

Assessment of Caregivers Awareness and Practice Regarding Childhood Pneumonia in Selected Urban Community, East Khasi Hills District, Meghalaya

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ABSTRACT

Pneumonia in children is an acute infection of the lower respiratory tract marked by the buildup of fluid or pus in the alveoli, which leads to breathing difficulties. When caregivers have limited awareness of the risk factors, symptoms, prevention, and management of pneumonia, treatment of the illness may be delayed. This study evaluated caregivers awareness and practice regarding childhood pneumonia and identified their associations with selected demographic factors in an urban community of East Khasi Hills District, Meghalaya.

The study aimed to assess caregivers awareness and practices concerning childhood pneumonia and to determine the association of caregivers awareness and practices with selected demographic variables in the study area.

A descriptive cross-sectional study design was employed in this study. A total of 117 caregivers were randomly chosen from the community to take part in the study. Data were gathered through a self-administered structured questionnaire and examined with frequency, percentage, chi-square, and Fisher's exact test.

The current study established that 58.97% of caregivers had adequate awareness while 68.38% had good practices towards childhood pneumonia. This result is comparable to the study conducted by Tinglunmani et al. (2026) and Vu et al. (2026) whose outcomes also showed satisfactory levels of knowledge and practices of caregivers towards childhood pneumonia. The current study also established a significant association between the age of the caregiver and the level of awareness ($p = 0.042$). This outcome echoes the finding of Kajungu et al. (2023) which established that the older the caregiver the better the level of knowledge they have towards childhood pneumonia. A significant association was also found between the history of pneumonia in children within the past six months and the caregivers'

level of awareness. This finding suggests that caregivers' previous experience with childhood pneumonia may be associated with their awareness regarding the condition.

In conclusion, the majority of the caregivers assessed through a self-administered questionnaire demonstrated adequate awareness and good practice regarding childhood pneumonia. However, a considerable proportion of caregivers still had inadequate awareness and poor practices.

Therefore, follows that there is a need to sustain efforts at health education and community-based awareness programmes in order to increase early recognition of the disease leading the caregivers into adopting preventive practices, encourage them to seek appropriate health care in time in order to reduce the morbidity and mortality associated with pneumonia among children under five years of age.

CHAPTER-1

INTRODUCTION

BACKGROUND OF THE STUDY

Pneumonia is the leading infectious cause of death among children around the world. Pneumonia is contagious and may be transmitted via airborne particles. It may also be transmitted through other bodily fluids, for instance blood during childbirth, or from contaminated surfaces.¹

Pneumonia disrupts the normal exchange of gases in the lungs by interfering with the transfer of oxygen from the alveoli into the bloodstream and the removal of carbon dioxide from the blood. The development of childhood pneumonia is influenced by a combination of factors related to the child and the infectious microorganisms involved. Several conditions can increase a child's susceptibility, including low birth weight, malnutrition, lack of exclusive breastfeeding during the first six months, exposure to indoor air pollution, and incomplete vaccination against diseases such as measles, Haemophilus influenzae type b (Hib), and pneumococcal disease. Underlying health conditions, including cleft palate, congenital heart disease, and asthma, can increase the risk of pneumonia. In children, the terms pneumonia, acute lower respiratory tract infection (ALRI), and acute respiratory infection (ARI) may sometimes be used interchangeably, depending on the context.²

Pneumonia killed 740,180 children under the age of 5 in 2019, accounting for 14% of a total of all deaths of children under 5 years old and 22% of all deaths in children aged 1 to 5 years. Pneumonia affects children and families everywhere, but fatalities are highest in southern Asia and sub-Saharan Africa. Children can be protected from pneumonia it can be prevented through simple interventions, and it can be treated with low-cost, low-tech medication and care.³

Childhood pneumonia continues to be the top infectious killer among children, contributing to 17.51 per cent of under-five deaths in India.

According to the SRS 2020 Statistical report, the under-five mortality rate stands at 32 per 1000 live births, whereas the National Health Policy 2017 aims to bring down the U5MR to 23 per 1000 live births by the year 2025. To ensure achievement of the objectives of the National Health Policy 2017, fatalities from childhood pneumonia need to be brought down to less than 3 per 1000 live births. Such is the dream of the India Integrated Action Plan for Pneumonia & Diarrhoea (IAPPD) in the state of Bihar, Madhya Pradesh, Rajasthan and Uttar Pradesh. The State Launch of Social Awareness and Actions to Neutralize Pneumonia was conducted on 29 November 2021 at 10:00 am at Ganesh Das Hospital, Shillong. The SAANS Program is aimed at preventing childhood deaths due to pneumonia and diarrhea. The program is targeting children aged 0 to 5. Dr R. commenced the proceedings of the launch

mentioned above with a welcome address. F. Tariang, Director of Health Services (MCHFW), followed by a keynote address delivered by Dr P. Manners, JT DHS (MCHFW) cum Nodal Officer Child Health. In the keynote address, Dr Manners informed that Pneumonia is one of the leading causes of death among children under 5 years of age. Across the nation, there has been more than 1 lakh children who have died due to pneumonia. Meghalaya is one of the states in which Pneumonia has claimed lives. Approximately 800 children under the age of 5 have died due to pneumonia over a period of 1 month, representing 15% of deaths, while in the 1 to 12 months age group, 34% have died of Pneumonia. Pneumonia, so far, has taken the lives of 14% of children aged 1 to 5 years. It has caused significant loss of lives among children. As parents and caregivers, it is important to comprehend that pneumonia is a severe illness that can lead to fatality. Although mothers may have multiple children, it has been noticed that some mothers still fail to identify the signs and symptoms of pneumonia. Through the awareness efforts planned for this program, it is aimed to provide relevant information and education to mothers and other caregivers so that they can identify the symptoms of pneumonia readily and subsequently seek early and timely treatment for the children to prevent loss of life.⁴

As stated by the Government of India, Ministry of Health and Family Welfare, Department of Health and Family Welfare, the number of Childhood Pneumonia cases reported under the Health Management Information System (HMIS) for 2022-23 in Meghalaya stands at 3,349 (the all- India figure of cases is 47,380). As noted in Annexure II under Childhood Mortality due to Pneumonia reported under the Health Management Information System (HMIS) 2022-23, the number of Infant Deaths (1 -12 months) due to Pneumonia is 367 while the number of Child Deaths (1- -5 years) due to Pneumonia accounts for 83.⁵

NEED OF THE STUDY

Meghalaya is one of the states in the country where pneumonia has cost the lives of approximately 800 children below the age of 5. In infants below 1 month, 15 percent of deaths occur due to pneumonia, while in children between 1 month and 12 months, 34 percent have died from pneumonia in 5-year-olds, 14 percent have lost their lives to pneumonia. Pneumonia has resulted in a huge number of deaths among children. As parents and caretakers, we need to understand that pneumonia is deadly and a big concern.⁴

Caregivers might not possess sufficient awareness and may follow unsuitable practices concerning the causes, signs and symptoms, prevention, and treatment of pneumonia in children. The lack of sufficient knowledge and suitable practices involves contributory factors such as age, the number of children, the social class, how common the sickness is within the locality, and how caregivers perceive the illness. Caregivers choice to seek treatment is shaped by a range of determinants, including awareness, the severity of the illness, socioeconomic status, societal beliefs and customs, and treatment-seeking behaviour. Hence, examining the level of awareness and practices will establish the kind of intervention required, as the study will furnish baseline information.

The determinants of awareness and practice comprise age, the number of children, the social class and prevalence of the sickness within the locality, and how caregivers perceive the illness. Educational programs delivered by nurses, ASHA, Anganwadi workers, and primary health centers provide knowledge on the early signs and symptoms of pneumonia, immunization, feeding practice, seeking appropriate treatment, and managing the sick child. Awareness and practices are essential components that must be assessed at the community level, given that caregivers' perceptions and practices are shaped by sociocultural, educational, economic and health service factors.

The present study was undertaken to assess caregivers awareness and practices regarding childhood pneumonia among children below five years of age in an urban community, with the aim of establishing baseline data for a community-based nursing intervention in the study area.

STATEMENT OF THE PROBLEM

- To assess the awareness and practices of caregivers regarding childhood pneumonia.

Primary objective

1. To assess the awareness of caregivers regarding childhood pneumonia.
2. To assess the practices of caregivers regarding childhood pneumonia.

Secondary objective

1. To find the association of caregivers awareness and practice regarding childhood pneumonia with selected demographic variables.

Operational Definition:

- A) **Caregivers**- For this study, a caregiver refers to biological parents, grandparents, other significant family members or other individual aged 18 years or above who provide consistent daily care to the child for at least the last three months, if he/she is not the child's mother/father.

CHAPTER -II

REVIEW OF LITERATURE

A literature review involves describing, critically analysing, and synthesizing existing literature pertaining to a specific field or topic. It provides an overview of the research conducted in the area, identifies the main researchers and their contributions examines the questions that have already been addressed in a specific area, describes the methods and methodologies employed to investigate specific research question, and outlines the prevailing theories and hypotheses in the field.

“A literature review is defined as a broad, comprehensive, in-depth, systematic and critical review of scholarly publication, un-published printed or audio-visual materials and personal communication”.

-S. K Sharma 2005

Regional

Tinglunmani et al. (2026) performed a study entitled “A Study to Assess the Knowledge and Practices on Homecare Regarding Acute Respiratory Infection among Mothers in Mizoram.” The work was conducted at Anganwadi centres in the Bawngkawn and Thuampui regions of Mizoram, India, in order to evaluate mothers' knowledge and homecare practices pertaining to acute respiratory infections (ARI) in children below the age of five. A descriptive survey design was used, with a sample of 200 mothers who were selected using the convenience sampling technique. The results indicated that 98.5% of mothers demonstrated excellent knowledge and 76% demonstrated excellent homecare practices concerning ARI. The study revealed a significant association between maternal education and knowledge, whereas the experience-related factors such as the number of children and frequency of ARI occurrence influenced practices. The researchers identified that improving maternal education and implementing community health education programmes and initiatives could improve homecare.⁶

Annu Gupta and colleagues (2020) presented the results of a prospective, cross-sectional observational study performed at NEIGRIHMS, Shillong, Meghalaya. The aim was to identify and analyse clinical, radiological, microbiological features and antibiotic resistance in community- acquired pneumonia among adults. A total of 117 patients were recruited. They underwent diagnostic evaluation, including demographic data, symptoms, associated co-morbid, chest X-ray, sputum culture, etc. Analysis revealed that cough, breathlessness and fever were the most common symptoms, whereas hypertension, COPD, smoking and diabetes were the most common co-morbid conditions. Patients also presented with multiple co-morbid conditions. The most prevalent isolated bacteria in sputum

cultures were gram negative bacilli (94%), among which *Klebsiella pneumoniae* (44%) and *Pseudomonas* species (20%) were most common. The isolated bacteria were susceptible to meropenem, amikacin and ertapenem, but resistant to ceftriaxone and cefuroxime. The researchers concluded that this study could contribute to the development of regional antibiotic guidelines and practices.⁷

Ranjan et al. (2024) conducted a statistical analysis to determine the prevalence and socio-economic determinants of childhood illness such as diarrhoea, acute respiratory infection (ARI), and fever in under-five children in India's North-East states using data collected from the NFHS-5 (2019-2021). The study revealed geographical and demographic variances in the distribution of the diseases. Overall, the prevalence of diarrhoea, ARI and fever was 8.4%, 6.3%, and 11.7% respectively in the region. Specifically, the North-East state of Meghalaya reported among the highest prevalence of diarrhoea (12.5%), ARI (10.3%), and fever (15.8%) of under-five children. Sikkim experienced the highest prevalence of diarrhoea (10.6%) in the child population of less than six months old. However, in the 6–12-month (13%) and 1–2-year, Meghalaya reported the highest prevalence of diarrhoea (12.1%) and fever (15.8%) respectively. Arunachal Pradesh recorded the highest prevalence of diarrhoea in the 2–5-year age group. Meanwhile, Meghalaya reported the highest prevalence of fever (17%) and ARI (12.1%) across all age groups. The study observed odds ratios (OR) of illness prevalence in most of the North-Eastern states significantly higher in comparison to Sikkim. For instance, the prevalence of diarrhoea, ARI, and fever was almost twice as high in Meghalaya as in Sikkim (OR 1.92; 95% CI 1.50–2.45), (OR 2.15; 95% CI 1.68–2.74), (OR 1.88; 95% CI 1.53–2.30). In addition, childhood ARI and fever were high in Tripura (OR 1.46; 95% CI 1.11–1.91) and Assam (OR 1.37; 95% CI 1.12–1.68). The study established a significant relationship between the socio-economic factors and prevalence of childhood diarrhoea, fever, and ARI. For instance, a higher prevalence of childhood illnesses occurred in the 1–5-year age group, among older caregivers, illiterate caregivers, and children from households with low wealth indexes. Moreover, the study observed a higher prevalence of disease among children from households without improved sanitation and those using unimproved methods of stool disposal. Therefore, the study provides anecdotal evidence of the high prevalence of diarrhoea, ARI, and fever in the North-Eastern states of India and the influence of socio-economic factors. This way, the study emphasises the need for policymakers to introduce healthcare interventions to reduce childhood illness prevalence especially in the identified North-Eastern states.⁸

Phukan and Gogoi (2021) conducted a survey based on NFHS-4 (2015-16) to examine mothers' health-seeking behaviour about childhood illnesses in Northeast India. This study revealed that almost half of the children under 5 years suffering from Acute Respiratory Infection (ARI) consulted any health provider. Around 60% of the children experiencing fever were prescribed antibiotics by a health care provider, while just 1% of children experiencing fever got anti-malarial drugs from a health care provider. The article revealed that health-seeking practices by mothers of sick children were unequal due to disparity in accessibility, availability of health services, inadequate quality of care, and a shortage of health workers in the rural areas.⁹

Nirmolia et al. (2017) conducted a community-based cross-sectional study to determine the prevalence and risk factors of pneumonia among children under five living in the slums of Dibrugarh town. The study involved 624 children selected from the targeted slums through house-to-house surveys. The results revealed a prevalence rate of pneumonia at 16.34%. Risk factors such as low socio-economic status, lack of maternal education, delayed complementary feeding, incomplete immunisation, and

indoor air pollution were found to contribute to the development of the disease. However, as indoor air pollution was identified as the main risk factor, the researchers recommended community-based interventions to reduce the occurrence of pneumonia among under-five children.¹⁰

A study conducted by Deb SK (1998) in the urban and rural regions of West Tripura District, India to “identify the cause, risk factors, morbidity and mortality related to Acute Respiratory Tract Infections as well as the effect of simple case management on children below the age of five.” The study included interviews conducted with 800 mothers. This study showed that the incidence of ARI was 23% in the urban area and 17.65% in the rural area with an overall incidence of 22.32%. The incidence of pneumonia turned out to be 16 per 1000 population in the urban area and 5 per 1000 in the rural area. The study further showed that children who belonged to low socio-economic groups have a higher incidence of Acute Respiratory Tract Infection episodes.¹¹

National

A mixed-method survey by Barsha Gadapani Pathak et al. (2025) published in *Health Expectations*, a journal, explores the determinants and experiences of care-seeking for childhood pneumonia carried out in rural India. The study done in Palwal district, Haryana included 9593 children under five years old from 42 villages 231 of whom were suspected to have pneumonia. A cross-sectional survey and in-depth qualitative interviews were applied to determine socio-demographic determinants and care-seeking behaviour, as well as barriers to appropriate care-seeking for childhood pneumonia. The results revealed that 97% of the caretakers sought care for their sick child, but 71% of them visited non-registered medical practitioners while only 3.6% used government facilities. In addition, higher levels of care were associated with higher levels of maternal education (AOR: 6.5; 95% CI: 2.7-9.7) and wealth index (AOR: 1.7; 95% CI: 1.0-2.6). The qualitative findings uncovered themes of delayed response due to a lack of knowledge about the illness, financial and gender-related barriers, and distrust of the government's healthcare system. The study highlights the need to increase awareness of childhood pneumonia and build the confidence of caretakers in government-run healthcare facilities.¹²

Raj et al. (2023) conducted a study entitled “Treatment Practices of Childhood Pneumonia: The Perspective of Caregivers – A Community-Based Study in West Bengal.” The article presents the conducted research by Raj et al. (2023) among 200 children selected using multi-stage sampling. The objective of the study was to ascertain treatment practices as well as factors associated with pneumonia among caregivers. The research involved caregivers of children aged under five years randomly selected from an area in West Bengal, India. The authors concluded that pneumonic illnesses were rampant within the population and associated with factors such as low birth weight, caesarean births, history of family members with respiratory disorders, and exposure to smoking. The study highlighted the need to promote awareness and appropriate management of the illness among caregivers to improve outcomes.¹³

Kulkarni et al. conducted a cross-sectional survey comprising mixed qualitative and quantitative procedures during 2023 to ascertain the caregivers' knowledge, perception, and management of childhood pneumonia in a tribal district. The 107 caregivers of sick children were selected from the population through a systematic random sampling approach. Over half of them were aged between 18-25, and only 13% were illiterate. The study discovered that a majority of the respondents identified cough, flu, and distension as signs and symptoms of pneumonia; however, food ingestion was the leading cause of this illness. The private doctors and traditional healers were preferred healthcare providers for treating the disease, but friends and family members provided the vital information about it. The research further recommended that relevant cultural knowledge and languages should be

integrated into information, education, and communication (IEC) packages to enhance their effective dissemination to the participants. It also proposed that sensitization of the traditional healers and private doctors on the importance of early detection and management plus a robust health system to reduce mortality rate due to this illness should be prioritized.¹⁴

A study conducted by Balasubramani K et al. (2022) focused on acute respiratory infections in children below 5 years of age at the district level. The aim was to assess the status and trends of ARI along with its hotspots using NFHS-4 survey data and to explore the association with environmental and household risk factors. The study's findings indicated that districts predominantly in Uttar Pradesh, Bihar, Delhi, Haryana, Punjab, and Chandigarh were identified as ARI hotspots. It was concluded that air pollution, illiteracy, unclean fuels, and inadequate sanitation were significant risk factors. The study emphasised the role of environmental and social interventions in reducing ARI among children in India.¹⁵

Prabhakar et al. conducted a study “A Study on the Management of Pneumonia in a Tertiary Care Hospital in Andhra Pradesh, India”, and assessed treatment strategies and clinical outcomes of pneumonia, as well as various factors of the disease. In particular, researchers conducted a retrospective cohort study of 350 pneumonia patients who were admitted to a tertiary care hospital in Andhra Pradesh, India, in September 2021 and April 2022. The researchers found that community-acquired pneumonia was the most common (85%) diagnosis in the study, and the effective treatment of pneumonia, especially with antibiotics (including ceftriaxone), is crucial for patients’ recovery. Moreover, the researchers concluded that pneumonia affected more male patients, while the mortality rate was higher among patients with diabetes and chronic obstructive pulmonary disease (COPD). Thus, researchers concluded that early diagnosis and antibiotic treatment, along with the control of risk factors, could improve patient outcomes.¹⁶

A community-based behavioural open-label trial was conducted by Shally Awasthi et al. which was published in 2019 with the objective of evaluating the effectiveness of various communication strategies in enhancing the case management of childhood pneumonia in rural Lucknow, Uttar Pradesh, India. Eight rural blocks were involved in the study using a 2x2 factorial design encompassing infrastructural strengthening of health facilities. Trained Community health workers trained conducted monthly Pneumonia Awareness Sessions using valid information, education, and communication (IEC) materials, either in government health facilities or in the village. In addition, prepacked pneumonia drug kits consisting of amoxicillin, paracetamol, and pictorial guides for caregivers were supplied to the attendees. The trial conducted between October 2015 and September 2018 reported high adherence to the intervention (93% for the facility-based arm and 73.4% for the village-based arm). The village-based intervention increased caregivers seeking of qualified care for pneumonia from government facilities by 79.3% ($p < 0.0001$), while the facility-based intervention increased by 68.9% ($p = 0.02$). The study concluded that the combination of structured pneumonia awareness sessions at the village level and the strengthened infrastructural facilities could enhance the qualified care-seeking behaviour for treatment of childhood pneumonia in the community.¹⁷

Rishabh Kumar and Nandita Saikia conducted a study, the aim of which was to analyse the seasonality of pneumonia mortality in India, which was made using join point regression analysis. The study was conducted in 2018-2020, and the data were obtained from the Health Management Information System (HMIS) to assess the incidence rate at a country level of the country, as well as the state level (Himachal Pradesh and Kerala). The Pneumonia-Specific Infant Mortality Rate (PSIMR) was determined by the

number of infant deaths from this disease and the ratio to the number of reported births in these two states at the time. The results demonstrated that there were significant seasonal differences in infant mortality from pneumonia in the selected area. Thus, the highest monthly PSIMR per 1000 births in India varied from 36.4 in July to 66.7 in January, while Himachal Pradesh mortality varied from 12.4 in August to 107.7 per 1000 in November. Meanwhile, Kerala had fewer cases of pneumonia mortality during the observed period. In general, national mortality decreased from January to August and increased from September to December, while Himachal Pradesh mortality peaked from December to March, decreased from April to August, and increased from September to November. According to the join point regression analysis, there was one join point in each year from 2018 to 2020. This tool helped identify significant changes in the mortality trend, which showed significant monthly variations. The researchers concluded that there were significant seasonal differences in pneumonia mortality rates among infants. The study also emphasizes the importance of seasonal and region-specific intervention strategies to control and prevent pneumonia and decrease infant mortality rates.¹⁸

Gothankar et al. (2018) conducted a community-based cross-sectional study in two districts of Maharashtra, India to determine the incidence and risk factors of childhood pneumonia in children. The study sampled 3,671 children and 2,929 mothers in 10,929 households and used the World Health Organization's (WHO) clinical definitions to estimate the occurrence of the disease and its risk factors in the study population. House-to-house surveys of the targeted households were conducted, the results analysed to establish a relationship between pneumonia and other variables of the study. The results of the analysis revealed that the incidence of Acute Respiratory Infection (ARI) and Pneumonia was 0.49 episodes per child per month and 0.075 episodes per child per year respectively. This is a lower incidence rate than the one reported by the national survey (16%).¹⁹

Mutalik and Raje conducted a cross-sectional study to ascertain the association between maternal education and socio-economic status with the knowledge, attitude, and practice (KAP) of mothers and their children on acute respiratory infections (ARI). The secondary high school students selected from Azad High School, Kasegaon were the participants of the study. Data pertaining to the definition of respiratory infections, causes, signs and symptoms, methods of treatment, and prevention measures were collected using a pre-structured and pretested questionnaire. The analysis of the data revealed that out of the total number of mothers, 68% of them had attained school education, 6.8% of them had college education, and 37% of them were illiterate. In terms of occupation, 54.7% of the mothers were farmers, 23.6% of them were labourers, 12.8% of them were housewives, and 8.8% of them were professionals. In terms of the socioeconomic status of families, 72.3% of families were of the middle class, 25.7% of them were of the lower class, and 2% were of the upper class. The study concluded that the knowledge, attitude, and practice of children on acute respiratory infections were significantly influenced by the mother's education and socioeconomic status.²⁰

Farooqui H, Jit M, Heymann DL, and Zodpey S (2015) conducted a modelling-based study "Burden of severe pneumonia, pneumococcal pneumonia and pneumonia deaths in Indian states: modelling based estimates". The objective of the study was to estimate the burden of severe pneumonia cases, number of pneumococcal pneumonia episodes and pneumonia deaths among under-five population in different Indian states. The study made use of a mathematical model to estimate the number of episodes of severe pneumonia which was based on the number of risk factors and population. The study estimated that India had 3.6 million severe pneumonia episodes and 0.35 million pneumonia deaths of under-five children in 2010. The states with highest burdens were Uttar Pradesh, Bihar, Madhya Pradesh and

Rajasthan. The study recommends improvement in pneumonia prevention, an increase in vaccination coverage and accessible healthcare services.²¹

A community based cross sectional study was carried out by Kumar G.S. et.al on "Prevalence of Acute Respiratory Infection among under-five children in Urban and Rural areas of Puducherry, India." It encompassed 509 individuals who were examined between October 2013 and February 2014; out of which 54.6% (278) were from urban area and 45.4% (231) were from rural area. The study found that there was an overall prevalence of ARI of 59.1% (301) among the selected population. It was found that children living in urban areas (63.7%) had a higher prevalence of ARI compared to those in rural areas (53.7%). Highest prevalence rate was found in age group 0-12 months (63.2%) followed by 25-60 months (59.5%) and then 13-24 months (52.6%). There was higher prevalence of ARI among boys (62.9%) compared to girls (55.1%). Prevalence was higher for children born with low birth weight of <2.5 kg, with two or more siblings and those living in overcrowded conditions.²²

A study by Lalneizo and Reddy (2010) evaluated the health status of children in the North Eastern states of India using data from National Family Health Survey-II (NFHS-II) and NFHS-III. The authors assessed child health indicators such as infant mortality rate (IMR), under-five mortality, immunization status, Vitamin A supplementation, morbidity and healthcare access in comparison to the national average. The study reported that the North Eastern states had better IMR and under-five mortality rates than the average for all India. On the other hand, the region had poor immunization coverage, low Vitamin A supplementation, high childhood morbidity and inadequate access to healthcare services. The study noted that children in the North Eastern states had good breastfeeding practices and consumption of Vitamin-A rich foods. It recommended more micro-level studies to elucidate reasons for variation in child health status.²³

In study carried out by Dhananjaya Sharma, Kumaresan Kuppusamy, Ashok Bhoorasamy, Department of Community Medicine-Melmaruvathur Adhiparasakthi Institute of Medical sciences and Research, Tamil Nadu during the period of October 2009 February 2010 on "Prevalence of acute respiratory infection (ARI) and their determinants in under five children" covering a study of population of 500 under five children, the study revealed that the overall prevalence of ARI is found to be 27%, 79.3% were from low class, 37.8% were illiterate mothers, 52.6% were those living in kutcha houses and 63.7% living in overcrowded houses, 67.4% used smoke producing fuel for cooking, 70.4% have inadequate cross ventilation, 55.6% have amongst those having history of parental smoking, 54.8% amongst are low birth weight children and 57.8% are malnourished children. Rural children (62.2%) were more affected than urban children. The present study has identified low socio-economic status, poor housing condition, cooking fuel use, birth weight and nutritional status as important determinants of ARI.²⁴

A study was carried out by Bipin Prajapati, Nitiben J Talsania, Mrudula K Lala and Kantilal N Sonalia from September 2008 to March 2009 in Ahmedabad district in Gujarat among the under-five age group of children titled "Epidemiological profile of acute respiratory infection (ARI) in under five age group of children." A cross-sectional study was carried out with a sample size of 500 under-five children residing in both urban and rural areas of Ahmedabad. The results showed that the prevalence of ARI was 22% of which 17.2% were from urban areas while 26.8% were from rural areas. The study highlighted the fact that preventive and control measures such as health promotional measures including right feeding practices, nutritional interventions and socio-economic measures play a great role in reducing ARI among the under-fives.²⁵

INTERNATIONAL

Vu QV et al. performed a cross-sectional survey of caregivers of children with acute respiratory infections (ARI) in Vietnam from January to May 2026, covering 350 participants. Vu et al. report that 70.9% of caregivers had adequate knowledge, while 95.1% demonstrated appropriate caregiving practices. Higher education was associated with increased odds of adequate knowledge (AOR 3.84, 95% CI: 2.23–6.62). Those with satisfactory knowledge were more likely to perform appropriate caregiving (AOR 13.32, 95% CI: 2.87–61.76). Vu et al. note that enhanced caregiver knowledge, as a result of providing nurse education, would facilitate timely recognition and promote appropriate home treatment for ARI in children.²⁶

Zarkoon JA, Kaleem A, and Mukhtar M performed a pre-post educational intervention study to evaluate the efficacy of a purpose-specific educational programme in promoting caregivers' knowledge and practices regarding acute respiratory infections (ARIs) in children below five years of age. This study was conducted in the paediatric department of Sandeman Provincial Hospital, Quetta, Balochistan, between June 2025 and March 2026. There were 72 caregivers enrolled in the study. Information on baseline clinical and physiological data and caregivers' knowledge and practices were obtained using a 16-item questionnaire and a 9-item questionnaire, respectively. As expected, there was a significant improvement in caregivers' knowledge of ARIs following the intervention. Specifically, the percentage of correct answers increased markedly from 12.8% to 43.2% after the intervention, and this change was found to be statistically significant ($p < 0.001$; Cohen's $d = 1.27$). Similarly, recognition of important signs of ARIs was also significantly improved after the intervention; for example, the percentage for fast breathing and chest indrawing increased by 40.3 and 30.6 percentage points, respectively. Moreover, appropriate self-reported practices among caregivers also increased from 18.4% at baseline to 52.3% after the intervention, which is also a large effect size ($d = 2.41$). The authors concluded that a structured approach to teaching caregivers can successfully bridge the gap in their knowledge and practices in relation to ARIs in children under five.²⁷

In 2025, Ashrafur Rahman Alif et al. conducted a literature review on the burden of childhood pneumonia in Bangladesh to assess the incidence, mortality rate, risk factors, and potential interventions to reduce the death rate of children under five. The authors used the PRISMA framework and evaluated 17 research studies conducted in Bangladesh. The article concluded that childhood pneumonia is still a public health problem in the country, with the number of cases ranging between 310 and 511 per 1000 child-years and the mortality rate of approximately 4 per 1 000 live births. Additionally, the review identified that the lack of appropriate living conditions, health care services, and children's health status contribute to the emergence of pneumonia. Finally, the researchers concluded that Bangladesh's achievements in immunisation, nutrition, early diagnosis, treatment, and prevention of pneumonia and other diseases make essential progress towards attaining the SDGs.²⁸

Meishan Lin et al (2025) conducted a study to ascertain the spectrum and prevalence of respiratory pathogens among the 923 hospitalised children aged 0–5 years diagnosed with community-acquired pneumonia in China. The researchers used Multiplex RT-PCR, blood investigations, CRP, PCT, and sputum cultures to identify the causative agents and pathogens of the illness. About 71.4% of the children tested positive for at least one respiratory pathogen. The most prevalent pathogens identified among the children were RSV, *Mycoplasma pneumoniae*, HRV, HMPV, and HPIV. The prevalence of these pathogens differed depending on the children's age and sex, with RSV dominant in infants and *Mycoplasma pneumoniae* in older children. Moreover, bacterial co-infections such as *Streptococcus*

pneumoniae, *Haemophilus influenzae*, and *Moraxella catarrhalis* were also detected. The study concluded that identifying the pathogens and laboratory markers of pneumonia will enhance the diagnosis and management of the infection among children.²⁹

Shrestha et al. (2024) conducted a study on factors contributing to pneumonia among children under five years of age in Nepal at the Patan Academy of Health Sciences, Nepal. The study used the Nepal Demographic and Health Survey (NDHS) 2016 data. The objective of the study was to determine the influence of contributing factors on pneumonia among children. The study established that recent diarrhoea, low wealth index, and intestinal parasitic infection were factors that contribute to pneumonia. Moreover, the study recommends the prevention of diarrhoea and improvement in child health to reduce the incidence of pneumonia among under-five children.³⁰

Awuonda et al. (2024) conducted a study to determine caregivers' perceptions of childhood pneumonia in Western Kenya using Bourdieu's Theory of Practice as an analytical framework. This study explored the role of social and cultural factors in caregivers' understanding of pneumonia's epidemiology. The authors applied a qualitative methodology and used research instruments such as individual semi-structured in-depth interviews, focus group discussions, and participant observation. Fourteen caregivers were recruited to participate in the study, which included eleven observations. The results of the research revealed that caregivers believed that cold exposure, hereditary factors, and pathogens contributed to pneumonia. Cold exposure, which included the weather and the use of motorcycles, was the most common cause of pneumonia among caregivers. Few caregivers knew that pathogens could cause pneumonia, while others confused asthma with pneumonia, which indicated that they did not differentiate between the two illnesses.³¹

Samar El-Desokey Mohammed Ebeed et al. conducted a descriptive study in 2023 to evaluate compliance to preventive behaviours related to respiratory tract infections among mothers of under-five children. The study was conducted in Nawag rural village, Tanta Centre, El Gharbia Governorate, Egypt. The sample size was 300 mothers who were selected by a convenience sampling technique. The researchers used a structured interview schedule to collect information from the participants. The tool had sections on the socio-economic status of the mothers, health history of their children, knowledge about respiratory tract infections, and compliance with preventive behaviours. The researchers concluded that over a third of the mothers had a low level of knowledge, while a third had a moderate level of knowledge and a quarter had a high level of knowledge about respiratory tract infections. The study also found that over a third of the mothers had a moderate to high level of compliance with the preventive behaviours while 17.3% of them had a low level of compliance. The study found that there was a positive significant correlation between total knowledge, compliance, and the family's socio-economic status ($p < 0.001$). The researchers recommended continued health education and orientation of rural mothers of under-five children to increase their knowledge and compliance.³²

Dan Kajungu, Betty Nabukeera, Michael Muhoozi, Donald Bruce, NdyoMugenyi, Mercy Consolate Akello, Collins Gyezaho et al conducted a cross-sectional study on 27th June 2023 in Iganga and Mayuge Health and demography surveillance site (IMHDSS) cohort in Eastern Uganda on "Factors associated with caretakers' knowledge, attitude and practices in the management of pneumonia for children aged five years and below in rural Uganda." In the study data were collected through interviews from 649 caretakers of children under the age of five. Overall, 28% had good knowledge, 36% had moderate knowledge and 35% had poor knowledge. The following factors, older age (OR=1.63, 95% CI (1.05–2.51)), Tertiary education (OR=4.92, 95% CI (2.5–9.65)) and being married

(OR=1.82, 95% CI (1.05–3.15)) were associated with having good knowledge. Age above 35 years (OR=1.48, 95% CI (1.03– 2.11)) and main source of livelihood were associated with good attitude and lastly being female (OR=2.3, 95% CI (1.23–4.37)), being a Muslim (OR=0.5, 95% CI (0.35–0.75)) and being a farmer (OR=0.5, 95% CI (0.33–0.85)) were associated with being a good caretaker practice. The overall conclusion was that the caretakers of children under five years of age have relatively adequate knowledge about the signs and symptoms of pneumonia, risk factors, and treatment measures. Higher education, being married and being a salary earner were associated with better knowledge about pneumonia, while being female, being a Muslim, and being a peasant farmer were associated with good practice.³³

In 2023, Dharel S., Shrestha B., and Basel P. conducted a study titled “Factors associated with childhood pneumonia and care seeking practices in Nepal: Further analysis of 2019 Nepal Multiple Indicator Cluster Survey.” The authors through the study aimed to determine the factors associated with childhood pneumonia and healthcare seeking practices of the under-five children. To achieve the goal, the participants used secondary data from the Nepal Multiple Indicator Cluster Survey (MICS) 2019, which allowed them to explore the risk factors associated with the disease and seek healthcare resources among the parents of sick children. A total of 6,658 children were included in the study. The authors identified the most vulnerable groups to the illness as children aged 0-23 months, using the following criteria: those living in rural areas, underweight children, and those whose mothers are smoking. The data demonstrated that fewer children were treated in public health facilities for the condition, and many received inappropriate treatment. The authors suggest that improving the overall healthcare status of a community and ensuring early treatment may contribute to reducing the number of cases of the disease among the under-five population in the country.³⁴

Pokhrel B, Rokaya GB, Parajuli K, Pokhrel Subedi B conducted a community-based cross-sectional study among the mothers of children under five in Hima rural municipality, Jumla, Nepal, to determine the level of knowledge about acute respiratory infection (ARI) and home care practices toward the illness. Another purpose of the study was to identify the factors associated with the mother’s knowledge and home care practices. Data were collected using face-to-face interviews with mothers using pretested semi-structured questionnaires through systematic random sampling. The results revealed that 94.9% had heard of ARI. However, 24.9% of them had a high level of knowledge about the illness. Concerning home care practices, 70.8% of mothers kept the room warm by closing windows and doors, while 61.1% preferred the Titepati/Tito leaf tea to prevent and control the illness. In addition, 59.1% of the respondent’s breast fed their children more frequently when ARI happened. The study reported that most of the ARI cases were managed at home. Over half of the mothers selected health facilities for treatment if the illness persisted. Meanwhile, less than half of the respondents accessed a health post for care when the child’s condition did not improve at home. The study concluded that although most mothers had heard of ARI, only a small proportion of them had adequate knowledge about the illness. Therefore, there is a need for health education and appropriate guidance on ARI home care practice among the mothers of under-five children.³⁵

Amare Tariku et al. conducted a study in 2021 to determine pneumonia prevention, care-seeking behaviour, and treatment of suspected cases among under-five children in Ethiopia. The study encompassed a broad range of topics from the household level to primary health care institutions. Firstly, the study involved 5,714 households, 169 health posts with 276 health extension workers, and 155 health centres with 175 staff. When questioned if caregivers know how to treat pneumonia, it was

found that only 21% knew the treatment. However, 46% (95% CI: 25-68) of caregivers sought care at a health facility for suspected pneumonia. Only 27% (95% CI: 12-51%) of the children who needed antibiotics were treated with antibiotics while 41% of the caregivers had received full immunisation. Additionally, 64% of health extension workers identified fast breathing or difficult breathing as signs of suspected pneumonia. In addition, 88% of health workers recommended antibiotics as treatment. In conclusion, the study revealed that despite a good understanding of pneumonia at the community level, health workers need more assistance, and caregivers need to be more educated on ways to prevent and manage pneumonia.³⁶

Daniel Onyango Amuka, Daniel Onguru, and George Ayodo executed a cross-sectional mixed-method study at Migori County Referral Hospital in Kenya in January 2020, which was titled “Knowledge, Perceptions and Practices of Caregivers on Pneumonia among Children aged under 5 Years in Migori County Referral Hospital, Kenya”. This study consisted of 209 pairs of child and caregiver. The author made use of both the systematic and convenience sampling techniques. STATA 10 was used to enter and analyse the data. The incidence of pneumonia was identified to be 27%. More than 90% of caregivers were revealed to lack sufficient knowledge about the etiology, risk factors, and preventive strategies for the illness. The management consisted of self-treatment with over-the-counter drugs, and for most of the children, care-seeking began on the second day and later days after the perceived onset of illness. The dietary practices of caregivers were also revealed to be poor in relation to pneumonia. Even though the majority (87.1%) of caregivers were aware of pneumonia, their knowledge and practices regarding it were identified as inadequate, while their perception of pneumonia was adequate. Caregivers’ knowledge and practices concerning childhood pneumonia are low. The overall conclusion was that health education efforts should be implemented at the household and community level to improve knowledge and encourage appropriate practices for pneumonia through selective interventions such as radio, television, and health campaigns.³⁷

In 2020, Shyam Sundar Budhathoki et al. conducted a study, which aimed to establish a relationship between HAP and childhood pneumonia in Nepal using the 2006, 2011, and 2016 Nepal Demographic Health Survey data. The authors described the epidemiology of childhood pneumonia over a ten-year period and identified major risk factors, which included the use of polluting fuels and the absence of a separate kitchen. The results revealed a decline in the prevalence of the condition. In 2016, however, it was found that children who live in households where solid fuels were used, were almost twice as likely to suffer from the illness (ARR 1.98, 95% CI 1.01-3.92) compared to their peers who reside in households without a kitchen. The PAF of pneumonia was estimated at 39.8% for the use of polluting fuels and 30.9% for the lack of separate kitchen. Although the prevalence of the disease is declining, its prevention remains a matter of concern due to the significant association with HAP.³⁸

Nyimas Heny Purwati, Yeni Rustina, and Bambang Supriyatno conducted a descriptive qualitative study at a public hospital in Jakarta, Indonesia, between 10 December 2019 and 28 January 2020. The research was titled “Knowledge and healthcare-seeking behaviour of family caregivers of children with pneumonia: A qualitative study in an urban community in Indonesia.” The study involved ten family caregivers of children with pneumonia, and data were collected through semi-structured interviews. The audio recordings were transcribed verbatim, and the data gathered were analysed using content analysis. The results revealed that family caregivers, especially mothers, had limited knowledge of pneumonia, considering it to be just a common cold, and that they were unaware that pneumonia can be transmitted. The first step in the healthcare-seeking behaviour of the family

caregivers was the use of traditional medicine. When the symptoms persisted, the caregivers took their children to the nearest health centre. If the symptoms were found to remain, they went to the hospital. The location, condition, services provided, and staff attitude in the health centre were considered when choosing a place for the sick child in cases of sickness. The overall conclusion was that living in an urban area does not guarantee that the family caregiver has adequate knowledge of pneumonia and appropriate healthcare-seeking behaviour. Therefore, nurses ought to provide comprehensive education on pneumonia, including knowledge of the symptoms and treatment management, to improve family care and reduce pneumonia-related deaths. Integrated management of sick children was advised to ensure that the family caregiver of children with pneumonia gets treatment as soon as possible.³⁹

Le Roux et al. carried out the Drakenstein Child Health Study to ascertain the incidence, severity, and risk factors of pneumonia during the first year of life in a cohort of South African births (2018). From a total number of 697 children, 141 cases of pneumonia were reported, with an incidence of 0.27 per child-year. Severe cases of pneumonia accounted for 23% of cases, and two deaths were reported to have been caused by pneumonia. The study found that risk factors for higher pneumonia incidence were maternal HIV, maternal smoking, male sex, and malnutrition. The study can be used to advocate for the need to intensify prevention of childhood pneumonia.⁴⁰

Osarogiagbon WO and Isara AR conducted a descriptive cross-sectional study to determine caregivers' knowledge of and home-based practices for acute respiratory infections (ARI) among children below five years of age in an urban community in Edo State, Nigeria. The researchers recruited 346 caregivers via multistage sampling and utilised a pretested, researcher-administered questionnaire to gather information. They found that although awareness of ARI was relatively high, most caregivers had inadequate knowledge about its symptoms, causes, and warning signs. Only 12 caregivers (3.5%) had good knowledge of ARI symptoms, while only 9 caregivers (2.6%) had good knowledge of its danger signs. Various traditional and homemade remedies were commonly used during ARI episodes, while shea butter oil (orioyo) was the most frequently reported home remedy used by 81.1% of respondents. The researchers concluded that though awareness of ARI was relatively high among caregivers, it did not always translate to adequate knowledge. Moreover, the rampant use of traditional home remedies revealed the need for increased caregiver education to promote appropriate recognition and management of ARI among young children.⁴¹

Shireen Qassim Bham et al. conducted a cross-sectional survey assessing mothers' knowledge, attitude, and practices towards acute respiratory infection (ARI) among children below five years of age. The study was carried out in the Department of Paediatrics, Darul Sehat Hospital, between December 2014 and February 2015. Three hundred thirty-five (335) mothers participated in the study. The participants were asked to respond to questionnaires administered by interviewers. The questionnaires were translated from English to Urdu to ensure that participants understood the questionnaires. The study found that two hundred twenty-eight (228) children out of the three hundred thirty-five (335) children involved in the investigation had acute respiratory infection (ARI). The research studied the knowledge, attitude, and practices of the participants towards acute respiratory infection (ARI) and pneumonia. The study highlighted the importance of improving knowledge and taking appropriate measures towards the treatment of acute respiratory infection (ARI) among the mothers taking care of children below five years because of their high risks of being infected with the disease.⁴²

AJafari Farhad, Aminzadeh Malihe, Azam Fatemel conducted a cross-sectional study, together with Samadpour Mahmood (2013), entitled "The knowledge, attitude and practice of mothers concerning

acute respiratory infection in children" at the Iman Zaman Health Centre in Tehran, Iran. The study comprised 255 mothers. Data were gathered by way of administered questionnaires. The findings revealed that out of the total number of 255 mothers, 53 mothers took no therapeutic measures before visiting a doctor. The most frequent actions were using cold pills and syrup (22.1%), acetaminophen syrup (9.6%) and diphenhydramine (7.3%), while only 5% used antibiotics. Over 50% admitted that their practice was grounded in their own experiences. No significant relationship was discovered between the mothers' attitude and their performance. On the contrary, attitude and performance were not correlated to the mother's education level and occupation.⁴³

Banstola and Banstola (2013) conducted a study entitled "The Epidemiology of Hospitalization for Pneumonia in Children under five in the Rural Western Region of Nepal." The research was conducted at the Dhaulagiri Zonal Hospital in Nepal, where a descriptive cross-sectional study was carried out from July 2008 to August 2011 with the purpose of determining the characteristics of hospitalised children with pneumonia. The results of the research indicated that male children, aged 29 days to 1 year, were more likely to be admitted with a diagnosis of pneumonia during the rainy and winter months. The leading bacterial agent causing pneumonia was *Streptococcus pneumoniae*, while the leading viral agent was Respiratory Syncytial Virus. The study recommended implementing appropriate measures to prevent and control pneumonia and emphasizes community-based case management and better health services for children.⁴⁴

Simiyu D.E et al conducted a survey titled "Mothers knowledge, attitude and practices regarding ARIs in children in Barigo District, Kenya", in 2003. 309 mothers were interviewed in this survey. The data revealed that the mean age of the mothers was 31.5 years, while 34% were completely illiterate. Only 18% of the respondents could describe pneumonia appropriately, while 60.2% knew that measles immunisation prevented the illness. 87.1% of the respondents would seek health service intervention for severe ARI. The study concludes that the respondents had good knowledge of the mild form of ARI but failed to adopt the required practices. The research also revealed that ARI leads to high mortality rates due to the inability to identify severe cases early enough to receive interventions.⁴⁵

A study carried out by Valdes Roque A.I and Martinez Canelyo Hon, titled "Educational level of mothers and their knowledge, attitude and practices concerning respiratory infections of under-five children" in Sain in 1999, consisted of an assessment of five variables relating to knowledge, attitude and practices of under-five children affected by various acute respiratory infections (ARIs). Two groups of mothers were interviewed: mothers of children who attended a polyclinic in the province of Havana, and mothers of children who were hospitalised in the respiratory unit of a paediatric hospital in the province of Havana. The five variables identified were the mother's educational level, the mother's age, the mother's place of residence, the number of children, and whether or not she was employed in the health service sector, as well as the interaction between the first variable and the other four. A questionnaire was administered in order to determine the respondents' ARI KAP (knowledge, attitude and practices) level. The study found that a lack of good ARI KAP among the mothers of the hospitalized children may have contributed to the children being hospitalized. It also found that the level of education was the most important predictor of adequate knowledge among the mothers, and therefore serves to indicate the importance of education in enhancing the preventive and curative efforts of the mothers of children suffering from ARIs.⁴⁶

A 1994 study was carried out by Thein Aung, Khon Myat, Kyaw Thinn and Aye Ay Thein investigated titled "Knowledge, Attitude and Practices of Mothers on childhood Acute Respiratory Infection" in

Yankon, Myanmar. In both rural and urban areas, a total of 300 mothers were interviewed on their Knowledge, Attitude and Practices (KAP) regarding Acute Respiratory Infection, and the results were compared. Most had traditional beliefs about the causes of ARI, and a few knew the real cause - 21% in urban and only 1% in rural areas. As for the signs and symptoms of pneumonia, almost 70% of mothers recognized fever, cough, and difficulty breathing as symptoms (32% urban and 35% rural). Self-medication, an undesirable practice, was common among mothers in both groups (59% urban and 61.5% rural). The home care section showed that about 30% (29% urban and 33% rural) fed their children the usual amount of food, while only 10% gave extra fluids to children having ARI. Thus, the mothers' KAP about ARI was inadequate.⁴⁷

Teka T and Dagnew M (1995) conducted a descriptive study to "assess the knowledge of mothers of under-five regarding acute respiratory infection" in a selected area of Gondar, Ethiopia. Using a simple random method, they selected 132 subjects, and data were collected by means of interviews. According to the study's findings, most of the mothers correctly recognized symptoms of pneumonia, such as increased respiratory rate (77.3%), high fever (76.5%), and reduced feeding (62.8%). The researcher recommended providing effective health education to mothers concerning acute respiratory tract infection.⁴⁸

A research project, conducted by Wagar Hussain, Nasim Mahmood, Sajid Magbool, and Muhammad Anwar (1992-93), explored the methods mothers in the community used to manage acute respiratory infections, and it was conducted in Lahore, Pakistan. In total, 50 mothers each of whom had at least one child aged between 2 months and 5 years with an ARI, were selected from 3 different settings namely a lower-class locality, middle class locality, and the hospital's outpatient department. Results showed that the majority of mothers opted for allopathic treatment, which was the case for 81% in the community (lower- and middle-class localities combined) and 92% in the OPD, while home treatment was opted for by 64% and 74%, respectively. The four home remedies most frequently mentioned by respondents from the middle-class locality were honey at 48%, soup (broth) at 40%, tea at 38%, and applying Vicks (a camphor preparation) to the chest at 32%. The home treatments reported by mothers from the lower-class locality were similar, the only difference being their socio-economic status.⁴⁹

CHAPTER III

RESEARCH METHODOLOGY

RESEARCH METHODOLOGY

Research methodology is a systematic framework that guides the conduct of a research/study. It orients the researcher on the selection of suitable methods for collection, processing, analysis and interpretation of data. The methodology of the present study encompasses the research approach, research design, schematic presentation of research methodology, variables, setting, study population, sampling technique, sample size, criteria for sample selection, data collection instrument, data collection procedure, scoring and interpretation, and plan for data analysis. The present study was conducted to assess the awareness and practice of caregivers regarding childhood pneumonia in a selected urban community of East Khasi Hills District, Meghalaya.

RESEARCH APPROACH

A research approach provides an overarching framework and plan for conducting a study, including the methods used for data collection, analysis and interpretation. For the present study, a quantitative

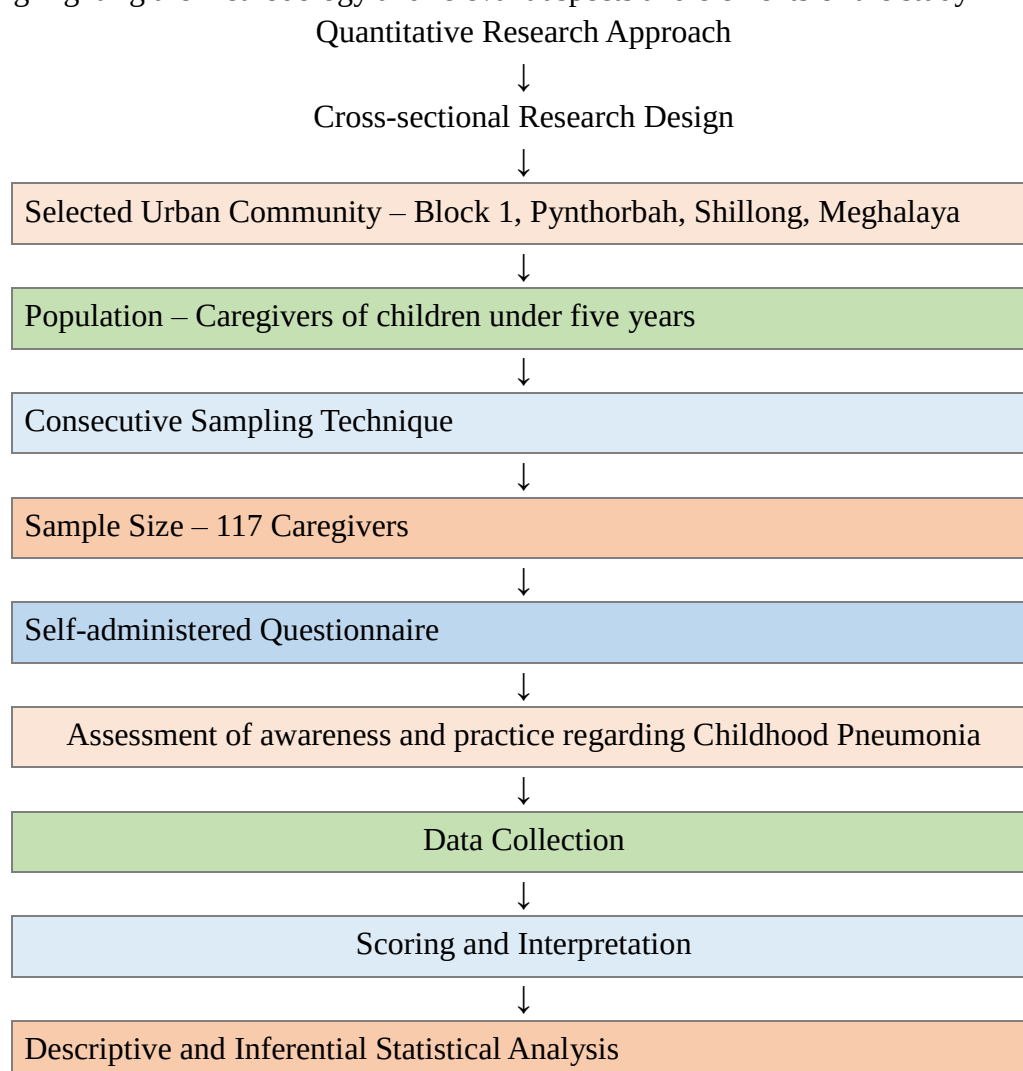
research approach was adopted to systematically collect statistical data on the awareness and practice of caregivers about childhood pneumonia. The quantitative approach enabled the researchers to measure the caregivers awareness and practice using scores and to analyse the findings statistically.

RESEARCH DESIGN

The research design provides the general blueprint for conducting a research study. It outlines how the researcher gathers and examines data to meet the study's objectives. A cross-sectional research design was employed in the current study. This design enabled the researchers to evaluate the current level of awareness and practice regarding childhood pneumonia among caregivers at a specific point in time. It also enabled the researchers to examine the relationship between caregivers awareness and selected demographic variables.

SCHEMATIC PRESENTATION OF RESEARCH METHODOLOGY

Flowchart highlighting the methodology and relevant aspects and elements of the study



RESEARCH VARIABLES

Main study variables

Awareness:

- The level of awareness of caregivers regarding childhood pneumonia.

Practice:

- The level of practice of caregivers regarding childhood pneumonia.

Selected demographic variables

The study considered selected demographic variables such as:

- Age
- Gender
- Educational status
- Occupation
- Religion
- Number of children under five years in the family
- History/episode of pneumonia among children under five years
- Vaccination status of the child
- These variables are reflected in the analysis tables and association tests.

RESEARCH SETTING

- The research setting refers to the place where the study is conducted.
- The present study was conducted in a selected urban community, Nongmensong, Umkdait and Pynthorbah, Block-1, Shillong, Meghalaya, East Khasi Hills District.

ETHICAL CONSIDERATION

- The research study topic was approved by the Research Committee, College of Nursing, NEIGRIHMS, NEIGRIHMS Scientific Advisory Committee (NSAC), Acad/PG/5/2024-Academics, dated Shillong the 15th September, 2025 and Institutional Ethical Committee (IEC) NEIGRIHMS, NEIGR/IEC/M5/T11/25 dated 11th February 2026. Approval for aspects of the study related to the health centres was obtained from the Directorate of Health Services Shillong, Meghalaya.

STUDY POPULATION

- The study population refers to the entire group of individuals who possess the characteristics relevant to the study.
- For the present study, the population consisted of caregivers of children under five years of age residing in the selected urban community.

SAMPLING TECHNIQUE

- Sampling technique refers to the method used by the researcher to select participants from the study population.
- For the present study, consecutive sampling technique was adopted. Eligible caregivers who met the specified inclusion criteria and were available during the period of data collection were selected consecutively until the required sample size of 117 caregivers was obtained.

SAMPLE SIZE CALCULATION

By using the formula:

$$n = \frac{Z^2 \cdot p \cdot q}{d^2}$$

d^2

Were,

n=sample size

z^2 = square value of the standard deviation score that refers to the area under a normal distribution of values

p= percentage category for which we are computing the sample size

q= (1-p)

d^2 =square value of one half of the precision interval around the sample estimate

z=1.96; it is the standard deviation score for a 95% set interval

p=16.1*

$$n = \frac{(1.96)^2 \times (0.161) (1-0.161)}{(0.07)^2}$$

$$n = 105.9 = 106$$

(*p is taken according to an article published in the National Journal of Community Medicine, 2019)

CRITERIA FOR SAMPLE SELECTION

a. Inclusion criteria

The following caregivers were included:

- Caregivers of children under five years of age.
- Caregivers who were willing to participate in the study.

b. Exclusion criteria

The following caregivers were excluded:

- Caregivers who could not read or write.
- Caregivers of children who were below 18 years of age.

DEVELOPMENT OF THE DATA COLLECTION INSTRUMENT

The data collection instrument was developed as a self-administered semi-structured questionnaire to assess caregivers awareness and practice regarding childhood pneumonia.

The questionnaire was organised according to the objectives of the study and included questions related to demographic characteristics, awareness regarding childhood pneumonia and practices related to the prevention and care of childhood pneumonia.

The final questionnaire contained:

Section I: Demographic data

Section II: 11 awareness questions

Section III: 8 practice questions

Thus, the questionnaire contained 27 numbered items in total, including 8 demographic items, 11 awareness items and 8 practice items.

DESCRIPTION OF DATA COLLECTION TOOL

A self-administered semi-structured questionnaire was used as the data collection instrument.

The questionnaire consisted of three sections:

Section I – Demographic Data

This section collected information regarding the demographic and child-related characteristics of the caregivers.

It included 8 items, covering:

- Age
- Gender
- Educational qualification
- Occupation
- Religion
- Number of children under five years in the family
- Episode of pneumonia in the child under five years during the past six months
- Vaccination status of the child.

Section II – Awareness on Childhood Pneumonia

This section was designed to assess the awareness of caregivers regarding childhood pneumonia.

It consists of 11 multiple-choice questions, with four options for each question and one correct answer.

The questions cover areas such as:

- Body part affected by pneumonia
- Causes of pneumonia
- Risk factors
- Age group at greater risk
- Environmental/living conditions
- Signs of severe pneumonia
- Spread of pneumonia
- Protection during the first six months
- Keeping the child warm
- Appropriate food during pneumonia
- Possible complications of untreated pneumonia

Section III – Practice on Childhood Pneumonia

This section was designed to assess the practices of caregivers regarding childhood pneumonia.

It consists of 8 questions, numbered 12–19.

The questions assess practices related to:

- Recognition of symptoms in a child with pneumonia
- Action taken when the child develops fever
- Complementary feeding after six months
- Action when the child refuses breastfeeding and food
- Cleaning nasal/throat secretions
- Handwashing before feeding

- Preventing contact with people having cough and cold symptoms
- Healthcare-seeking when the child has cough and fast breathing

CONTENT VALIDITY OF THE TOOL

The research tools were validated by 10 (Ten) experts from various departments such as the Department of Paediatrics, Department of Community Medicines, Department of Obstetrics and Gynaecology, Department of Respiratory Medicines and as well as nursing faculties prior to collection of data. The experts were requested to assess the questions for clarity, appropriateness, relevance and suitability of the related subject. The tools were structured and refined as suggested by the experts in consultation with the guide and co-guides. The tools were then translated into Hindi and Khasi by the language experts.

PILOT STUDY

A pilot study is a small-scale investigation carried out prior to the main study to evaluate the feasibility, practicality, clarity and appropriateness of the research procedures and instrument. Once the required permission had been obtained from the relevant authority, the pilot study was carried out among 30 caregivers of under-five children in the chosen urban community of the Nongmensong Sub-centre, which falls under the Rynjah State Dispensary, East Khasi Hills District, Meghalaya. The participants were selected through the consecutive sampling technique. The objective of the pilot study was to assess the feasibility of the study, clarity and comprehensibility of the self-administered questionnaire, and identify any challenges experienced by the caregivers while completing the questionnaire.

DATA COLLECTION PROCEDURE

Prior to commencing data collection, the necessary approvals were obtained from the Thesis Review and Monitoring Committee (TRMC) and the Institutional Ethics Committee (IEC), NEIGRIHMS, Shillong. Formal consent was obtained from the relevant authorities of the selected study setting to conduct the study. Data collection was carried out among caregivers of under-five children in the selected urban community of Nongmensong Sub-centre under the Rynjah State Dispensary, East Khasi Hills District, Meghalaya. The participants were selected using the consecutive sampling technique in accordance with the pre-established inclusion and exclusion criteria. The researcher approached the caregivers who met the eligibility criteria and explained the purpose and details of the study. The participants were assured that any information provided by them would be kept confidential and used exclusively for the study. Written informed consent was obtained from the participants prior to the collection of data. The data were collected through a self-administered questionnaire comprising items related to caregivers awareness and practices regarding childhood pneumonia. The questionnaire was distributed to the eligible caregivers who were instructed to complete it individually on their own. The investigator was available to address any difficulties in understanding the instructions or to address queries, without influencing the participants' responses.

At the end of the process, the questionnaires were collected and checked for completeness. The collected data were subsequently organised, coded, and entered into the database for analysis. Descriptive statistics, including frequencies and percentages, and inferential statistics, including the chi-square test, were used to analyse the data in accordance with the objectives of the study.

SCORING CRITERIA

Scoring was done separately for Section II (Awareness) and Section III (Practice) of the questionnaire. For the awareness items, each correct response was awarded a score of 1, while each incorrect response or “don't know” response was awarded a score of 0. The total awareness score was calculated by summing the scores obtained by the caregiver.

For the practice items, each appropriate/good practice was awarded a score of 1, while each inappropriate/poor practice was awarded a score of 0. The total practice score was obtained by summing the scores of all practice items.

INTERPRETATION

Based on the total scores obtained, the caregivers level of awareness regarding childhood pneumonia was categorised into two levels:

Score	Level of awareness
8-11 $\geq$ 75%	Adequate awareness
0-7<75%	Inadequate awareness

Similarly, the practice scores were categorised into two levels:

Score	Level of practice
6-8 $\geq$ 75%	Good practice
0-5<75%	Poor practice

PLAN FOR DATA ANALYSIS

The data will be analysed in accordance with the study's objectives.

The collected data set will be coded, tabulated, and analysed using appropriate descriptive and inferential statistics.

Descriptive statistics: Frequencies and percentages will be used to describe the selected demographic characteristics of the caregivers and determine the level of awareness and practice on childhood pneumonia.

Inferential statistics: The Chi-square test and Fischer's exact test will be used to assess the association between caregivers level of awareness about childhood pneumonia and selected demographic variables.

The level of significance will be set at $p \leq 0.05$.

The data will be analysed using the Statistical Package for the Social Sciences (SPSS).

SUMMARY

This chapter discussed the methodology of the present study. This included the research methodology, framework, variables and context, ethical considerations, study population, sampling technique, sample size calculation, criteria for sample collection, development of the data collection tool, description of the data collection tool, content validity, reliability of the tool, pilot study, data collection procedure for the final study, scoring criteria, interpretation and plan for data analysis. The following chapter will discuss and interpret the findings and provide an analysis of the data.

CHAPTER IV

ANALYSIS, INTERPRETATION AND DISCUSSION

This chapter presents the statistical analysis of the data that were collected. The data gathered from the caregivers were analysed using descriptive statistics (frequencies and statistics) and inferential statistics (Chi-square test and Fisher's exact test); the data were subsequently presented in the form of tables.

ORGANIZATION OF THE FINDINGS:

The data are presented under the following headings:

Section 1: Findings related to demographic variables of caregivers in selected area of urban community.

Section 2: Findings related to the level of awareness of caregivers on childhood pneumonia

Section 3: Findings related to the association of caregivers awareness regarding childhood pneumonia with selected demographic variables.

Section 4: Findings related to the association of caregivers practices regarding childhood pneumonia with selected demographic variables.

TABLE 1(a): Frequency and percentage distribution of the demographic characteristics of caregivers.
(N= 117)

Demographic Variables	Frequency (f)	Percentage (%)
Age in years		
18–25	17	14.53
26–35	62	52.99
36–45	28	23.93
46 and above	10	8.55
Gender		
Female	92	78.63
Male	25	21.37
Educational Status		
Primary	19	16.24
Middle	19	16.24
Secondary	40	34.19
Graduate & above	39	33.33

Table1(a) reveals that the majority of caregivers, 62 (52.99%), belonged to the age group of 26–35 years, while 92 (78.63%) were females. Regarding educational qualification, 40 (34.19%) had secondary education, followed by 39 (33.33%) who were graduates and above.

TABLE 1(b): Frequency and percentage distribution of the demographic characteristics of caregivers.
(N=117)

Demographic Variables	Frequency (f)	Percentage (%)
Occupation		
Non-working	73	62.39

Working	44	37.61
Religion		
Christian	52	44.44
Hindu	60	51.28
Islam	4	3.42
Others	1	0.86

Table 1(b) reveals that most of the caregivers, 73 (62.39%), were non-working. With regard to religion, 60 (51.28%) caregivers were Hindus, followed by 52 (44.44%) Christians.

Table 1(c): Frequency and percentage distribution of children under five years according to birth order. (n = 163)

Birth order of child	Frequency (f)	Percentage (%)
First child	117	71.78
Second child	39	23.93
Third child	7	4.29

Table 1(c) shows the distribution of the 163 children under five years according to birth order. The majority of the children (71.78%) were first-born, followed by second-born (23.93%) and third-born (4.29%).

Table 1(d): Frequency and percentage distribution of children under five years as per history of pneumonia episode during the past 6 months. (n=163)

Child	Episode of pneumonia	Frequency (f)	Percentage (%)
First child	Yes	10	8.55
	No	107	91.45
Second child	Yes	0	0.00
	No	39	100.00
Third child	Yes	0	0.00
	No	7	100.00

Table 1(d) shows the distribution of children under five years according to episodes of pneumonia during the past six months. Among the 117 first-born children, 10 (8.55%) had experienced an episode of pneumonia, while 107 (91.45%) had not. Among the 39 second-born children, 39 (100.00%) had no reported episode of pneumonia. Similarly, among the 7 third-born children, 7 (100.00%) had no reported episode of pneumonia.

Table 1(e): Frequency and percentage distribution of children under five years according to vaccination status. (n = 163)

Birth order of child	Vaccination status	Frequency (f)	Percentage (%)
First child (n = 117)	Completed	112	95.73
	Not Completed	5	4.27
Second child	Completed	38	97.44

(n = 39)	Not Completed	1	2.56
Third child (n = 7)	Completed	7	100.00
	Not Completed	0	0.00

Table 1(c) shows the vaccination status of children under five years according to birth order. Among the 117 first-born children, 112 (95.73%) had completed vaccination, while 5 (4.27%) had not completed vaccination. Among the 39 second-born children, 38 (97.44%) had completed vaccination and 1 (2.56%) had not completed vaccination. All 7 (100.00%) third-born children had completed vaccination.

TABLE 2: Frequency, percentage, mean and standard deviation of caregivers according to level of awareness regarding childhood pneumonia. (N = 117)

Level of Awareness	Frequency (f)	Percentage (%)	Mean $\pm$ SD
Inadequate Awareness	48	41.03	7.91 $\pm$ 2.07
Adequate Awareness	69	58.97	

Table 2 reveals that more than half of the caregivers, 69 (58.97%), had adequate awareness, whereas 48 (41.03%) had inadequate awareness regarding childhood pneumonia. The mean awareness score was 7.91 $\pm$ 2.07, indicating a satisfactory level of awareness among caregivers.

TABLE 3: Frequency, percentage, mean and standard deviation of caregivers according to level of practice regarding childhood pneumonia. (N = 117)

Level of Practice	Frequency (f)	Percentage (%)	Mean $\pm$ SD
Poor Practice	37	31.62	6.09 $\pm$ 1.56
Good Practice	80	68.38	

Table 3 reveals that the majority of caregivers, 80 (68.38%), had good practice, while 37 (31.62%) had poor practice regarding childhood pneumonia. The mean practice score was 6.09 $\pm$ 1.56, indicating a relatively good level of practice among caregivers.

TABLE 4(a): Association of caregivers awareness regarding childhood pneumonia with selected demographic variables. (N = 117)

Demographic Variable	Inadequate Awareness f (%)	Adequate Awareness f (%)	Test	df	p-value
Age in years					
18–25	8 (47.06)	9 (52.94)	Fisher’s exact	—	0.042*
26–35	31 (50.00)	31 (50.00)			
36–45	8 (28.57)	20 (71.43)			
46 and above	1 (10.00)	9 (90.00)			
Gender					
Female	39 (42.39)	53 (57.61)	$\chi^2 = 0.332$	1	0.565

Male	9 (36.00)	16 (64.00)			
Educational status					
Primary	6 (31.58)	13 (68.42)	Fisher's exact	—	0.155
Middle	11 (57.89)	8 (42.11)			
Secondary	19 (47.50)	21 (52.50)			
Graduate & above	12 (30.77)	27 (69.23)			

Level of significance ($p \leq 0.05$).

*Significant

Table 4(a) shows that caregiver age was significantly associated with awareness (Fisher– exact $p = 0.042$). No, statistically significant association was observed for gender, educational status ($p > 0.05$). However, no statistically significant association was found between level of awareness and gender ($p = 0.650$), educational qualification ($p = 0.150$), as the p -values were greater than 0.05.

TABLE 4(b): Association of caregivers awareness regarding childhood pneumonia with selected demographic variables. (N = 117)

Demographic Variable	Inadequate Awareness f (%)	Adequate Awareness f (%)	Test	df	p-value
Occupation					
Non-working	30 (41.10)	43 (58.90)	$\chi^2 = 0.000$	1	0.984
Working	18 (40.91)	26 (59.09)			
Religion					
Christian	22 (42.31)	30 (57.69)	Fisher's exact	—	0.446
Hindu	23 (38.33)	37 (61.67)			
Islam	3 (75.00)	1 (25.00)			
Others	0 (0.00)	1 (100.00)			

Level of significance ($p \leq 0.05$).

Table 4(b) shows that there is no statistically significant association of awareness with occupation and religion.

TABLE 4(c): Association of awareness regarding childhood pneumonia with the number of children and episode of pneumonia among children under five years. (N = 117)

Demographic Variable	Inadequate Awareness f (%)	Adequate Awareness f (%)	Test	df	p-value
Number of children under 5 years in family					
1	32 (41.03)	46 (58.97)	Fisher's exact	—	0.596
2	12 (37.50)	20 (62.50)			
3	4 (57.14)	3 (42.86)			
Episode of Pneumonia in Child under 5 in the Past 6 Months					

yes	1(10.00)	9(90.00)	Fisher's exact	1	0.046*
No	47(43.93)	60(56.07)			

Level of significance ($p \leq 0.05$).

*Significant

Table 4(c) shows no statistically significant association between the number of children under five years in the family and awareness (Fisher's exact $p = 0.596$). However, a statistically significant association was observed between history of pneumonia in the child during the previous six months and caregiver awareness (Fisher's exact $p = 0.046$).

TABLE 4(d): Association of awareness with vaccination status of first child among caregivers regarding childhood pneumonia. (N = 117)

Demographic variable	Inadequate awareness f (%)	Adequate awareness f (%)	Test	df	P-value
Completed	46 (41.07)	66 (58.93)	Fisher's exact		1.000
Not completed	2 (40.00)	3 (60.00)			

Level of significance ($p \leq 0.05$).

Table 4(d) shows no statistically significant association between vaccination status of the first child and caregiver awareness (Fisher's exact $p = 1.000$).

TABLE 5(a): Association of caregivers practice regarding childhood pneumonia with selected demographic variables (Age in years, Gender, Educational status). (N = 117)

Demographic Variable	Poor Practice f (%)	Good Practice f (%)	Test	df	p-value
Age in years					
18–25	5 (29.41)	12 (70.59)	Fisher’s exact	—	0.875
26–35	20 (32.26)	42 (67.74)			
36–45	10 (35.71)	18 (64.29)			
46 and above	2 (20.00)	8 (80.00)			
Gender					
Female	28 (30.43)	64 (69.57)	$\chi^2 = 0.282$	1	0.596
Male	9 (36.00)	16 (64.00)			
Educational status					
Primary	7 (36.84)	12 (63.16)	Fisher’s exact	—	0.798
Middle	6 (31.58)	13 (68.42)			
Secondary	14 (35.00)	26 (65.00)			
Graduate & above	10 (25.64)	29 (74.36)			

Level of significance ($p \leq 0.05$)

Table 5(a) shows no statistically significant association between practice level and caregiver age, gender, educational status (all $p > 0.05$).

TABLE 5(b): Association of caregivers practice regarding childhood pneumonia with selected demographic variables.

(Occupation and Religion)

(N = 117)

Demographic Variable	Poor Practice f (%)	Good Practice f (%)	Test	df	p-value
Occupation					
Non-working	26 (35.62)	47 (64.38)	$\chi^2 = 1.431$	1	0.232
Working	11 (25.00)	33 (75.00)			
Religion					
Christian	18 (34.62)	34 (65.38)	Fisher's exact	—	0.249
Hindu	16 (26.67)	44 (73.33)			
Islam	2 (50.00)	2 (50.00)			
Others	1 (100.00)	0 (0.00)			

Level of significance ($p \leq 0.05$).

Table5(b) shows no statistically significant association of practice level with caregiver occupation and religion (all $p > 0.05$).

TABLE 5(c): Association of caregivers practice with number of children under five years regarding childhood pneumonia.

(N = 117)

Demographic variable	Poor practice f (%)	Good practice f (%)	Test	df	p-value
1	24 (30.77)	54 (69.23)	Fisher's exact	—	0.307
2	9 (28.13)	23 (71.88)			
3	4 (57.14)	3 (42.86)			

Level of significance ($p \leq 0.05$).

Table5(c) shows no statistically significant association between the number of children under five years in the family and practice level (Fisher's exact $p = 0.307$).

TABLE 5(d): Association of caregivers practice with history of pneumonia episode among first child during last six month.

(N = 117)

Demographic variable	Poor Practice f (%)	Good Practice f (%)	Test	df	p-value
Yes	3 (30.00)	7 (70.00)	Fisher's exact	1	1.000
No	34 (31.78)	73 (68.22)			

Level of significance ($p \leq 0.05$).

Table5(d) shows that there is no statistically significant association of caregivers practice with history of pneumonia during the last six months. (Fisher's exact $p = 1.000$).

TABLE 5(e): Association of caregivers practice with vaccination status of their first child regarding childhood pneumonia.

(N = 117)

Demographic variable	Poor practice f (%)	Good practice f (%)	Test	df	p-value
Completed	35 (31.25)	77 (68.75)	Fisher's exact	1	0.651
Incomplete	2(40.00)	3(60.00)			

Level of significance ($p \leq 0.05$).

Table5(e) shows no statistically significant association of caregivers practice with vaccination status of the first child (Fisher's exact $p = 0.651$).

DISCUSSION

The study reveals that out of the 163 children under five years of age, 6(3.68%) children had not completed their vaccination. Among the first-born children, 5 (4.27%) had not completed their vaccination, while 1 (2.56%) of the second-born children had not completed vaccination. All 7 (100.00%) third-born children had completed their vaccination. The reasons reported for incomplete vaccination stated as fever after vaccination.

CHAPTER V

SUMMARY, RECOMMENDATIONS, IMPLICATIONS AND CONCLUSION SUMMARY

A non-experimental cross-sectional study was conducted to determine the awareness and practices of caregivers on childhood pneumonia among the caregivers of under-five children. The study was conducted among 117 caregivers to determine the level of awareness and practices on childhood pneumonia among caregivers and to identify any association between awareness and practice level and selected demographics such as age, gender, education, occupation, religion, number of children under five years, history of pneumonia, and vaccination status of the child.

MAJOR FINDINGS OF THE STUDY

1. The findings revealed that the majority of the caregiver were aged 26-35 years (52.99%), the majority of caregivers were female 92(78.63%), the maximum number of caregivers had secondary-level education 40(34.19%).
2. The majority of caregivers were non-working 73(62.39%) and the majority of caregivers were Hindu 60 (51.28%).
3. Out of total 163 children under five years of age, 6(3.68%) children had not completed their vaccination. Among the first-born children, 5 (4.27%) had not completed their vaccination, while 1 (2.56%) of the second-born children had not completed vaccination. The reason stated as fever after vaccination.
4. 58.97% of caregivers demonstrated adequate awareness, meanwhile 41.03% of caregivers demonstrated inadequate awareness towards childhood pneumonia. The mean awareness score was 7.91 ± 2.07 .
5. 68.38% of caregivers had good practice; however, 31.62% of caregivers had poor practice towards childhood pneumonia. The mean practice score was 6.09 ± 1.56 .
6. A statistically significant association of awareness with age of caregivers was observed ($p = 0.042$).
7. A significant association was found between the history of pneumonia in the child within the past 6 months and caregivers' awareness ($p = 0.046$).

IMPLICATIONS:**NURSING PRACTICE**

The study suggests that there is a need to improve the quality of interventions carried out by caregivers to treat children with pneumonia. In particular, nurses ought to teach them about common signs and symptoms that require a doctor's intervention, home care practices, immunisation, monitoring of patients, and when to seek health care intervention so as to tackle the challenges effectively and adequately.

NURSING EDUCATION

The findings emphasised the importance of strengthening nursing education related to childhood pneumonia, its prevention, early identification, and caregiver education.

Nursing students should be trained in effective communication, counselling, health teaching, and community-based education so that they can effectively educate caregivers.

NURSING ADMINISTRATION

Nursing administrators should emphasise the practicing nurses to educate caregivers on ways of preventing childhood pneumonia, detecting it early, and caring for a sick child. It is essential for them to recommend nurses to provide caregivers with easily understood educational materials and counselling to improve their knowledge and approaches.

NURSING RESEARCH

The results of the study conducted among caregivers of the children who had been immunised by vaccines revealed a number of concerns and fears about childhood vaccination, including fears about possible side effects of the vaccination and lack of knowledge about the importance and benefits of immunisation. Further research can be undertaken to identify vaccine hesitancy factors associated with incomplete immunisation of children.

RECOMMENDATIONS:

Similar studies can be conducted using a bigger sample size to generate more precise results.

Further studies can be conducted in different settings to compare the caregivers awareness level and practices in various communities regarding childhood pneumonia.

CONCLUSION:

The present study assessed the awareness and practice of caregivers regarding childhood pneumonia among 117 caregivers in a selected urban community of East Khasi Hills District, Meghalaya. The findings of the study revealed that 58.97% demonstrated adequate awareness and 68.38% had good practice, whereas 41.03% demonstrated inadequate awareness and 31.62% had poor practice. A significant association was observed between caregivers' age and awareness ($p = 0.042$) and history of pneumonia in the child and awareness ($p = 0.046$). No significant association was observed between practice and the selected demographic variables. Thus, although a majority of caregivers demonstrated adequate awareness and good practices, the findings emphasised the need for continuous health education and counselling regarding early recognition and prevention, danger signs, and early

healthcare-seeking for childhood pneumonia to further improve caregiver practices and child health outcomes.

CHAPTER VI

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