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**The multidisciplinary approach to the treatment of paediatric chronic pain: a qualitative analysis through focus groups.**

*Autori / Authors:* Aldana Paola Ercolano, Sabrina Galvan, Tessa Louise Marchesan, Alessia Gavioli, Gerardo Papa, Mariarita Todaro, Lidia Berforini D'Aquino, Alessia Zanatta, Andrea Vianello.

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*Contatto autori / Corresponding author:* Aldana Paola Ercolano,

[paola.ercolano@hospiceseragnoli.it](mailto:paola.ercolano@hospiceseragnoli.it)



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**Radiologia, medicina nucleare, radioterapia, fisica medica / Radiology, nuclear medicine, radiotherapy, medical physics**

1	<p><i>Applicazione del Workload Indicators of Staffing Need (WISN) per la stima del fabbisogno di Tecnici Sanitari di Radiologia Medica in una Struttura di Diagnostica per Immagini italiana.</i></p> <p><i>Workload Indicators of Staffing Need (WISN) method to determinate the staffing needs of Radiographers within an Italian Radiology Department.</i></p>
	<p>Domenico Riccardo Cammisa, Francesca Fortunato, Antonio Alemanno, Rosetta D’Andria, Federica Guglielmi.</p>

**Scienze sanitarie della riabilitazione e Clinica medica / Health care sciences in rehabilitation and clinical medicine**

19	<p><i>Valutazione della fatica in pazienti affetti da Long Covid: valutazione delle qualità psicometriche della Fatigue Severity Scale (FSS).</i></p> <p><i>Assessment of fatigue in Long Covid patients: evaluation of psychometric qualities of the Fatigue Severity Scale (FSS).</i></p>
	<p>Matteo Tamburlani, Tiziana Trequattrini, Simona Rossi, Maria Cristina Zappa, Rossana Cuscito, Leonardo Papi, Arianna Colelli, Giovanni Galeoto, Ilenia Ruotolo, Fabrizio Ciaralli, Annamaria Servadio.</p>
31	<p><i>PDPA BPCO-R Indicatori di processo e di esito nel percorso di presa in carico dei pazienti con malattia respiratoria: studio osservazionale.</i></p> <p><i>Care Pathways COPD-R Process and outcome indicators in the management of patients with respiratory disease: observational study.</i></p>
	<p>Matteo Tamburlani, Tiziana Trequattrini, Simona Rossi, Maria Cristina Zappa, Rossana Cuscito, Giovanni Galeoto, Fabrizio Ciaralli, Annamaria Servadio.</p>
54	<p><i>L’approccio multidisciplinare al trattamento del dolore cronico pediatrico: analisi qualitativa mediante focus group.</i></p>
	<p>Aldana Paola Ercolano, Sabrina Galvan, Tessa Louise Marchesan, Alessia Gavioli, Gerardo Papa, Mariarita Todaro, Lidia Berforini D’Aquino, Alessia Zanatta, Andrea Vianello.</p>
68	<p><i>The multidisciplinary approach to the treatment of paediatric chronic pain: a qualitative analysis through focus groups.</i></p>
	<p>Aldana Paola Ercolano, Sabrina Galvan, Tessa Louise Marchesan, Alessia Gavioli, Gerardo Papa, Mariarita Todaro, Lidia Berforini D’Aquino, Alessia Zanatta, Andrea Vianello.</p>

Periodico per le professioni biomedico-sanitarie a carattere tecnico - scientifico – professionale

SOMMARIO / TABLE OF CONTENTS V. 8, N. 2 – 2024

Scienze sanitarie della riabilitazione e Organizzazione aziendale / Rehabilitation health sciences and Management

82	<i>COLLABORAZIONE INTERPROFESSIONALE E ORGANIZZAZIONE SANITARIA: Uno studio esplorativo sulle sfide e opportunità per i professionisti della riabilitazione.</i>
	Simone Sottana, Andrea Vianello, Matteo Tognin, Deborah Mazzarotto, Marco Ceccato, Daria Visintin, Riccardo Martignon, Francesca Magaton Rizzi, Noemi Pasquon, Lucia Savietto.
125	<i>INTERPROFESSIONAL COLLABORATION AND HEALTHCARE ORGANIZATION: an exploratory investigation into the challenges and opportunities for rehabilitation professionals.</i>
	Simone Sottana, Andrea Vianello, Matteo Tognin, Deborah Mazzarotto, Marco Ceccato, Daria Visintin, Riccardo Martignon, Francesca Magaton Rizzi, Noemi Pasquon, Lucia Savietto.

## The multidisciplinary approach to the treatment of paediatric chronic pain: a qualitative analysis through Focus Groups.

Ercolano Aldana Paola<sup>1</sup>, Galvan Sabrina<sup>2</sup>, Marchesan Tessa Louise<sup>3</sup>, Gavioli Alessia<sup>4</sup>, Papa Gerardo<sup>5</sup>, Todaro Mariarita<sup>6</sup>, Berforini D'Aquino Lidia<sup>7</sup>, Zanatta Alessia<sup>8</sup>, Vianello Andrea<sup>9</sup>.

<sup>1</sup> Fisioterapista, Fondazione Hospice Seragnoli, Bologna, Italy;

<sup>2</sup> Fisioterapista, Direzione delle Professioni Sanitarie, Azienda Ospedale Università di Padova; CdL in Fisioterapia dell'Università degli Studi di Padova, Italy;

<sup>3</sup> Educatore Professionale, SC Disabilità e Disturbi del Neurosviluppo dell'Adulto - Azienda Sanitaria Universitaria Giuliano Isontina, Italy;

<sup>4</sup> Terapista Occupazionale Libera professione, AISM Veneto - Sezione provinciale di Vicenza, Italy;

<sup>5</sup> Fisioterapista, UOC Recupero e Rieducazione Funzionale, Ospedale di Asiago Aulss 7 Pedemontana, Italy;

<sup>6</sup> Fisioterapista, UOC Medicina Fisica e Riabilitativa, Ospedale di Schiavonia, Az. ULSS 6 Euganea, Italy;

<sup>7</sup> Ortottista ed assistente di oftalmologia, SOSD professioni riabilitative ospedaliere - Area ortottica, Azienda Sanitaria Universitaria Friuli Centrale, Italy;

<sup>8</sup> Terapista della Neuro e Psicomotricità dell'Età Evolutiva, Fondazione Robert Hollman Padova, Italy;

<sup>9</sup> Professore Associato di Pneumologia, Facoltà di Medicina e Chirurgia, Università degli Studi di Padova - Direttore della Divisione di Fisiopatologia Respiratoria, Azienda Ospedaliero-Universitaria Municipale di Padova, Italy.

Corresponding author: Aldana Paola Ercolano, [paolaercolano@hotmail.com](mailto:paolaercolano@hotmail.com)

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## ABSTRACT

### INTRODUCTION

#### Background

Access to pain care is recognized as a fundamental human right, ratified by Law 38/2010 and supported by the professional codes of conduct for healthcare practitioners. Pain, defined by the International Association for the Study of Pain (IASP), as an unpleasant sensory and emotional experience associated with actual or potential tissue damage. It becomes chronic when it persists beyond three months, affecting quality of life and clinical prognosis. The World Health Organization (WHO) has recently promoted a multidisciplinary approach for pediatric chronic pain, integrating physical, psychological, and pharmacological interventions, given the high prevalence of pain in pediatric populations, affecting up to 46% of children and adolescents. However, recent studies highlight gaps in healthcare providers' competencies in managing pediatric chronic pain, and the need to update professional training and explore further non-pharmacological approaches to improve its management.

#### Objectives

To explore healthcare professionals' perceptions and expectations regarding the multidisciplinary approach to chronic pediatric pain, and identify areas for improvement to optimise rehabilitative practices.

#### Methods

The study adopted a qualitative design, utilizing the Focus Group technique and unstructured interviews, following Consolidated Criteria for Reporting Qualitative Research (COREQ) guidelines. Six pediatric rehabilitation professionals, each with at least 10 years of experience, were involved to investigate the multidisciplinary management of chronic pain.

#### Results

Family involvement (30%), the multidisciplinary approach (25%), and the biopsychosocial model (20%) were identified as key elements in the management of pediatric chronic pain. The importance of preventing physical complications and improving the child's quality of life also emerged.

#### Discussion

The results confirm the importance of a holistic, multidisciplinary approach to managing pediatric chronic pain. However, some critical issues emerged, such as the limited early involvement of rehabilitation professionals and the need for better coordination between different healthcare professionals.

## Conclusions

The study highlights that a multidisciplinary and personalized approach is crucial in the management of pediatric chronic pain. While confirming the efficacy of the holistic approach, the results reveal the need for more efficient coordination between professionals and early involvement of rehabilitation specialists. Future studies with larger samples could validate the findings and refine recommendations for effective chronic pain management in pediatric patients.

**Keywords:** multidisciplinary approach; chronic pain; infants; rehabilitation; adolescents

## INTRODUCTION

Access to pain management is recognized as a fundamental human right, as established by Italian Law 38/2010 and reinforced by the Code of Ethics for Physiotherapists and the Ethical Code for Rehabilitation Health Professionals [1-4]. According to the International Association for the Study of Pain (IASP), pain is defined as "an unpleasant sensory and emotional experience associated with actual or potential tissue damage" [5]. Chronic pain, as defined by the World Health Organization (WHO), is pain that persists for more than three months, exceeding the normal recovery time from an injury or illness. This condition significantly affects quality of life and clinical outcomes [6]. Additionally, pain experiences at an early age can have lasting repercussions on the pain perception system in adults [7].

In 2021, the WHO issued new guidelines highlighting the management of chronic pain in children and adolescents as a public health priority, advocating a multidisciplinary approach integrating physical, psychological, and pharmacological interventions to alleviate pain in human beings aged 0 to 19 years [8]. In pediatric age, pain is common, afflicting between 20% and 46% of children and adolescents. Common manifestations include headaches, recurrent abdominal pain, an intercostal pain, as well as pain associated with chronic conditions such as rheumatic, oncological, and metabolic diseases [9].

A family-centered care approach is essential to ensure effective treatment [10]. This approach aligns with the biopsychosocial model, which considers the physical, emotional, and social dimensions of pain [11, 12]. Such a model requires a multidimensional assessment of pain and a multidisciplinary intervention strategy involving various healthcare professionals, including physicians, psychologists, nurses, and rehabilitation specialists [13, 14].

However, a review by Pico et al. (2023) [15], highlighted that healthcare providers' knowledge about pediatric chronic pain is often inadequate, especially in the assessment and management of pain. Current practices tend to focus on behavioral and symptomatic approaches, often neglecting the rehabilitation approach, which could improve functionality in children affected by chronic pain. The review emphasised the need to update the training of healthcare professionals in line with the latest scientific evidence.

Another review by Chambers et al. (2024) [16], confirmed the importance of non-pharmacological therapies such as *cognitive-behavioral therapy* (CBT), pain education, and family involvement, in improving long-term outcomes for pediatric patients. However, evidence supporting the long-term efficacy of these therapies remains limited, particularly among the most vulnerable pediatric groups, highlighting a need for further research to identify optimal non-pharmacological approaches.

In response to these considerations and the critical issues identified in the literature, the present study sought to investigate the perceptions and expectations of healthcare professionals regarding the multidisciplinary approach in the management of pediatric chronic pain, with the aim of identifying areas for improvement in order to optimize rehabilitation practices.

## MATERIALS AND METHODS

### Study Design

A qualitative research methodology was adopted, employing the Focus Group technique [17] and incorporating the use of unstructured interviews for data collection [18]. The study was conducted following the guidelines for qualitative research on the Consolidated Criteria for Reporting Qualitative Research (COREQ)[19], and in accordance with the methodological standards proposed by O'Brien et al. (2014) [20].

### Participants

The Focus Group included six pediatric rehabilitation professionals, selected on a voluntarily basis from a network of experts with established experience in pediatric rehabilitation. Participant selection was coordinated by two researchers specialized in pediatric chronic pain management. Inclusion criteria were a minimum of 10 years of professional experience, active involvement in multidisciplinary rehabilitation programs, and specific expertise in managing complex pediatric conditions, such as neurodegenerative diseases and congenital disabilities.

The participant group consisted of:

- 2 physiotherapists,
- 1 neurodevelopmental and psychomotor therapist for childhood (TNPEE),
- 1 orthoptist,
- 1 professional educator, and
- 1 occupational therapist (OT).

Of these, five were female and one was male, with ages ranging from 33 to 55 years (mean age: 32.4 years). All participants were from Northeast, Italy.



### Conducting the Focus Group

The Focus Group session was held on December 7, 2023, at a venue of the University of Padua, and lasted approximately 120 minutes. The group consisted of eight people: in addition to the six participants there were two members of the research team who played the role of facilitator and notetaker, without actively participating in the discussion. The stages of the Focus Group, along with the five open-ended guiding questions, are shown in Table 1. The questions, designed to explore pediatric chronic pain management in a multidisciplinary context, were validated by an external reviewer experienced in qualitative research to ensure relevance and effectiveness.

Focus Group Stage	Tasks Performed
<b>Part 1: Opening</b>	Introduction to the topic, invitation for active participation, assurance that there are no right or wrong answers.
<b>Part 2: Discussion</b>	<p>Questions guiding the discussion:</p> <ol style="list-style-type: none"> <li>1. "What is the conception of pediatric chronic pain in the healthcare context?"</li> <li>2. "What is meant by multidisciplinary treatment in the context of chronic pain?"</li> <li>3. "What are the different types of interventions can we put in place as rehabilitation professionals to manage chronic pain in children from a multidisciplinary perspective?"</li> <li>4. "How to assess the impact of pediatric chronic pain through a multidisciplinary approach?"</li> <li>5. "How can the family be involved in the treatment process?"</li> </ol>
<b>Parte 3: Closing</b>	Summary of key points raised and final conclusions.

Table 1: Phases of Focus Groups Activity

Sessions were audio-recorded and transcribed in full with the participants' informed consent, ensuring confidentiality and anonymity. Each participant was informed about the study's objectives and had the option to withdraw at any time.

The Focus Group was conducted in an informal manner to encourage open and active participation. The facilitator managed the transition between questions when the discussion on a topic appeared exhaustive, always soliciting additional comments on a topic before proceeding to the next one [18].

### Data Analysis

The observations collected were analyzed thematically, categorizing responses based on the main themes. Analysis was performed by an external researcher who did not participate in the session, to ensure objectivity and minimise *interpretation biases* [17].

### Ethical Considerations

The study was conducted in compliance with the ethical principles outlined in the Declaration of Helsinki. The confidentiality and privacy of the participants, who provided informed consent to participate and record their observations, was ensured.

## RESULTS

The main themes identified from the responses are shown in Figure 1, which highlights the most relevant subject areas dealt with by healthcare professionals. Notably, family involvement received 30% of the mentions, reinforcing the importance of a "family-centered care" model in managing pediatric chronic pain. The multidisciplinary approach, with 25%, underscores the need for close and continuous collaboration between different healthcare professional figures to ensure comprehensive and effective pain management. The biopsychosocial model, cited in 20% of responses, highlights the importance of also addressing the psychological and social aspects of pain. Literature supports this model, suggesting that factors such as emotional stress and social dynamics can profoundly influence the experience of pain and its management [24]. Finally, the prevention of physical complications (15%) and the improvement of quality of life (10%) suggest that treatment is not only limited to the reduction of pain, but also aims at the overall long-term well-being for the child, preventing further future complications.

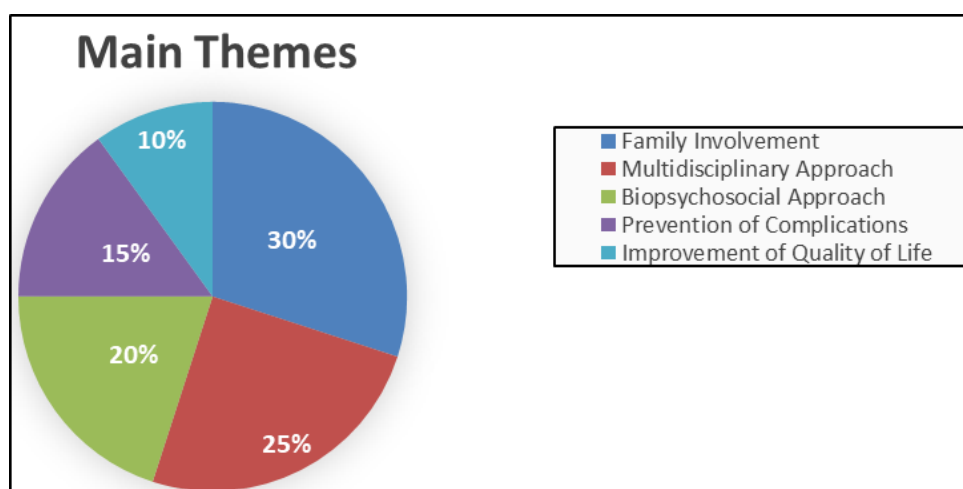


Figure 1: Distribution of Main Themes

Subsequently, the results are presented according to the individual questions posed to healthcare professionals, summarizing their perceptions. Key quotes were selected to highlight the main points of the discussion and present the diverse perspectives and contributions offered by the participants.

### What is the healthcare perspective on chronic pediatric pain?

The healthcare professionals interviewed described pediatric chronic pain as a complex condition requiring a holistic approach. It is not just a question of physical pain management, but also about addressing psychological and social aspects. Indeed, one participant emphasized: *“Chronic pain in children involves not only physical pain but also psychological and social aspects”* (Interviewee 2).

This holistic approach, which combines pharmacological and non-pharmacological treatments, is deemed essential for effective treatment [21]. As pointed out by another practitioner: *“...an attempt is made to interpret pediatric pain in a global manner, both in terms of management and treatment, considering approaches that are not only pharmacological and actively involving the family”* (Interviewee 5).

### What is meant by multidisciplinary treatment in the context of chronic pain?

Integration between physicians and rehabilitation professionals was deemed crucial for managing pain in children, especially in sensitive contexts such as pediatrics (Law n. 251/2000). Multidisciplinary treatment allows the issue to be addressed from several complementary perspectives:

*“Multidisciplinary treatment helps to recognize and appreciate each other's expertise”* (Interviewee 1).

As described by another participant:

*“The multidisciplinary approach allows mutual exchange, so that we can see the problem through each other's eyes”* (Interviewee 3).

This concept of “mutual exchange” highlights the sharing of expertise among professionals [22].

The focus of the child's quality of life clearly emerges as the primary goal, in line with the biopsychosocial model, which integrates psychological and social dimensions of pain [11].

*“Managing chronic pain means not only giving attention to the symptom, but also to all the related issues such as stress and anxiety”* (Interviewee 6).

However, it was noted that rehabilitation professionals are not always involved in early pain management, an aspect that may limit the quality of care [21].

*“Sometimes rehabilitation professionals are not involved in the management and treatment of pediatric pain”* (Interviewee 2).

### What are the different types of interventions we can implement as rehabilitation professionals to manage pediatric chronic pain from a multidisciplinary perspective?

The interviewees highlighted the central role of rehabilitation and the importance of family involvement. A physiotherapist explained:

*“Physiotherapy can be used to improve motor skills and promote mobility; the family should be involved in the rehabilitation sessions to learn exercises and strategies that can be applied at home”* (Interviewee 1).

Prevention of physical complications was noted as another relevant aspect [23]:  
*“Therapeutic exercises and motor re-education techniques can help prevent physical complications that often accompany chronic pain”* (Interviewee 4).

The relationship with the patient and their family was described as a key element for the success of the treatment. One professional cited Law n. 219 of 2017, stating that “relationship time is cure time,” emphasizing that building a trusting relationship is essential in the therapeutic pathway [24]. As indicated in the Guidelines for the Use of Narrative Medicine, this involves a concept of *kairos*—qualitative time. This approach does not merely humanize medicine, it integrates patients and families narrative into a shared and personalized care pathway, fostering a profound interaction between the clinical and human dimensions of care [25].

Play, especially sensory integration, was identified as a crucial tool for the child's psycho-physical well-being:

*“In the management and treatment of pediatric chronic pain, sensory integration must also be promoted, through play, which is every child's main means of expression”* (Interviewee 3).

Collaboration between different professional roles was equally important, particularly in addressing specific issues such as postural pain related to visual impairment [15].

*“One can think of the figure of the orthoptist, especially in managing chronic pain related to visual or postural issues... such corrections can contribute to improving the child's quality of life”* (Interviewee 1).

### How to assess the impact of chronic pediatric pain through a multidisciplinary approach?

The impact of chronic pain in children is not limited to the physical domain, but also extends to the emotional and relational dimensions. One interviewee described how pain affects participation in school and recreational activities [26]:

*“...muscle rigidity and tension can prevent them from participating in school or recreational activities calmly, and having fun”* (Interviewee 1).

Another highlighted the risk of school isolation, which could lead the child to feel excluded:  
*“...at school, the child would easily risk isolating himself and not socializing with peers, this could lead to the child feeling excluded”* (Interviewee 2).

Assessing the impact of chronic pain is done through the observation of physical and psychological signs, such as muscle tension, anxiety, irritability, and sleep disturbances [7]. Collaboration among various professionals is essential for a comprehensive assessment of pain:

*“I often think that if I collaborated with a neurodevelopmental therapist and an occupational therapist, I could provide a more comprehensive assessment and treatment of chronic pain in the child”* (Interviewee 5).

The multidisciplinary approach enables continuous monitoring and flexible adaptation to the changing needs of the child [15].

### How can the family be involved in the treatment?

One participant explained:

*“Rehabilitation professionals need to involve the child’s caregivers to educate them on the management of pain and what is related to it...”* (Interviewee 4).

This involvement enables parents to acquire skills that can be applied in the child’s daily life and school environment [26].

*“...the Patient and Family-Centered Care model has been shown to enhance therapeutic compliance through listening and sharing decisions, while also taking into account values and socio-cultural aspects”* (Interviewee 6).

## DISCUSSION

The results of the focus group confirm the importance of three central aspects in managing pediatric chronic pain: the family involvement, the multidisciplinary approach, and the adoption of the biopsychosocial model. Pain is a complex experience that compromises not only physical but also psychological integrity, with significant repercussions on the family context and the patient’s social relationships, profoundly impacting quality of life [6]. In pediatric setting, untreated chronic pain can worsen the prognosis, increasing recovery times and favoring the onset of complications [27].

The study carried out highlights that rehabilitation professionals play a key role in providing personalised support through integrated pain management and targeted education, directed not only at the child but also at their family [28]. A holistic approach, based on empathy and understanding of patient’s individual needs, is essential to improve their quality of life [8, 30]. However, a critical issue that has emerged is that rehabilitation professionals are not always involved in the early stages of pain treatment, which may limit the effectiveness of their contribution. A timely and continuous integration of all professional figures within the care team could significantly enhance treatment outcomes.

Moreover, the therapeutic relationship becomes a very important tool in the treatment pathway, since the creation of a climate of trust and a safe environment facilitates the exploration of emotional aspects related to chronic pain [31, 32]. Effective treatment is achieved when the entire family is actively involved by the multidisciplinary team. In this context, each professional brings his/her specific knowledge and expertise, but the real strength of the approach lies in the mutual interaction and continuous learning among team members. This exchange fosters the development of a broader and multifaceted understanding of the problem [33, 34].

Within the focus group, each professional offered a specific contribution. The physiotherapist emphasized the importance of preventing physical complications through targeted exercises, actively involving the family in the rehabilitation process to ensure continuity at home [4, 35]. The professional educator plays a key role in supporting and involving the family, providing educational and psychological tools to foster the child's autonomy in daily activities and creating a supportive environment that actively engages caregivers in therapeutic decisions [36]. The occupational therapist works to improve the child's quality of life through interventions aimed at restoring autonomy and modifying the environment to facilitate daily activities [37, 38], while the neurodevelopmental therapist focuses on areas of the child's development through play, which serves as the primary means of expression and learning in pediatric age, to reduce pain and promote motor and emotional development [37]. The orthoptist addresses visual disturbances that may cause pain or contribute to postural issues, conducting in-depth analyses to detect early visual deficits that can impact the child's overall well-being and aid in managing chronic pain [39]. Despite the strengths of our study, several challenges have emerged. While the diversity of the participants' work and educational backgrounds, enriched the discussion and fostered a multidisciplinary view, it also potentially introduced "hierarchical biases," whereby more experienced professionals may have influenced the discussion more strongly, limiting the free expression of less experienced members [17]. Furthermore, terminological and methodological differences between various professional roles could have led to misunderstandings, with the risk of compromising the effectiveness of information transmission.

Another limitation concerns the focus group itself, which may have fostered the so-called "conformity bias," in which participants tend to align themselves with dominant opinions in order to avoid disagreement [17]. Finally, the small sample size of only six participants represents a further limitation to the generalizability of the findings, reducing the applicability of the conclusions to other clinical or geographical contexts.

## CONCLUSION

This study explored the benefits and challenges faced by healthcare professionals in a multidisciplinary approach to managing pediatric chronic pain, highlighting the importance of an inte-

grated and personalized approach. The findings, consistent with the literature, confirm the crucial role of rehabilitation professionals, alongside the active involvement of the family, in improving the quality of life for children affected by chronic pain.

However, areas of improvement also emerged in the focus group. Better coordination between healthcare professionals, a more timely involvement of rehabilitation specialists, and more attention to the psychological and preventive aspects of chronic pain could enhance the effectiveness of treatment. Therefore, it is essential to continue promoting collaboration and dialogue among professionals to overcome these barriers.

In the future, research should be conducted on larger samples, incorporating diverse methodologies, such as individual interviews or questionnaires, to gather more representative and varied data. Involving professionals from different geographic areas or clinical settings could also strengthen the validity and transferability of the results.

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