (500)~~**  |
| **~~Chest pain~~**  | **~~112~~**  |
| **~~Feeling tired~~**  | **~~220~~**  |
| **~~Shaking~~**  | **~~73~~**  |
| **~~Vomiting~~**  | **~~95~~**  |

|  |
| --- |
| Figure 5.9 – Another symptoms of pneumonia diseases |

**Discussions:**This figure shows that another symptom we found in pneumonia patients that was Chest pain were (22%), Feel tired most common symptoms which were (44%), shaking symptoms of patients which were found (15%), and Vomiting which occurs (19%) Out of 500 participants.

 **Steps of preventions of pneumonia diseases**

|  |  |
| --- | --- |
| **~~Steps of Prevention of pneumonia~~**  | **~~Number of patients(500)~~**  |
| **~~Vaccinated~~**  | **~~200~~**  |
| **~~Exercising~~**  | **~~59~~**  |
| **~~Practicing Good health~~**  | **~~205~~**  |
| **~~Eating healthy food~~**  | **~~36~~**  |

|  |
| --- |
| Figure 5.10 - Steps for prevention of pneumonia diseases  |

**Discussion:** By Getting Well and Prevention of pneumonia diseases doctor suggests patients some proper rules which we found in this figure, this steps were Vaccinated (40%), Exercising(12%), Practicing Good health (41%), and also Eating Healthy foods which were (7%) Out of 500 participants.

**Conclusion**

This is the brief Study Conducted in Chittagong Medical College Hospital that assessed Pneumonia patients to recovery complications. Most respondents did not know about the signs and symptoms of pneumonia. For the few who have heard about pneumonia, causes were largely attributed to coming into contact with cold temperature in various forms. Management practices mostly were self-treatment with home remedies and allopathic care. Adequate measures needs to be taken to create the awareness to improve care seeking behaviour. The lower awareness and inadequate recognition of pneumonia implies that affected Children may not receive prompt and appropriate treatment as their caregiver may misdiagnose the illness. Adequate measures needs to be taken to create the needed awareness to improve care seeking behavior. We assume that the outcomes of this study will work as a baseline for future studies in the same context

**Conflict of interest**

**Author’s Contribution**

**References**

1. Tabish SA. Global maternal, newborn, and child health: so near and yet so far. International Journal of Scientific Research. 2020 Jan 30;9(1):142-191.
2. Brown N, Rizvi A, Kerai S, Nisar MI, Rahman N, Baloch B, Jehan F. Recurrence of WHO-defined fast breathing pneumonia among infants, its occurrence and predictors in Pakistan: a nested case–control analysis. BMJ ~~open~~. 2020 Jan 1;10(1):32-121.
3. Nathan AM, Teh CS, Jabar KA, Teoh BT, Tangaperumal A, Westerhout C, Zaki R, Eg KP, Thavagnanam S, de Bruyne JA. Bacterial pneumonia and its associated factors in children from a developing country: A prospective cohort study. PloS one. 2020 Feb 14;15(2):12-59.
4. Budhathoki SS, Tinkari BS, Bhandari A, Dhimal M, Zhou H, Ghimire A, Basnet O, Wrammert J, Ashish KC., The association of childhood pneumonia with household air pollution in Nepal: Evidence from Nepal demographic health surveys. Maternal and Child Health Journal. 2020 Jan 24:1-9.
5. Wu Z, Zhang S, Tang Y, Jiang W, Jiang H, Xie Z, Zhang B. Indoor environment in relation to recurrent childhood pneumonia in Southern China. Building and Environment. 2020 Feb 5:106-727.
6. Chan FY, Lui CT, Tse CF, Poon KM. Decision rule to predict pneumonia in children presented with acute febrile respiratory illness. The American Journal of Emergency Medicine. 2020 Jan 3: 483-589.
7. Sazawal S, Black RE, Pneumonia Case Management Trials Group. Effect of pneumonia case management on mortality in neonates, infants, and preschool children: a meta-analysis of community-based trials. The Lancet infectious diseases. 2003 Sep 1;3(9):547-561.
8. Gilani Z, Kwong YD, Levine OS, Deloria-Knoll M, Scott JA, O’Brien KL, Feikin DR. A literature review and survey of childhood pneumonia etiology studies: 2000–2010. Clinical infectious diseases. 2012 Apr 1;54(suppl\_2):S102-810.
9. Arnold FW, Summersgill JT, LaJoie AS, Peyrani P, Marrie TJ, Rossi P, Blasi F, Fernandez P, File Jr TM, Rello J, Menendez R. A worldwide perspective of atypical pathogens in community-acquired pneumonia. American journal of respiratory and critical care medicine. 2007 May 15;175(10):1086-9310.
10. Naheed A, Saha SK, Breiman RF, Khatun F, Brooks WA, El Arifeen S, Sack D, Luby SP, Pneumococcal Study Group. Multihospital surveillance of pneumonia burden among children aged< 5 years hospitalized for pneumonia in Bangladesh. Clinical Infectious Diseases. 2009 Mar 1;48(Supplement\_2):S82-163.
11. Ferdous F, Ahmed S, Das SK, Chisti MJ, Nasrin D, Kotloff KL, Levine MM, Nataro JP, Ma E, Muhsen K, Wagatsuma Y. Pneumonia mortality and healthcare utilization in young children in rural Bangladesh: a prospective verbal autopsy study. Tropical medicine and health. 2018 Dec;46(1):17-79.