

# “PERCEPTION OF CAREGIVER ON PHYSICAL THERAPY MANEGEMENT FOR PEDIATRIC PNEUMONIA PATIENTS”

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## ABSTRACT

**Introduction:** Paediatric physiotherapy mainly helps improve functional recovery and prevents complications related to neurological, musculoskeletal, respiratory, and burn disorders in children, thus enhancing their quality of life. In children, the success of physiotherapy depends on caregiver involvement because caregivers support and motivate the children to practice certain exercises that may have been prescribed during and outside therapy sessions. Caregivers' perception and understanding of physiotherapy influence adherence to treatment; positive perceptions support consistency and better outcomes, while deterrents include time constraints, discomfort of the child, and ignorance of proper procedures. Despite its importance, the available literature on the perception and adherence of caregivers within a paediatric physiotherapy setup is scant, especially in developing healthcare systems. The present study was thus undertaken to document caregivers' perception about paediatric physiotherapy and their adherence to home exercise programs, with the ultimate aim of augmenting caregiver-therapist collaboration for improving rehabilitation outcomes among children.

**Objectives:** The overall purpose of this study was to measure the caregiver's perception level regarding paediatric physiotherapy and their level of adherence to such exercises. Additional goals of this study were to identify the level of caregiver involvement in decision-making in relation to the child's physiotherapy treatment, explore the influences on caregivers' adherence to the home exercise plan, and analyse challenges faced by the caregiver when helping the child with the exercises.

**Methods:** The study design used in this particular study was a cross-sectional observational study among the 76 caregivers of children receiving physiotherapy from a paediatric physiotherapy clinic. The study involved gathering data from the caregivers using a structured questionnaire after seeking their informed consent. The responses were then measured by a MPOC Questionnaire and analyzed through descriptive statistical analysis in percentages representation.

**Results:** The results showed that most of the caregivers have a positive perception about paediatric physiotherapy, and they have shown good compliance with the exercise program. High levels of involvement and positive attitudes of the caregivers were seen, and no difficulty was reported during therapy.

**Conclusion:** The results showed that most of the caregivers have a positive perception about paediatric physiotherapy, and they have shown good compliance with the exercise program. High levels of involvement and positive attitudes of the caregivers were seen, and no difficulty was reported during therapy.

**Keywords**— Paediatric Physiotherapy, Caregiver Perception, Treatment Adherence, Home exercise Program, Caregiver involvement, Rehabilitation Outcome.

## INTRODUCTION

Pneumonia is a lung disease characterized by inflammation of the lung tissue, mainly involving the alveoli, which are responsible for gas exchange. It is most commonly caused by bacterial or viral infections, although other microorganisms, certain medications, and non-infectious conditions such as autoimmune disorders can also lead to pneumonia (1). Pneumonia remains one of the leading causes of mortality among children worldwide, particularly in low- and middle-income countries. Despite advances in medical care, it continues to pose a significant public health challenge due to delayed diagnosis, limited access to healthcare services, and insufficient awareness among caregivers (2). Family caregivers play a crucial role in the early recognition, prevention, and management of pneumonia in children. However, many caregivers have limited knowledge regarding the causes, symptoms, and appropriate treatment strategies. Understanding the healthcare-seeking behaviours and knowledge levels of caregivers is essential before implementing effective intervention programs, especially in urban communities with diverse cultural and socioeconomic backgrounds (2). Previous studies have shown that caregivers often misinterpret pneumonia symptoms as common respiratory infections and rely on home remedies, which can delay proper medical treatment and worsen disease outcomes (9). Severe pneumonia with hypoxemia remains a major cause of child mortality in developing countries, despite the availability of oxygen therapy, antibiotics, and supportive care recommended by the World Health Organization (WHO). Bubble continuous positive airway pressure (bCPAP) has been shown to improve respiratory outcomes compared to standard oxygen therapy in children with severe pneumonia, although its safety and effectiveness outside tertiary care settings remain unclear (3-5). Acute lower respiratory infections, particularly pneumonia, account for a significant proportion of deaths among children under five years of age, with developing countries contributing to approximately 95% of pneumonia-related fatalities (6). Severe pneumonia can be characterized by clinical signs such as respiratory distress, hypoxemia, central cyanosis, chest indrawing, increased respiratory rate, altered consciousness, dehydration, refusal to feed, and pulmonary or extra-pulmonary complications (7). These clinical indicators highlight the importance of early detection and prompt intervention to prevent complications and mortality. Pneumonia in children can be caused by viral and bacterial pathogens. Viral etiologies account for up to 50% of community-acquired pneumonia cases in hospitalized children, often in combination with bacterial infections. Common viral pathogens include respiratory syncytial virus (RSV), influenza viruses, parainfluenza viruses, adenovirus, and human metapneumovirus (8). Bacterial pathogens such as *Streptococcus pneumoniae* remain the most frequent cause of childhood pneumonia, with significant reductions in pneumonia incidence observed following pneumococcal vaccination programs (8). Other important bacterial pathogens include *Haemophilus influenzae* type b, *Staphylococcus aureus*, including methicillin-resistant strains, and *Mycoplasma pneumoniae*, which is increasingly recognized in younger children (8). Previous studies have shown that caregivers often misinterpret pneumonia symptoms as common respiratory infections and rely on home remedies, which can delay proper medical treatment and worsen disease outcomes (9). Chest physiotherapy is an important component of respiratory management in children with pneumonia. Physiotherapy techniques help in clearing respiratory secretions, improving lung expansion, preventing atelectasis, and enhancing overall pulmonary function. The importance of physiotherapy has become more evident during the COVID-19 pandemic, where respiratory complications were common (4). Effective paediatric rehabilitation requires active collaboration between healthcare professionals and caregivers, as caregivers are responsible for implementing therapeutic interventions and supporting the child's recovery at home (10). Caregivers are individuals residing in the child's household who provide daily care and assume a parental or supportive role, including parents, grandparents, and siblings. Studies have reported that caregivers often receive limited guidance from healthcare providers and lack adequate knowledge about caregiving practices, available healthcare resources, and rehabilitation strategies. This lack of knowledge can negatively impact treatment adherence and recovery outcomes (11).

## METHODOLOGY & METHOD

The study was conducted after finalizing the research design and methodology. Ethical approval was obtained from the concerned authority of tertiary care centre. The sample size was calculated using OpenEpi software, and 76 caregivers of paediatric pneumonia patients were recruited based on inclusion and exclusion criteria. The Measure of Process of Care (MPOC) questionnaire was taken from a published research article. The original questionnaire was in English and was translated into Marathi to ensure better understanding by caregivers. The Marathi version was validated by subject experts and teachers through online consultation to

ensure clarity and content validity. Before data collection, the purpose and procedure of the study were explained to all participants. Informed consent was obtained from caregivers before participation. The questionnaire was administered through mobile phones, and caregivers were instructed on how to fill it properly. Assistance was provided through phone calls whenever caregivers had difficulty understanding the questions. The questionnaire consisted of two sections: perception (10 questions) and adherence (6 questions). After completion, responses were collected digitally and entered into a data collection sheet. The collected data were analyzed using descriptive statistical methods. Results were summarized using frequencies, percentages, and graphical representations to interpret caregivers' perception and adherence toward paediatric physiotherapy care.

## RESULT

Relationship	Frequency	Percentage
mother	44	57.90%
father	17	22.40%
other	5	6.60%

Perception Statement	Response	Frequency	Percentage
My child's physiotherapist encourages me to actively participate in decision-making regarding my child's care	Strongly Agree	20	26.30%
	Agree	53	69.70%
	Neutral	3	3.90%
I feel comfortable discussing my concerns and preferences about my child's treatment plan with the physiotherapist	Strongly Agree	14	18.45%
	Agree	46	60.50%
	Neutral	16	21.10%
The physiotherapist addresses all aspects of my child's needs, including emotional and social well-being, not only physical	Strongly Agree	21	27.60%
	Agree	42	55.30%
	Neutral	13	17.10%
The physiotherapist provides clear and understandable information about my child's condition	Strongly Agree	20	26.30%
	Agree	51	67.10%
	Neutral	5	6.60%
The physiotherapist discusses the potential risks and benefits of intervention options for my child	Strongly Agree	20	26.30%
	Agree	41	53.90%
	Neutral	15	19.70%
The physiotherapist explains the details of my child's treatment plan clearly	Strongly Agree	14	18.40%
	Agree	46	60.50%
	Neutral	16	21.10%
The physiotherapist addresses all of my questions and concerns about my child's care	Strongly Agree	23	30.70%
	Agree		

	Agree	43	57.30%
	Neutral	9	12.00%
I receive timely updates from the physiotherapist regarding my child's progress	Strongly Agree	19	25.00%
	Agree	42	55.30%
	Neutral	15	19.70%
The physiotherapist efficiently manages my child's treatment and provides individualized services	Strongly Agree	22	28.90%
	Agree	38	50.00%
	Neutral	16	21.10%
I am involved in care planning and decision-making, including transition planning if applicable	Strongly Agree	20	26.30%
	Agree	44	57.90%
	Neutral	12	15.80%
<b>Adherence Question</b>			
How often do you help your child with their physical therapy exercises?	Always	5	6.60%
	Sometimes	12	15.80%
	Often	17	22.40%
	Rarely	38	50.00%
	Never	4	5.30%
How often does your child refuse to do their physical therapy exercises?	Always	5	6.60%
	Sometimes	12	15.80%
	Often	21	27.60%
	Rarely	32	42.10%
	Never	6	7.90%
How often do you have difficulty finding time to help your child with their physical therapy exercises?	Always	3	3.90%
	Sometimes	8	10.50%
	Often	17	22.40%
	Rarely	42	55.30%
	Never	6	7.90%
How often does your child complain of pain during physical therapy?	Always	5	6.70%
	Sometimes	8	10.70%
	Often	13	17.30%
	Rarely	41	54.70%
	Never	8	10.70%
How often does your child get frustrated during their physical therapy exercises?	Always	4	5.30%
	Sometimes	9	12.00%
	Often	12	16.00%
	Rarely	37	49.30%
	Never	13	17.30%

What do you think is the reason for not following the prescribed exercise plan?	Child is not cooperative	44	57.90%
	Child cries during exercise	32	42.10%
	Lack of time	0	0.00%

Mothers accounted for 57.90% of the primary caregivers in the current study, followed by fathers (22.40%) and other caregivers (6.60%). With 69.70% agreeing and 26.30% strongly agreeing that physiotherapists promoted their involvement in decision-making, a very high percentage of caregivers expressed a favourable opinion of physiotherapy treatments. 50% of caregivers said they rarely helped their child with exercises at home, while the other 50% said they occasionally, frequently, or usually did so. The majority of kids demonstrated good tolerance to physiotherapy by seldom refusing exercises, complaining of pain, or displaying displeasure throughout therapy. The main reason for not following the prescribed exercise plan was child non-cooperation or crying, and no caregiver reported lack of time as a barrier. Overall, these findings indicate high caregiver satisfaction, strong communication with physiotherapists, and good acceptance of paediatric physiotherapy intervention.

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## DISCUSSION

This study was undertaken to assess the level of perception and compliance of caregivers toward the management of physiotherapy in paediatric pneumonia patients and to identify the level of caregiver contribution to the rehabilitation process. The findings revealed that the majority of caregivers demonstrated a good perception of physiotherapy management and showed appropriate compliance with the treatment process, highlighting the significant role played by caregivers in the rehabilitation of children suffering from pneumonia.

In the present study, most caregivers were females, indicating that mothers or female family members were primarily responsible for caregiving and rehabilitation activities. This finding is consistent with previous studies that reported mothers as the primary caregivers and decision-makers in child health care (2-6). Female caregivers often spend more time with children and are actively involved in daily care, which positively influences adherence to physiotherapy and home exercise programs. The predominance of female caregivers also reflects cultural and social norms in developing countries, where women traditionally manage child care and household health-related activities.

The results showed that a very high percentage of caregivers agreed that physiotherapists encouraged their participation in decision-making regarding their child's treatment. This indicates the presence of a family-centred care approach, where caregivers are considered partners in the treatment process. Such involvement is crucial in paediatric rehabilitation because caregivers are responsible for implementing therapy at home and motivating children to perform exercises. Abdelbasset and Elnegamy reported that chest physiotherapy combined with standard medical treatment significantly improved respiratory parameters and accelerated recovery in children with pneumonia (1). The present study supports this finding, as caregivers recognized the importance of physiotherapy and actively participated in the treatment process, which may contribute to improved clinical outcomes.

Furthermore, caregivers reported a high level of comfort in communicating with physiotherapists and understanding the treatment plan. This suggests that physiotherapists provided clear explanations, addressed caregiver concerns, and created a supportive environment for communication. Effective communication between healthcare professionals and caregivers is essential to improve caregiver confidence, trust, and adherence to treatment programs. Meseret et al. reported that caregivers initially felt anxious about respiratory interventions but developed confidence and acceptance after receiving proper explanations and observing improvements in their children's condition (3). This supports the present study, demonstrating that caregiver education and reassurance play a significant role in enhancing acceptance and cooperation with treatment interventions.

The favorable perception observed in the present study contrasts with findings from earlier studies conducted in developing countries. Nyimas et al. and Farzana Ferdous et al. reported that many caregivers had limited knowledge about pneumonia and delayed seeking professional medical care due to lack of awareness, financial constraints, and cultural beliefs (2-6). The difference in findings may be attributed to the fact that caregivers in the present study attended a tertiary care hospital and received direct counselling and guidance from physiotherapists and healthcare professionals. Exposure to healthcare settings and structured education may significantly improve caregiver knowledge, perception, and attitudes toward physiotherapy and pneumonia management.

The present study also found that most caregivers adhered well to home exercise programs and reported minimal difficulty in helping their children perform exercises. More than half of the caregivers rarely experienced difficulty in finding time to assist their child, and most children rarely complained of pain or frustration during therapy. These findings indicate that the physiotherapy program was well tolerated and child-friendly. Given et al. emphasized that caregivers require adequate knowledge, skills, and continuous support from healthcare providers to perform caregiving tasks effectively and reduce stress (11). The present study supports this statement, as caregivers who received proper guidance demonstrated better compliance and confidence in managing their child's rehabilitation.

Aleena Ishfaq et al. reported that caregivers of paediatric burn patients had a positive perception of physiotherapy but faced challenges such as emotional burden and lack of instruction (10). In contrast, the present study reported fewer barriers, suggesting that structured education, counselling, and regular follow-up by physiotherapists can significantly improve caregiver adherence and reduce perceived difficulties. The supportive hospital environment and availability of trained physiotherapists may have contributed to the lower level of barriers reported.

The present study further revealed that caregivers perceived physiotherapists as efficient in managing treatment and providing holistic care, including emotional and social support. Holistic care is an important component of paediatric rehabilitation, as children with pneumonia may experience physical discomfort, emotional distress, and reduced functional capacity (4). Physiotherapists play a key role in addressing these aspects by improving respiratory function and promoting functional recovery. Lodhi and Gupta emphasized that physiotherapy interventions such as breathing exercises, postural drainage, incentive spirometry, and early mobilization improve lung function and oxygenation (4), supporting the positive perception observed in this study.

Moreover, caregivers were involved in care planning and transition planning, indicating a collaborative approach to rehabilitation. Family-centred care models emphasize caregiver involvement in planning and decision-making, which improves adherence, satisfaction, and treatment outcomes (12). Although some barriers such as child non-cooperation, crying, and occasional pain or frustration during exercises were reported, most caregivers stated that these difficulties were rare or occasional, indicating that the therapy program was acceptable and well designed for children.

The findings of this study have important clinical implications. Positive caregiver perception and adherence are essential for successful paediatric rehabilitation, particularly in pneumonia, where physiotherapy supports respiratory function and prevents complications. Educating caregivers, encouraging their participation in decision-making, and maintaining effective communication can enhance treatment adherence and improve clinical outcomes.

The study also emphasizes the importance of incorporating physiotherapy into the multimodal management of paediatric pneumonia. Previous research highlighted that early diagnosis and comprehensive treatment are critical for reducing complications and improving outcomes (7-8). Physiotherapy plays a supportive role in improving respiratory function and recovery, and caregivers are key contributors to home-based rehabilitation.

Overall, the findings indicate that caregivers had a favourable perception of physiotherapy and actively participated in their child's rehabilitation. Effective communication, caregiver education, and involvement in decision-making significantly influenced adherence and satisfaction with physiotherapy care. These results underline the importance of caregiver-therapist collaboration in paediatric pneumonia management and support the implementation of family-centred care models to improve rehabilitation outcomes and treatment adherence.

## CONCLUSION

This study concluded that caregivers of paediatric pneumonia patients had a positive perception and good compliance with physiotherapy management. Most caregivers actively participated in their child's care and supported rehabilitation through home exercises. Mothers were the main caregivers. Children generally tolerated physiotherapy well, with minimal pain, frustration, or refusal. Overall, caregiver involvement and effective communication with physiotherapists played an important role in improving rehabilitation outcomes.

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