

## A STUDY OF CLINICAL PROFILE AND OUTCOME OF PNEUMONIA ASSOCIATED WITH TRADITIONAL CHILD REARING PRACTICES IN INFANTS

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### Abstract

**Background:** Many Indian families, both in the country and the city, fiercely adhere to their customs and traditions. The objective of this study was to evaluate and compare the clinical characteristics and prognosis of pneumonia in newborns raised according to conventional child rearing methods vs infants raised according to non-traditional methods, as well as the numerous factors impacting each. **Materials and Methods:** It was a prospective case control study conducted in Department of Paediatrics in a tertiary care hospital. All infants admitted in PICU and wards with pneumonia in age group 29 days to 1 year during the study period who showed clinical and radiological evidence of pneumonia and having history of traditional child rearing practices were included in the study and considered as cases, while infants in same age group admitted with clinical and radiological evidence of pneumonia and without history of traditional child rearing practices are considered as control group. **Result:** Out of 200, 80 infants had history of traditional CRP. On analyzing all infants with pneumonia, 48% infants of <3 months had pneumonia when compared to the age group of 4- 6 months (30%) and 7-12 months (22%) and is statistically significant. Also traditional CRP is done in 48% of <3 months old infants when compared with other age groups and is statistically significant. on comparing and analyzing the clinical parameters between pneumonia in infants associated with traditional CRP (cases) and controls it is found that prolonged fever (90%), prolonged respiratory distress >3 (71%), prolonged need for oxygen supplementation(68%), prolonged difficulty in taking feeds (86%), prolonged need for intra venous fluids (75%), prolonged ICU care (91%) was found to be associated with pneumonia in infants associated with traditional CRP and it was statistically significant(p<0.05). **Conclusion:** According to this study, conventional childrearing approaches are linked to increased pneumonia complications in newborns as well as longer survival times and greater clinical severity. Therefore, there is a pressing need to thoroughly investigate the benefits, drawbacks, and potential risks of many of the conventional childrearing techniques used with newborns.

## INTRODUCTION

Customs are long-standing customs and beliefs that are common in a group and can apply to a variety of endeavours. From one generation to the next, mother craft and child care habits and cultural practices are transmitted. The family and societal value systems, educational attainment, and socioeconomic standing all have an impact on traditional customs. Many South Indian families, both in rural and urban areas, fiercely adhere to their customs and traditions. Certain traditional methods of raising children are being supported by elders and observed. Even the educated and urban elites are somewhat immune to the influence of elderly women in their community and family when it comes to customs and traditions.<sup>[1]</sup>

Community statistics does show that different cultural practices have a significant impact on the causes of childhood illness and mortality. Sneezing, rhinorrhea, and conjunctival irritation are caused by oil getting into the nose and eyes. Additionally, the youngster who is crying uncontrollably may aspirate bath products, water, and secretions from their nose and throat.<sup>[2]</sup>

The elders on the dais and in the families assert that, after years of experience, they are technically proficient in the technique of blowing into the nose in an attempt to loosen the fluids inside. Infants' airways may become impacted with betel nut fragments or contaminated nasal or pharyngeal secretions as a result of the abrupt increase in airway pressure.<sup>[3]</sup> This can cause pneumonia in certain

children and recurrent pneumonia in others. When healthy children are subjected to this procedure, they most likely have a viral respiratory disease. However, over time, more serious problems such as lipoid pneumonia, which is typically accompanied by bacterial sepsis are developed.<sup>[4]</sup>

An inflammation of the lung parenchyma is known as pneumonia. Although bacteria are the primary cause of pneumonia, there are a variety of non-infectious factors that should occasionally be taken into account. Aspiration of food or stomach acid, foreign objects, hydrocarbons and lipoid materials, hypersensitivity reactions, and radiation/drug-induced pneumonias are a few examples of these non-infectious causes. The most common bacterial causes of pneumonia in the normal child are *S. pneumoniae*, *H. influenzae* type B, *S. pyogenes* and *S. aureus*. The most common viruses causing pneumonias include respiratory syncytial virus (RSV), para influenza, influenza and adenoviruses.<sup>[5,6]</sup>

Clinical signs of viral pneumonia include coughing and rhinitis, as well as multisystem involvement, fever, and comparable complaints in other family members. There is tachypnea, nasal flaring, and retractions of the intercostal, subcostal, and suprasternal muscles. There is a wide range of non-specific signs and symptoms associated with bacterial pneumonia, including fever, chills, headache, malaise, irritability, and restlessness. Tachypnea, dyspnea, grunting, chest retractions, and cyanosis are examples of LRTI symptoms. Additional characteristics shared by meningitis and septicemia can also be seen in pneumonia.<sup>[7,8]</sup>

Pneumonia can be significantly caused by some child rearing approaches. The purpose of this study was to evaluate the clinical profile and prognosis of pneumonia in newborns raised according to those conventional child-rearing approaches.

## MATERIALS AND METHODS

It was a prospective case control study conducted in Department of Paediatrics in a tertiary care hospital. All infants admitted in PICU and wards with pneumonia in age group 29 days to 1 year during the study period who showed clinical and radiological evidence of pneumonia and having history of traditional child rearing practices were included in the study and considered as cases, while infants in same age group admitted with clinical and radiological evidence of pneumonia and without history of traditional child rearing practices are considered as control group. A total of 200 infants were clinically and radiologically diagnosed as pneumonia during the period from November 2022 to November 2023 using systematic random sampling 80 infants were selected as cases and 120 as controls.

### Exclusion Criteria

1. Neonatal period

2. Children with systemic disorders causing respiratory distress like pulmonary cardiac, renal, central nervous system or metabolic problems

### Methodology

For this study detailed clinical history was taken. Mother / care giver were given questionnaires which included details regarding various traditional child rearing practices like, Oil bath, oil instillation into nose, ear and mouth, blowing into the nose, mouth to mouth suctioning, Finger-mouth suctioning, application of irritant myrrh and giving native medications, was prepared and the accompanying person with the infant was asked. The length of the fever following admission, if it was present earlier, the length of significant respiratory distress (defined as a Downe score >3), the length of difficulty taking regular feeds, the need for supplemental oxygen, IV fluids, and ICU setting care, the need for any II line antibiotics, and the clinical outcome are the clinical parameters that are used.

All necessary investigations were done. X-rays were analysed during admission for evidences in the form of bronchopneumonia, patchy opacities, consolidation, pneumatoceles, and pyothorax.

### Statistical Analysis

The data was presented using percentages and numbers. The mean and SD were used to generate quantitative data. Chi square test and data analysis were performed using SPSS version 24 (statistical software for social science). The results were subjected to a qualitative T test, and a p-value of less than 0.05 was deemed statistically significant between the two groups.

## RESULTS

As per [Table 1] during the study period, the total numbers of infants came as out patient census was 34075. Out of this, 200 infants had clinical symptoms and signs and with radiological signs of pneumonia. Out of 200, 80 infants had history of traditional CRP. On analyzing all infants with pneumonia, 48% infants of <3 months had pneumonia when compared to the age group of 4- 6 months (30%) and 7-12 months (22%) and is statistically significant. Also traditional CRP is done in 48% of <3 months old infants when compared with other age groups and is statistically significant. This may be due to family members visiting the mother and baby after delivery and the new mother is afraid of doing those child rearing practices. Also, noisy breathing in early infancy is attributed to colds and in order to relieve this symptom, various CRP are done. Also the study was male preponderance out of 80 cases (57 were males and 23 were females) and in controls (85 were males and 35 were female infants).

As per [Table 2] the incidence of pneumonia in infants associated with traditional CRP done or suggested by Grandmothers (54%) followed by elders nearby (34%), Mother (12%) and the significant p value 0.01. The mothers who are not

equipped with sufficient knowledge about newborn care and using traditional child care methods may sometimes cause harm to their newborn and even cause handicaps in them.

As per [Table 3] on comparing and analyzing the clinical parameters between pneumonia in infants associated with traditional CRP (cases) and controls it is found that prolonged fever (90%), prolonged respiratory distress >3 (71%), prolonged need for oxygen supplementation(68%), prolonged difficulty in taking feeds (86%), prolonged need for intra

venous fluids (75%), prolonged ICU care (91%) was found to be associated with pneumonia in infants associated with traditional CRP and it was statistically significant( $p<0.05$ ). On analyzing the complications associated with pneumonia, it is found to be more in pneumonia in infants associated with traditional CRP (65%). Death was found to be more in pneumonia in infants associated with traditional CRP (7%) when compared to pneumonia in infants not associated with traditional CRP (2%). But majority of the infants have improved in both the groups but it was not significant.

**Table 1: Age wise distribution of infants exposed to traditional child rearing practices**

Age	Cases (n=80)	Controls (n=120)	p-value
<3 months	47	50	0.01
4-6 months	20	40	
7-12 months	13	30	

**Table 2: Child rearing practices done or suggested by**

CRP done by	Cases (n=80)	p-value
Mother	10 (12%)	0.01
Grand mothers	43 (54%)	
Elders near by	27 (34%)	

**Table 3: Comparison of clinical profile between cases and controls**

Parameters	Cases (n=80)	Controls (n=120)	p-value
Fever			0.01
No	5 (6)	7 (6)	
<2 days	3 (4)	103 (86)	
>2 days	72 (90)	10 (8)	0.01
Feed difficulty			
<2 days	11 (14)	99 (83)	
>2 days	69 (86)	21 (17)	0.01
O2 supplementation			
<2 days	26 (32)	102 (85)	
>2 days	54 (68)	18 (15)	0.01
Respiratory distress			
<2days	23 (29)	99 (83)	
>2 days	57 (71)	21 (17)	0.01
IV fluids required			
<2 days	20 (25)	108 (90)	
>2 days	60 (75)	12 (10)	0.01
Care in ICU			
<2 days	7 (9)	112 (93)	
>2 days	73 (91)	8 (7)	0.01
Complications			
Yes	52 (65)	10 (8)	
No	28 (35)	110 (92)	0.06
Clinical outcome			
Improved	74 (93)	118 (98)	
Death	6 (7)	2 (2)	

## DISCUSSION

Regardless of a child's sex or place of residence, traditional childrearing methods are applied to the vulnerable group of early infancy, when they are admitted to the hospital for minor ailments like noisy breathing. These techniques are thereafter continued. The most common age group was between 2-36 41 months of age, according to a study by Sudha Basnet et al,<sup>[9]</sup> in a case study of 264, which is related to the current study. In Mexico, the most prevalent age group, according to a study by García-Elorriaga et

al,<sup>[10]</sup> was under two years old, which corresponds to the current study.

When mothers utilize traditional child care procedures and lack adequate understanding about newborn care, their newborns may suffer injury or even develop disabilities. Women in our community get information from traditional birth attendants, elders, and family members. Therefore, instructional messaging should be directed towards these groups of women: expecting moms and mothers of newborns. Cultural ideas have an influence on newborn care, just like they do on other human

behaviour. Therefore, it is crucial to investigate cultural beliefs and neonatal care practices.<sup>[11,12]</sup>

According to a 2019 Institute of Child Health study, 76% of ARI cases have bronchopneumonia. Jayakumar et al. 76.2% of the male to female ratio, 1.8:1.3, is made up of babies. However, this study covers all children and identifies the common newborn age group.<sup>[12]</sup>

Boys are affected twice as often as girls by persistent/recurrent pneumonia, according to a study by Balachandran et al,<sup>[13]</sup> on 131 cases. This finding was explained by the fact that male children receive preferential care compared to female children.

When a newborn is admitted with pneumonia, they typically have a fever, albeit a mild one in younger infants as they may exhibit hypothermia comparable to that of those receiving outside treatment with antibiotics and antipyretics.<sup>[14]</sup> Prolonged fever despite proper treatment may be caused by unusual or drug-resistant germs, as well as serious infections. During the ward's treatment, respiratory rate, chest retractions, grunts, cyanosis, and air entry were all taken into consideration when calculating the patient's respiratory distress at the time of admission using Downe's scoring system. Infants with only rapid breathing were considered to be improving.<sup>[13,14]</sup>

According to Ritu Gupta study the graduate mothers despite educational status are still influenced by elders, associated with religious people and quacks which is similar to the present study.<sup>[15]</sup>

This study is the first of its kind to address the question of whether conventional child upbringing approaches have a greater impact on pneumonia clinical characteristics. The present investigation is restricted to the baby age group; however, several disorders have also been linked to conventional child care practices during the neonatal stage. This research is restricted to infant pneumonia, but traditional childrearing practices have also been linked to numerous illnesses including the skin, GIT, and central nervous system in both newborns and infants.

## CONCLUSION

According to this study, conventional childrearing approaches are linked to increased pneumonia complications in newborns as well as longer survival times and greater clinical severity. A high death rate of 7% was also observed. The two most popular traditional child-rearing techniques that have an impact on an infant's development are oil bathing and blowing into the nose. Therefore, there is a pressing

need to thoroughly investigate the benefits, drawbacks, and potential risks of many of the conventional childrearing techniques used with newborns.

Our knowledge and comprehension of the effects of conventional child rearing practices on developing children will be further expanded by including additional age groups, such as newborns and toddlers, and by studying other systems involvement. In order to teach moms about different child-rearing techniques, team approach concepts are required, and there should be more social workers and paramedical personnel present at the OPDs.

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