

**OUTCOME OF MANIFESTATION AND SIGN OF PNEUMONIA IN
CHILDREN UNDER FIVE YEARS OF AGE**

1: DR Mujtaba Gul

MBBS FCPS PEADS

DISTRICT CHILDERN SPECIALIST, drmujtabagul@gmail.com, 03369914103

2: DR Muhammad Owais

MBBS FCPS PEADS, DISTRICT CHILDERN SPECIALIST

WOMEN & CHILDERN HOSPITAL

CHARSADA, m.owais105@yahoo.com, 03339332788

3: DR Ifthikhar Khan

MBBS FCPS PEADS, dr_ifti87@yahoo.com, 03459197253

4: Dr Zakir Ullah

MBBS , zakirullahkmc@gmail.com.03476893809

CORRESPONDING AUTHOR

NAME: DR MUHAMMAD OWAIS

DESIGNATION: MBBS FCPS PEADS, DISTRICT CHILDERN SPECIALIST

EMAIL: m.owais105@yahoo.com

PHONE: 03339332788

ABSTRACT

Objective: Acute infectious diseases such as pneumonia can be brought on by bacteria, viruses, or fungi and harm the lung parenchyma. It continues to be the world's top cause of death for children under five. Immunizations, a balanced diet, and a reduction in environmental stressors can all help with prevention. Early discovery, appropriate care, and prompt hospital admission are essential for treating this illness with low-tech, accessible therapies.

Methods: With ethical consent, a case series study was carried out in the pediatric department of District Kohat Hospital from August 2023 to February 2024. Informed consent was obtained from the parents of 139 study participants. SPSS version 24 was used for the data analysis process.

Results: Lethargy was the most prevalent clinical symptom (23.74%), while cyanosis was the least common (2.87%). Men experienced greater effects than women (59% vs. 41%). The vaccination rate for the first dosage was the lowest (28%) and the non-vaccination rate was the highest (44%).

Conclusion: Health planners must emphasize filling in the gaps in the EPI schedule by using media like radio, television, and newspapers.

KEY WORDS: pneumonia, education, health, presentation, Kohat , age.

INTRODUCTION:

The majority of pediatric infectious illness deaths each year are thought to be caused by pneumonia, which is most prevalent in developing countries¹⁻². The UNICEF Pakistan study states that 58,000 children under the age of five died from pneumonia in 2018. The primary known causative bacteria of pneumonia include respiratory syncytial virus (RSV), hemophilus influenza type B, and streptococcus pneumonia, despite the fact that statistics indicate a significant decline in pneumonia mortality since 2000. Dispersion is affected by location and season. The prevalence and pathogenesis of pediatric pneumonia in developing countries remain poorly understood. Based on estimates from the study, every year more than 900,000 instances of pneumonia in children under five are reported among the 14.9 million population, with over 8,000 deaths. According to a descriptive analysis, pneumonia accounted for the majority of hospital admissions (18% of total admissions). Still, there was a dearth of comprehensive information regarding the clinical manifestation and cause of probable pneumonia patients³⁻⁷.

Vaccination against pneumococcus, influenza, measles, and Haemophilus influenza type b (Hib) is the best barrier against pneumonia. In wealthy nations, vaccination can avoid at least one-third of serious cases and two-thirds of pneumonia-related deaths. As of 2015, national immunization programs included the Hib vaccine, the influenza vaccine, and the pneumococcal conjugate vaccine (PCV) in 192, 102, and 129 member states, respectively. Children's physical and mental health will be seriously harmed, and their lives may even be in jeopardy, if the right therapies for this illness are not given to them in a timely manner.

A novel sort of nursing strategy called comprehensive nursing intervention aims to provide nursing care in a predetermined manner based on the child's condition for a specific ailment. Pneumonia is expected to affect 14.5 out of every 10,000 children ages 0 to 16 and 33 out of every 10,000 children ages 5 in other wealthy nations⁸⁻¹⁹.

METHODOLOGY:

Following ethical clearance, this case series investigation was carried out in the pediatric ward of the DHQ Kohat Category A hospital. With 449 beds, this hospital can accommodate 1500 patients who come in every day from nearby districts for treatment in the emergency and OP departments.

All-inclusive standards: Hospitalization for pneumonia was granted to children who fulfilled the following encompassing criteria: - Dyspnea or cough, - According to the World Health Organization (WHO), tachypnea is defined as a respiratory rate of 50 cycles per minute in children ages 2 to 12 months and 40 cycles per minute in children ages 12 to 59 months.

Wheezing should not be present during auscultation; the first symptoms should have appeared within the previous 14 days; and pneumonia should be confirmed radiologically in accordance with WHO guidelines. Patients who wheezed during auscultation or who were under age and whose parents or guardians refused to sign the informed permission form were excluded from consideration.

Technique for sampling: To ascertain the causes of pneumonia, questionnaires were created. Each patient's questionnaire was gathered independently. Before the patient finished filling out the questionnaire, the patient's attendant gave a brief explanation of the goal of the research endeavour. Data from 139 patients were collected using a non-probability sampling method. The results were analyzed using the SPSS-24 version.

RESULTS: Total 139 patients were enrolled in study after getting consent. There were 57 females and 82 males (59%) in the study. Lethargy was seen in 33 instances (23.74%) of the subjects, cough in 26 cases (18.70%), pulmonary crackles in 22 cases (15.82%), and dyspnea in 15 cases (10.79%). Reduced breath sounds in 10 instances (7.19%), dullness to percussion in 11 cases (7.91%), rhonchi and lower chest in

drawing in 9 cases (6.47%), and cyanosis in 4 cases (2.87%) were less prevalent symptoms. In terms of immunization status, 56% of children had received the Hep-B, OPV, and BCG vaccines; vaccination rates for the remaining vaccines on the EPI schedule varied from 28% to 87%. According to the families' socioeconomic position, 51% of them belonged to low-income groups, 45% to medium-income groups, and 4% to high-income groups.

Table: 1 Gender information.

Gender	Number	Percentages
Male	82	59%
Women	57	41%

Table: 2 Clinical sign and symptoms.

Feature	Number & percentages
Dyspnea	15(10.79%)
Lower chest in drawing	9(6.47%)
Cough	26(18.70%)
Pulmonary crackles	22(15.82%)
Rhonchi	9(6.47%)
Lethargy	33(23.74%)
Cyanosis	4(2.87%)
Diminished breath sound	10(7.19%)
Dullness to percussion	11(7.91%)

Table: 3 Epi vaccine schedule.

Dose	Vaccinated	Non vaccinated	Total n:139
Bcg, opv, hep-b	27(56%)	21(44%)	48(34.53%)
Rota virus-1, penta valent, opv-1, pneumococcal-1	18(53%)	16(47%)	34(24.46%)

Opv-2, pneumococcal-2, rota virus-2, penta valent- 2	7(54%)	6(46%)	13(9.35%)
Opv-3, pneumococcal-3, ipv- 1, penta valent-3	19(87%)	3(13%)	22(15.82%)
Mr-1, typhoid, ipv-2	11(73%)	4(27%)	15(10.79%)
mr-2	2(28%)	5(72%)	7(5%)

Table: 4 Socio-economic status of family

Status	Number	Percentages
Low	71	51%
Medium	62	45%
High	6	4%

DISCUSSION: Previous studies in Pakistan's Khyber Pakhtoonkhwa province showed immunization rates of 37.6% in hospitals and 65% in rural areas. The results we obtained were rather similar, showing that the first scheduled dose of Epi had the greatest ratio at 21% while Kohat Hospital entertained nearby patients in the out-of-door department. Kohat has a 44.1% literacy rate; the female to male ratio is 23.5% and 65.5%, respectively, indicating their interest in maintaining records for epi¹¹⁻¹². The dosage 4 ratio had the lowest non-vaccination ratio, at 3%. converses with parents and caregivers to determine the common difficulties associated with administering vaccinations. misinformation had a significant role and that parents were generally unmotivated to invest the time and energy necessary to get their kids inoculated, particularly if the facilities were far away.

As per another survey, the bulk of men working in this category had jobs overseas, and most individuals in this category had below-average economic standing. Everyone should practice good hygiene since children are particularly vulnerable to contracting and transmitting diseases. According to WHO guidelines, every patient who passed away had severe pneumonia and substantial dyspnea, a clearly visible chest in the drawing, and severe hypoxia. 15 people (10.79%) in our results had dyspnea, 9 people (6.47%) had cyanosis, and 4 people (2.87%) had both, which were greater than in earlier studies¹³⁻¹⁵. Another study they published on vaccination¹⁶ indicates that if the mother has an education, the family as a whole is likely to have one as well.

One major reason behind the growth in respiratory illnesses among slum residents is the higher risk of respiratory infections in kids and teenagers living in dwellings with inadequate ventilation, especially those under five. It will assist all children and stop the asymptomatic carrier. In our study, male genders made up 82 (59%) of the sample, whereas female genders made up 57 (41%). This is mostly because male children are raised outside the family while female children are raised indoors. When children have pneumonia, the most common cause of lung inflammation is an infection, such as bacteria or viruses. Paediatric pneumonia is also associated with age, malnourishment, immuno suppression, and immuno suppressive treatment.

The common clinical indicators of juvenile pneumonia include fever, coughing, dyspnea, shortness of breath, wet rales on lung auscultation, and inflammatory lesions observed on chest imaging examination. Treatments for the underlying cause of pediatric pneumonia and treatments for its symptoms can be distinguished from one another. Antiviral vitamin therapy is the primary course of action for treating Ethiological factors¹⁶⁻²⁰. Prioritizing education is important, but it's also critical to remember that infrastructure has never come first. This is the reason why the government and international organizations still need to update hospitals to satisfy all criteria and enhance their immunization program.

CONCLUSION: We have a long way to go before we see meaningful progress. To successfully raise public awareness of the value and effectiveness of education,

vaccines, and children's health, we must employ media outlets such as radio, television, and newspapers. The educational system has to be improved. We can improve the health literacy of our mothers and the entire country by starting health education programs in this area. The missing Epi schedule should be the health planners' primary focus.

LIMITATION: The diagnosis of pneumonia is difficult because there isn't a single reliable test that can be used. Identifying the aetiology or nasopharyngeal colonization of a positive nose swab at the individual level can be difficult, particularly for bacteria with high asymptomatic carrying rates as *S. pneumoniae*. It is feasible to evaluate and take into consideration the population-level prevalence of carriage in children who do not exhibit any symptoms by incorporating a control group. The study external validity might be limited because it was limited to one hospital in Kohat. Only the presentations at our hospital admissions were relevant to our study.

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