# **Original Article**

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# Understanding the Perspectives of Paediatric Physicians on Physiotherapy in Paediatric Rehabilitation in Chennai, India: A Qualitative Approach

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Objectives: Children with disabilities may exhibit a multitude of symptoms, and treatment requires a multidisciplinary approach for a satisfactory outcome. Lack of awareness among physicians, lack of referral, and lack of inter-sectoral coordination have hindered paediatric practice in Tamil Nadu, a state in India with a striking childhood disability rate that warrants a timely interdisciplinary approach. However, the perspectives of paediatricians on paediatric physiotherapy are unknown. The aim of the study was to investigate the perspectives of practicing paediatric physicians in Chennai on the role of physiotherapy in paediatrics.

Methods: For an in-depth exploration, qualitative semi-structured interviews were conducted in person with 10 paediatricians. Audio from the sessions was recorded and transcribed, and data saturation was achieved through iterative analysis.

Results: A grounded theory analysis of the results yielded 5 domains under which the perspectives and expectations of the physicians were described, along with the barriers experienced by patients' parents as explained by their paediatrician. The responses highlighted deficits in awareness, structural support, accessibility and direct communication between physicians and physiotherapists.

**Conclusions:** Paediatric physicians have different opinions, and some ignorance persists concerning paediatric physiotherapy. This study warrants a proper structure of the paediatric rehabilitation unit and regular interdisciplinary meetings and focus group discussions to increase access for parents and improve patient outcomes.

Key words: Physical therapy modalities, Pediatricians, Perspective, Chennai, Disabled children, India

# **INTRODUCTION**

Physiotherapy has been widely accepted as a crucial part of disability rehabilitation for children, with its diagnostic accuracy, treatment strategies, and patient outcomes considered on

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par with medical treatment [1,2]. As various studies have highlighted, physiotherapy consistently contributes to increasing the independence of children with various neuromuscular conditions, cardiorespiratory distress, and orthopaedic conditions, and a financial analysis has reported it to be cost-effective in financial analysis [1,3].

Paediatric physiotherapy is not confined to institutions; instead, its scope extends to community levels, where it promotes social inclusion for children with disabilities. However, deficits in awareness, structural support from the healthcare sector, and referrals from physicians have hindered the delivery of optimal care to children [4-6].

Because paediatric physicians are the first point of contact

for the caregivers of specially abled children, hence physicians need to be aware of when to refer for physiotherapy and which conditions should be referred. They are in an ideal position to understand the barriers faced by parents when patients are referred to different specialties [7,8].

In a clinical context, no single medical method or treatment has been identified as beneficial or as adequate to completely manage the spectrum of disorders that are exhibited by specially abled children. To address this, a multidisciplinary approach and an intersectoral rapport are needed in paediatrics [9,10].

Though it has been emphasized that an intersectoral collaboration must occur among the various disciplines of paediatrics, a lack of awareness about paediatric physiotherapy persists among paediatricians, which hinders the referral rate and contributes thereby to delays in timely care [5,11,12].

To bridge this clinical gap between physiotherapists and physicians working in the paediatric sector, it is essential to learn the prevailing perspectives of paediatric physicians about the scope and role of paediatric physiotherapy.

In Tamil Nadu, a state in India where 1-2 out of 100 children are specially abled, the population of Chennai, which ranks among the state's top 5 districts for childhood disability rate, requires specialized and timely interdisciplinary care. This striking prevalence rate draws significance to understanding the gaps in intersectoral communication and the familiarity of physicians with physiotherapists in the paediatric sector [13].

Thus, the current study aimed to understand the perspectives prevailing among paediatric physicians about paediatric physiotherapy, including their opinions of paediatric physiotherapy, possible expectations and perceptions of paediatric physiotherapists, and parental barriers and facilitators in approaching paediatric physiotherapists in Chennai, Tamil Nadu, India.

# **METHODS**

# Design

Because the study aimed to learn the perceptions and insights of paediatric physicians concerning the paediatric specialization of physiotherapy, a qualitative exploratory analysis was undertaken. To gain new insights and introspective data from the participants, semi-structured probing interviews were conducted in person.

# Questionnaire design

The semi-structured questionnaire was framed according to earlier research and the literature. It included guestions that aimed to probe paediatricians' insights regarding paediatric physiotherapy, its role, and the challenges faced in approaching physiotherapy for rehabilitation. The questionnaire included questions like "Do you think physiotherapists are an integral part of paediatric rehabilitation?" followed by a probe of "What makes you think so?" Such guestions served to identify the general opinion of the paediatric physician and help guide the interview. Questions were probed to learn the purposes for which the participant would seek a physiotherapist, how often they referred paediatric patients to physiotherapy, and what their expectations were when referring a patient. A few questions were posed to analyse which characteristics of paediatric physiotherapists help gain patients' trust and whether they were aware of the treatment provided subsequently to the child. Additional guestions were probed to understand how the parents respond when physicians refer children to physiotherapy and the feedback received from parents whose children received physiotherapy.

### **Participants**

A purposive sampling method was employed to choose physicians in the field of paediatric medicine who were working in an established centre and were genuinely interested in taking part in the study. The semi-structured interview process and the goals of the study were explained, and physicians who were willing to share their valuable insights were included.

The eligibility criteria for inclusion were to be a licensed paediatric physician practicing in Chennai, with a minimum of 5 years of experience in the field of paediatrics.

# **Interview Setting**

Before each face-to-face interview was conducted, an appointment was scheduled with each participant to avoid interruptions during the interview session. The interview was conducted in a room in their workplace where the interviewer and participant could meet privately. Privacy was upheld during the session so that the flow of the interview would be maintained. Each interview session was recorded in full, audio only.

### Interviews

As the interview commenced, participants were given time to think before answering. At no point during the interview was a participant interrupted while answering, to ensure that they completed their responses. Once the participant had completed an answer, they were probed and prompted accordingly. After it was certain that they had nothing more to add, the next question was posed. Each interview lasted for 40-60 minutes.

To make sure that no valuable information was missed in the interview, a closing question was added: "As we have now reached the end of the interview, are there any other points that we have missed to discuss, or are there any other suggestions that you would like to add?"

The interview process continued until the point of data saturation, which occurred after 9 participants had been interviewed. To ensure that the saturation point had been reached, interviewing proceeded with the 10th participant to verify that no new information was collected through probing, at which point the data collection process was considered complete.

The outline of the interview questionnaire and the interview guidelines, which are based on the Consolidated Criteria for Reporting Qualitative Research checklist, have been attached as Supplemental Material 1.

The participants had a minimum of 5 years and a maximum of 16 years of experience, had earned a doctorate of medicine in paediatrics, and were employed as licensed paediatric practitioners. Six participants were male, and 4 were female. Table 1 presents the participants' demographic details and baseline answers.

# **Transcription and Analysis**

After the audio recordings were listened to, the responses were carefully documented in a narrative format. Responses were obtained both in English and in local languages. All responses were translated into English and checked for accuracy.

Grounded theory was followed throughout the coding process, which was performed with an Excel spreadsheet in three stages. Initially, in open coding, the statements were fragmented, and codes relevant to the responses were generated. Responses were matched for similarities. In axial coding, the previously labelled codes were further refined through the identification of their similarities. As a final stage, selective coding was performed, in which core categories were identified and the relevant codes were fitted together. In this manner, meaningful themes were identified under which the results were narrated. An iterative approach confirmed data saturation.

**Table 1.** Demographic data and baseline information (n = 10)

Characteristics	Mean $\pm$ SD or n (%)
Age (y)	41.0±5.1
Years of experience	$10.9 \pm 3.6$
Sex	
Male	6 (60.0)
Female	4 (40.0)
Do you refer patients to physiotherapy?	
Yes	7 (70.0)
At times	3 (30.0)
No	0 (0.0)
Do you think physiotherapy is an integral part of paediatric rehabilitation?	
Yes	8 (80.0)
No	2 (20.0)
Do you think it is difficult for parents to approach paediatric physiotherapy?	
Yes	6 (60.0)
No	4 (40.0)

SD, standard deviation.

### **Ethics Statement**

The study was approved by the Institutional Ethical Committee of SRM Medical College Hospital and Research Centre with approval No. 3118/IEC/2021. Before the commencement of the study, the participants were informed that the entire interview session would be re corded as an aid for transcribing the interview subsequently, and informed consent was obtained from the participants.

### **RESULTS**

Based on the responses from the in-depth analysis of the interviews with 10 participants and as the final output of the coding tree, 5 major themes were identified: (1) multidisciplinary approach, (2) performance and satisfaction, (3) adherence, (4) barriers to parents, and (5) treatment approaches. The coding tree is depicted in Table 2.

# Theme 1: Multidisciplinary Approach

# Subtheme 1: physiotherapy in paediatric rehabilitation

Participant #2: "Including a paediatric physiotherapist as an integral part of the rehabilitation team is inevitable because it helps the parents of children with motor impairments avoid running from pillar to post."

Paediatric rehabilitation comprises many specialties, paediatric physiotherapy among them. Children who are reported to have tonal abnormalities, floppy changes, burn contrac-



**Table 2.** Coding of responses in grounded theory analysis

Open coding	Axial coding	Selective coding
Integral part of rehabilitation, motor disability, neurological complications, oromotor approach, early stimulation, developmental delay, cerebral palsy, tonal abnormality	Physiotherapy in paediatric rehabilitation	Multidisciplinary approach
Constellation of symptoms, holistic approach, timely care, appropriate referral, parent-advocates, specific roles	Holistic care	
Therapeutic handling, patience, convincing, prolonged care	Patient handling	Performance and satisfaction
Adapting trend, up to date with advancements, proven approaches, bench to bedside	Evidence-based practice	
Improvements, reduced dependency, participation, evident changes, appreciable by parents	Outcomes	
Paucity, lack of direct contact, unaware of physiotherapy protocol, lack of shared decision-making	Inter-sectoral communication	
Child's comfort, confidence, efficiency to console, understanding child's mentality, think like a child	Rapport	Adherence
Improved adherence, friendly behaviour, playful approach, emotional mending	Emotional adaptation	
Repeated billing, scattered specialities, stigma, run errands, centers in reach	Approachability	Barriers to parents
Failure to reach, lack of understanding, awareness program, parental education, lack of therapists	Awareness	
Skills over experience, hands-on with evidence, adapting to needs, lateral thinking, out-of-the-box approach, practical over theoretical	Skills over experience	Treatment approaches
Results over procedure, effect over innovation, gains matter	Therapeutic rather than innovative	

tures, fractures, and neurological complications are quite often referred to physiotherapy because their motor improvement depends purely on a physiotherapy approach.

Some paediatricians responded that they require paediatric physiotherapist support not only during the later stages of childhood but right after birth. For new-borns and infants, a paediatric physiotherapist is expected to manage issues including the promotor approach for feeding and swallowing. In many instances, a child requires constant support from their paediatric physiotherapist to develop motor skills from birth.

Participant #9: "When a child with cerebral palsy comes to us, we refer them for early stimulation right from birth or infancy for motor development." In contrast to this quotation, a limited awareness of the scope of paediatric physiotherapy practice was also found. Some participants believed that paediatric physiotherapy is only concerned with developmental delay and cerebral palsy, such that referring other cases to physiotherapy is not needed, and that physiotherapy may not be an integral part of paediatric rehabilitation. Participant #7: "We just refer around 1 case in 30 cases to physiotherapy as we feel it is mandatory to do so. We refer only kids with autism or global developmental delays. Thus, paediatric physiotherapy may not be considered an integral part." Some participants also believed that paediatric physiotherapy has little to do with improving a child's health or nutritional status. They stated that paediatric physiotherapy comes into play when the child manifests with motor impairment.

### Subtheme 2: holistic care

Paediatric cases do not present problems with only a single system or component. Because they show a constellation of problems, a constellation of approaches is required to address them—in other words, a holistic approach. Paediatric patients seldom need single-discipline care; instead, they are often treated for various complications associated with their condition. This subtheme reflects a holistic model of care that provides multidisciplinary treatment and recognizes the roles of team members.

Participant #1 explained, "Every component that needs to be improved in a child needs a particular speciality, and the particular job can be done only by the specialization concerned. The motor component of this can be treated only by a paediatric physiotherapist and not by a paediatric physician." Paediatric physiotherapy is accepted as an essential part of rehabilitation but not as the only essential unit. Just as the motor domain can be handled only by physiotherapists, the speech component is handled by speech therapists; each component can be handled only by the corresponding specialty, and it cannot be exchanged. This makes paediatric rehabilitation an interdependent sector. Participant #10: "We require the support of a physiotherapist to improve the motor function, buccal muscle function, and feeding, and in the same way we require support from various sectors to successfully rehabilitate the child. This requires a holistic approach."

Paediatric physicians refer the parents of specially abled

children to paediatric physiotherapists by explaining the importance of therapy sessions that are to be followed regularly for the child's benefit. Participant #3 responded, "We explain to parents that the motor components which are impaired have to be treated by a physiotherapist, and medicine has no role to do in it. To get an improvement, you have to take your ward to a physiotherapist regularly. And by nature, parents who anticipate their child's improvement will agree to approach physiotherapy."

# Theme 2: Performance and Satisfaction

# Subtheme 1: patient handling

Handling children, especially specially abled children, is a challenging task. It requires considerable skill, not only in treating them but also in interacting with them and eliciting improvements. It requires great skill and patience to perform. The study's participants were very satisfied with paediatric physiotherapists, in that they were skilled enough to interact convincingly with both parents and children.

When this topic was probed during the interviews, the physicians explained their sense of satisfaction with the hands-on skills of paediatric physiotherapists. Though they were unaware of specific practices, they stated that because physiotherapists are highly skilled, they could bring about improvements in paediatric patients and achieve their goals within the set period. Participant #4: "I am very much satisfied with the skills of paediatric physiotherapists. It's only because of that they can handle the child for a prolonged period. Because of their skill, they can make the child adhere to their treatment and so they can bring improvements even in neurological conditions among children."

# Subtheme 2: evidence-based practice

Most participants refer cases regularly to paediatric physiotherapy. Most participants also have their own experiences with physiotherapy management and have had positive outcomes, but they are unsure how helpful it might be in the case of children. Participant #7 answered, "I am not sure how far the practice follows the evidence-based guidelines. Maybe for now, simple techniques and group-based education may be satisfactory, but as the trends progress, adapting new techniques would yield a satisfactory result." As time passes, paediatric physiotherapy also develops, as do the challenges and expectations. To meet the challenges, improve the child's health, and fulfil the expectations, paediatric physiotherapists

must follow evidence-based guidelines and new proven approaches to produce satisfactory results more quickly.

### Subtheme 3: outcomes

Following regular physiotherapy sessions, notable improvements are observed in the child. The participants reported that though they are unaware of the specifics of any treatment protocol, they can appreciate the improvements among children after treatment. These improvements are evident not only to the physician but also to the parents, which improves their confidence level. Participant #10: "Throughout physiotherapy treatment sessions, there are certainly evident improvements in the child's performance. Though those are micro gains, it brings a lot of happiness and satisfaction to the parents."

# Subtheme 4: intersectoral communication

A paucity of communication occurs between physicians and physiotherapists, which is associated with a lack of satisfaction and knowledge about the treatment protocol followed by the physiotherapists.

Direct communication between the referring paediatrician and the handling paediatric physiotherapist would yield an effective interdisciplinary approach. Participant #10: "Alongside treatment skills, we must develop interpersonal skills and relations which will make the rehabilitation sector function with ease, but what I feel is that we don't have much communication with paediatric physiotherapy, which must be sorted out." This deficit leads to a lack of shared decision-making, thereby hindering the process of goal setting.

# **Theme 3: Treatment Adherence**

# Subtheme 1: rapport

Participant #6: "When you treat a child, you have to be a child and think like a child to develop a rapport with the child and carry out the treatment with ease." When anyone addresses a paediatric patient, they should have compassion and empathy towards the child. Adapting emotionally to children makes them feel more comfortable during treatment. Children are vulnerable, and they may become easily irritable and cry due to pain, which can make it difficult to treat them. To handle the issue efficiently, a paediatric physician must adapt emotionally to the child's mentality to establish a rapport and gain the child's confidence.

On the other hand, some physiotherapists just treat the chil-



dren for their immediate condition, without building a rapport with the child or parents. This lack of rapport hinders establishing a shared decision-making process, which may ultimately lead to poor outcomes and patient dissatisfaction, including dropout from treatment.

# Subtheme 2: emotional adaptation

Many children experience fear or start to cry at the sight of a stranger. When physiotherapists adapt emotionally to a child, it helps the child follow the treatment's steps and feel favourably inclined towards them, which encourages the child to follow the instructions given by the paediatric physiotherapist even at home. This hastens their improvement overall.

It is to be understood that adherence is key to improvement, while emotional adaptation towards the child is key to adherence to the treatment protocol. Thus, emotional adaptation to a patient directly affects outcomes. Participant #8: "Not just the paediatric physiotherapist but anyone who is going handle paediatric patients must be emotionally mended with the child, so that doesn't just attach to you but (everything, including how) they will adhere to your treatment both in the clinic and in their home."

### Theme 4: Barriers to Parents

After referral, parents of paediatric patients may face several barriers. Of these, awareness and approachability to the physiotherapist are notable.

# Subtheme 1: approachability

As we probed this aspect, Participant #9 remarked, "Though a parent tries to reach out to physiotherapists, the process that it takes—which includes the repeated billing every day that they have to do, and getting the out-patient card to be sealed every day—makes them get tired as they have to carry the baby along with them." It would be more convenient to parents if the paediatric physiotherapists went directly to their wards or used a home-care approach, since it would reduce parents' time constraints and help patients undergo treatment more regularly.

In contrast, one participant (#7) explained that it is much easier to approach physiotherapists, since many physiotherapy clinics exist in the region: "I don't think that seeking a physiotherapist remains a challenge to a parent as there are many clinics at the distance of reach. They are easily approachable."

### Subtheme 2: awareness

Paediatric physiotherapy is a blooming field, and not enough paediatric physiotherapists are available to meet demand. In addition, the parents are sometimes not aware of the existence of a separate specialization for improving motor function. Because of limited awareness among parents about paediatric physiotherapy, they fail to approach it at the right time. Participant #3: "Parents are not very much aware that such a speciality exists. Paediatric-oriented physiotherapists are much fewer in number, so it is a challenge for a parent to seek their attention. We need to educate them."

# **Theme 5: Treatment Approaches**

# Subtheme 1: skills over experience

Participant #1: "When we refer [patients] to paediatric physiotherapists, we are more concerned about their technical skills and innovative ideas than their experience. We have seen newbies performing better than experienced professionals in terms of outcomes." When it comes to treating a child, it is entirely a different scenario because it is the starting phase of their life. Any disruption or delay in improvement at this phase will hinder them from proceeding to the next developmental phase at a normal pace, which may affect schooling and normal motor development. Thus, it requires a high level of skill to bring out the best in each child.

Skill matters more than experience. Good hands-on skill is required to bring out a child's potential. Alongside skills, if one practices based on new evidence and innovations and can adapt the treatment for the differences among individual children, it will prove to be more efficient. Everyone needs practice before they become experienced. Participant #8: "We most often refer based on the improvements and the feedback that we receive and not on experience. It requires skills rather than years."

Being a paediatric physiotherapist requires a lot of lateral and creative thinking and out-of-the-box innovations that may attract the child toward the treatment. Because not all children are the same, each patient requires a different approach to achieve the goals of treatment. When probing these aspects, paediatricians explained that whatever is learned and taught during a course of study and what is practiced are different, which makes it essential for physiotherapists to be innovative and up to date with new treatment techniques and guidelines. Participant #6: "Following the outcome-based quidelines, being aware of new techniques and thinking out

of the box may help in improving the micro gains to macro gains in the (protocol) stipulated among children with motor impairment."

# Subtheme 2: therapeutic rather than innovative

While most participants expected an innovative approach with patients in a paediatric set-up, differences in opinion were noted among the respondents in this aspect, too. Participant #7: "We expect improvement in the child. That's the net result we need to achieve this, in my opinion, guidelines-based therapeutic approach rather than innovative approach, and I guess that would give better results." Since results are the goal of treatment, some physicians prefer trying only the established treatment protocols, instead of experimenting with new ideas that may not render an effective result.

From these responses, it is understood that physicians generally trust paediatric physiotherapists based on how they treat the child, how efficiently they can elicit improvements, and how effectively they apply what they have learned, whereas the experience of the physiotherapist has little relevance, in their opinion. All that matters are skills, innovation, and application.

# **DISCUSSION**

This study aimed to explore the perspectives of paediatric physicians regarding the role of paediatric physiotherapists in Chennai, Tamil Nadu, India. Data were gathered through face-to-face interviews with 10 experienced paediatric physicians, which were audio-recorded and transcribed. Grounded theory was used to analyse the transcriptions and identify core themes among the data.

The analysis yielded a multitude of contrasting opinions among paediatric physicians in every domain. It is widely accepted that paediatric physiotherapists are an integral part of paediatric rehabilitation, since physiotherapy has a significant role for children with spectrum neurological disorders and orthopaedic complications that can result in impairment; for such patients, physiotherapy is the most significant option to improve their quality of life. Physicians even advocate for parents to adhere to physiotherapy treatment sessions for the benefit of their wards [7,14].

With research and practice evolution trajectories in paediatric physiotherapy since the 1980s, most cases referred to paediatric physiotherapy involved cerebral palsy, pathologies of

the spine, preterm neonates, Down syndrome, or disorders of developmental coordination. Over the intervening decades, trends of physiotherapy in paediatric rehabilitation have evolved from passive therapy to active play, which has proven to be effective [15]. Children who undergo discipline-specific rehabilitation, including physiotherapy and occupational therapy, show increased functional outcomes [16]. A study conducted in Norway has shown that approximately 58% of the children referred to physiotherapy achieved an optimal recovery, while 40% of the children achieved at least a partial recovery [17].

Some physicians were unaware of the role of physiotherapy in paediatrics, and from their perspective, physiotherapists do not hold a key role in the rehabilitation team. This contrasting opinion may be attributed to various factors, of which the lack of intersectoral communication holds a significant position [2,7,12]. When it comes to paediatrics, not only physicians or physiotherapists but all healthcare professionals may contribute, since their functions cannot be exchanged. Because paediatric cases may have many associated complications, a holistic approach is required to deliver quality care [18].

The satisfaction of paediatric physicians with the contribution of paediatric physiotherapists is based primarily on their performance, including how they incorporate evidence into their practice and what the treatment's outcomes are. How the therapist handles the patient must be convincing not only to the physician but also to the patient's parents, a key element in supporting patient satisfaction as well as improving adherence. Improvements brought about in the child's case will improve the confidence of the parents and the reputation of the profession [19-21].

Several potential issues from the interviews are highlighted below. First, direct interaction is often insufficient between the paediatric physician and paediatric physiotherapist. This limitation can hinder the progress of treatment and the implementation of an ideal plan of care [5,7]. Second, like any healthcare professional, a paediatric physiotherapist must exhibit compassion for their patients. They must not only focus on implementing the plan of care but also give priority to the response and reaction of the child because "one size does not fit all." Developing an emotional rapport is necessary to treat the child [4,22]. Third, an emotional rapport is required for improving the adherence of the child to the treatment. Adherence is the key to improvement, while rapport is the key to adherence [23-25]. Fourth, developing a family-centred protocol for paediatric patients helps to bridge the gap between

parent and child as well as parent and therapist. This improves not only the emotional bonding between parent and child but also the parents' awareness of the physiotherapy treatment's approaches, thereby improving adherence [7,23-25]. Fifth, paediatric physicians prioritize those paediatric physiotherapists who have more skills, are up to date with recent trends, and are well versed with evidenced-based practice over physiotherapists with basic levels of experience and innovation [1,26].

A complex hospital setup requires frequent rebilling to reach out to various specialties. Though a paediatric case requires a multidisciplinary approach, the specialties are rarely co-located. Rushing through hospital corridors with specially abled children may add stress for the parents and create a sense of stigma. Enhancing this structural support would improve treatment follow-up rates [27].

In middle and low-economic countries like India, some people still lack awareness of paediatric conditions; they consider it a curse. On the other hand, some parents and caregivers of specially abled children are hardly aware of paediatric physiotherapy and its potential benefits for improving the child's well-being [11,12].

While complying with public law, a transdisciplinary care approach has been identified as an effective model for the healthcare system. India has always insisted on sustainable development, which can be achieved through transdisciplinary collaboration. To achieve a transdisciplinary approach in paediatric care, a few cornerstones should be considered, which include building the capacity of healthcare providers, collaboration, training, funding, co-incubation, and growth. These factors are to be fostered by government policies. Adequate funding and infrastructural support and the strengthening of insurance policies for long-term rehabilitation of specially abled children must be provided by the government, especially in low and middle-income countries [28-31].

# **Clinical Implications and Future Directions**

This study has aimed to show that in Tamil Nadu, neither parents nor paediatric physicians are fully aware of the potential scope of physiotherapy in paediatrics. Apart from the cost, many factors may be considered for improving paediatric patient outcomes, which may help in reducing the community impact of childhood disability and the burden held by a patient's caregivers. Thus, it becomes important to hold focus group discussions, and establishing medical education pro-

grams with various paediatric disciplines is warranted to improve awareness and rapport [3,14].

Multispecialty hospitals and tertiary care centres must consider bringing all the disciplines of paediatrics under one roof and making it easy for parents to access them, rather than having different sectors on various floors. Building a centralized paediatric rehabilitation unit is likely to improve patient outcomes.

Enhancing community-based rehabilitation and physical activity programs can be beneficial for improving the adherence rate and involvement of children in rehabilitation. They may also help in reducing the myths and stigma held by the caregivers of the child. Lastly, developmental screening and other screening of paediatric patients should be done regularly with the participation of all paediatric disciplines.

# **Limitations and Recommendations**

Paediatricians working in community-based settings were not recruited for this study. This study relies on the viewpoints of 10 paediatric physicians working in Chennai, Tamil Nadu, India, whereas future studies must consider involving parents, physicians, and physiotherapists for an extended view of barriers and facilitators to physiotherapeutic access. Focus group discussions with the various stakeholders of children with disabilities could be conducted to gain a more extensive view of the prevailing clinical practices in paediatrics.

Even after gaining access to a tertiary rehabilitation centre, parents may experience further barriers in approaching various healthcare professionals in paediatric rehabilitation and communicating with them. Future studies must explore the hardships that parents face when they reach out to a tertiary care centre for the rehabilitation needs of their children.

Paediatric physicians may hold contrasting opinions about paediatric physiotherapy. Still, some ignorance exists concerning the role of physiotherapy, and those who acknowledged physiotherapy to be an integral part of the rehabilitation of children with disabilities lacked familiarity with treatment strategies and their applications. Many barriers may limit patients' access to physiotherapy and lead to poor treatment outcomes, which include the poorly organized structure of the paediatric rehabilitation unit, as well as a lack of knowledge about the role of physiotherapy in addressing paediatric conditions. This study has highlighted deficits in rapport and interdisciplinary meetings that may separate various disciplines of paediatrics, including physiotherapy and physicians. A com-



prehensive paediatric transdisciplinary rehabilitation unit can help develop rapport as well as improve patient outcomes and reduce the caregiver burden.

# **NOTES**

# **Supplemental Materials**

Supplemental material is available at https://doi.org/10. 3961/jpmph.23.426.

## **Conflict of Interest**

The authors have no conflicts of interest associated with the material presented in this paper.

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# **Author Contributions**

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# **REFERENCES**

Subash Sundar

1. Drapeau-Zgoralski V, Beauséjour M, Painchaud AS, Sarda M, Nault ML. Advanced practice physiotherapy in paediatrics: implementation results. Paediatr Child Health 2022;27(4):206-

- 212. https://doi.org/10.1093/pch/pxac013
- Aimen I, Nawaz A, Qayyum Z, Maqsood M, Sultana R. Awareness, belief, attitude and utilization of physiotherapy services among doctors: awareness, belief, attitude and utilization of physiotherapy services. Pak J Health Sci 2022;3(4):91-95. https://doi.org/10.54393/pjhs.v3i04.128
- 3. Abichandani D, Radia V. Awareness of various aspects of physiotherapy among medical residents. Int J Sci Res 2015;4(10): 1460-1465.
- Shannon J, Legg D, Pritchard-Wiart L. Do paediatric physiotherapists promote community-based physical activity for children and youth with disabilities? A mixed-methods study. Physiother Can 2021;73(1):66-75. https://doi.org/10.3138/ptc-2019-0043
- Shimpi A, Writer H, Shyam A, Dabadghav R. Role of physiotherapy in India–a cross-sectional survey to study the awareness and perspective among referring doctors. J Med Thesis 2014;2(2):18-22. https://doi.org/10.13107/jmt.2347-5595/040
- 6. Williams EN, McMeeken JM. Building capacity in the rural physiotherapy workforce: a paediatric training partnership. Rural Remote Health 2014;14(1):219-229. https://doi.org/10. 22605/RRH2475
- 7. Alshehri MA, Alhasan H, Alayat M, Al-Subahi M, Yaseen K, Ismail A, et al. Factors affecting the extent of utilization of physiotherapy services by physicians in Saudi Arabia. J Phys Ther Sci 2018;30(2):216-222. https://doi.org/10.1589/jpts.30.216
- 8. Rajan P, Bellare B. Referring doctors' perspectives about Physiotherapy management for chronic musculoskeletal pain. Int J Ther Rehabil Res 2013;2(1):15-21. https://doi.org/10.5455/ijtrr.00000018
- 9. Førde S, Herner LB, Helland IB, Diseth TH. The biopsychosocial model in paediatric clinical practice-an interdisciplinary approach to somatic symptom disorders. Acta Paediatr 2022; 111(11):2115-2124. https://doi.org/10.1111/apa.16517
- Hayles E, Harvey D, Plummer D, Jones A. Parents' experiences of health care for their children with cerebral palsy. Qual Health Res 2015;25(8):1139-1154. https://doi.org/10.1177/10497323 15570122
- Ebenezer CM, Goh CX, Jemeela S, Abraham MM, Jabbar MS. Awareness and knowledge of physiotherapy among medical and health sciences students: a cross-sectional study. Res J Pharm Technol 2019;12(4):1695-1706. https://doi.org/10.5958/ 0974-360X.2019.00283.X
- 12. Puckree T, Harinarain R, Ramdath P, Singh R, Ras J. Knowledge, perceptions and attitudes of final year medical, occupational

- therapy and sport science students regarding physiotherapy, in KwaZulu Natal. S Afr J Physiother 2011;67(3):19-26. https://doi.org/10.4102/sajp.v67i3.50
- 13. Velayutham B, Kangusamy B, Mehendale S. Prevalence of disability in Tamil Nadu, India. Natl Med J India 2017;30(3):125-130.
- 14. Al-Eisa ES, Al-Hoqail H, Al-Rushud AS, Al-Harthi A, Al-Mass B, Al-Harbi BM, et al. Awareness, perceptions and beliefs about physiotherapy held by physicians working in Saudi Arabia: a cross-sectional study. J Phys Ther Sci 2016;28(12):3435-3439. https://doi.org/10.1589/jpts.28.3435
- Benn NL, Birchard EA, Korompai El, Davari M, Patel V, Brunton LK. Chronicling research and practice evolution in pediatric physical therapy. Pediatr Phys Ther 2022;34(2):253-260. https://doi.org/10.1097/PEP.0000000000000885
- Chen CC, Heinemann AW, Bode RK, Granger CV, Mallinson T. Impact of pediatric rehabilitation services on children's functional outcomes. Am J Occup Ther 2004;58(1):44-53. https://doi.org/10.5014/ajot.58.1.44
- Evensen KA, Sellæg S, Stræte AC, Hansen AE, Meisingset I. Profile of children referred to primary health care physiotherapy: a longitudinal observational study in Norway. BMC Health Serv Res 2021;21(1):16. https://doi.org/10.1186/s12913-020-05988-8
- 18. Mammas IN, Spandidos DA, Weindling AM. The future of paediatric education. Exp Ther Med 2018;16(3):2803-2804. https://doi.org/10.3892/etm.2018.6549
- Vajravelu S, Solomon P. Barriers and facilitators to family-centred paediatric physiotherapy practice in the home setting: a pilot study. Disabil CBR Incl Dev 2013;24(4):107-115. https://doi.org/10.5463/dcid.v24i4.220
- 20. Akhbari Ziegler S, Mitteregger E, Hadders-Algra M. Caregivers' experiences with the new family-centred paediatric physiotherapy programme COPCA: a qualitative study. Child Care Health Dev 2020;46(1):28-36. https://doi.org/10.1111/cch.12722
- 21. Mistry K, Yonezawa E, Milne N. Paediatric Physiotherapy curriculum: an audit and survey of Australian entry-level Physiotherapy programs. BMC Med Educ 2019;19(1):109. https://doi.org/10.1186/s12909-019-1540-z
- 22. Jelsma J, Scott D. Impact of using the ICF framework as an assessment tool for students in paediatric physiotherapy: a pre-

- liminary study. Physiotherapy 2011;97(1):47-54. https://doi.org/10.1016/j.physio.2010.09.004
- 23. Young B, Moffett JK, Jackson D, McNulty A. Decision-making in community-based paediatric physiotherapy: a qualitative study of children, parents and practitioners. Health Soc Care Community 2006;14(2):116-124. https://doi.org/10.1111/j.1365-2524.2006.00599.x
- 24. Chappell F, Williams B. Rates and reasons for non-adherence to home physiotherapy in paediatrics: pilot study. Physiotherapy 2002;88(3):138-147. https://doi.org/10.1016/S0031-9406 (05)60547-0
- Santer M, Ring N, Yardley L, Geraghty AW, Wyke S. Treatment non-adherence in pediatric long-term medical conditions: systematic review and synthesis of qualitative studies of caregivers' views. BMC Pediatr 2014;14:63. https://doi.org/10.1186/ 1471-2431-14-63
- 26. Roqué i Figuls M, Giné-Garriga M, Granados Rugeles C, Perrotta C, Vilaró J. Chest physiotherapy for acute bronchiolitis in paediatric patients between 0 and 24 months old. Cochrane Database Syst Rev 2016;2(2):CD004873. https://doi.org/10.1002/14651858.CD004873.pub5
- 27. Tigere B, Makhubele JC. The experiences of parents of children living with disabilities at Lehlaba Protective Workshop in Sekhukhune district of Limpopo province. Afr J Disabil 2019;8(0):a528. https://doi.org/10.4102/ajod.v8i0.528
- 28. Sears CJ. The transdisciplinary approach: a process for compliance with Public Law 94–142. J Assoc Sev Handicap 1981;6(1): 22-29. https://doi.org/10.1177/154079698100600103
- 29. King G, Strachan D, Tucker M, Duwyn B, Desserud S, Shillington M. The application of a transdisciplinary model for early intervention services. Infants Young Child 2009;22(3):211-223. https://doi.org/10.1097/IYC.0b013e3181abe1c3
- 30. Ramaswamy S, Sagar JV, Seshadri S. A transdisciplinary public health model for child and adolescent mental healthcare in low- and middle-income countries. Lancet Reg Health Southeast Asia 2022;3:100024. https://doi.org/10.1016/j.lansea.2022. 100024
- 31. Prasad R, Krishna S. The Indian science establishment and public health: critical need for transdisciplinary learning, collaboration, and leadership. J Indian Inst Sci 2022;102(2):655-661. https://doi.org/10.1007/s41745-022-00333-w