*Original Research Article*

# Caregivers' Beliefs, Practices, and Experiences about Spoon Feeding Children with Cerebral Palsy from Rural North Karnataka

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**Editor:** Solomon Mekonnen

**Article History:**
Received: August 11, 2025
Accepted: October 30, 2025
Published: December 31, 2025

**Citation:** K.B Joanna, N Swapna G, Getcy Bebayal F. Caregivers' Beliefs, Practices, and Experiences about Spoon Feeding Children with Cerebral Palsy from Rural North Karnataka. DCIDJ. 2025, 36:4. doi.org/10.20372/dcidj.899



## ABSTRACT

**Aim:** Spoon feeding is a foundational skill supporting the transition from breastfeeding to independent eating. In India, however, traditional hand-feeding practices dominate, and limited research exists on spoon-feeding practices, especially in children with cerebral palsy (CP). Gaining caregivers' perspectives will benefit researchers in developing culturally relevant treatment protocols. This study aimed to explore the beliefs, practices and experiences of caregivers of children with CP from rural North Karnataka regarding spoon feeding.

**Methods:** Eight caregivers of children aged 2 to 17 years diagnosed with oral dysphagia secondary to CP participated in a focus group discussion. The discussion was video-recorded, transcribed, and thematically analysed.

**Results**: Eight key themes emerged: Spoon-feeding practice in families, Early experience with spoon feeding, Child's preference towards spoon feeding, Present status of spoon feeding, Communication by the child during feeding, Caregiver preference for spoon feeding, Managing spoon feeding difficulties and Impact of spoon feeding difficulties on the caregiver. Findings revealed a strong cultural preference for hand-feeding, with spoon use limited to semi-solid or hot foods, particularly in contexts such as school or travel. Early spoon-feeding attempts were inconsistent and often involved unsafe techniques, such as scraping food against the child's teeth or feeding in a supine position. Post-therapy, caregivers reported improved oral motor skills and greater acceptance of spoon-feeding. Non-verbal cues were commonly used by children to communicate hunger and fullness.

**Conclusion**: These insights underscore the importance of incorporating caregiver experiences into feeding interventions, emphasising the need to develop culturally sensitive training modules for rural Indian contexts.

**Implications:** Speech-language pathologists must consider these insights when designing caregiver education and feeding therapy protocols. Future research should involve larger and more diverse caregiver populations across different cultural and socioeconomic settings.

**Keywords**: Focus group discussion, Oral dysphagia, CP, Indian context, Thematic analysis, Cultural influence

## INTRODUCTION

Eating is one of the most multisensorial experiences that occurs in a child's developmental journey. It is done through various methods that evolve over time. Once a child is weaned from breast or bottle feeding, one of the earliest feeding methods introduced is spoon-feeding, which serves as a transitional skill, bridging the gap between infant feeding and independent eating. Coordinated oral-motor skills, such as lip closure, jaw stability, and tongue control, are essential for successful spoon feeding to manage the bolus and remove food from the spoon. The jaw opens to receive the spoon, the lips seal around it to prevent spillage, and the tongue collects and propels food backwards for swallowing. Meanwhile, the cheeks assist in stabilizing the bolus and supporting it, maintaining intraoral control. These skills not only promote efficient food clearance from a spoon but also support the development of later feeding methods such as chewing and cup drinking (Delaney & Arvedson, 2008).

However, children with cerebral palsy (CP) may have severe disruptions in the development of these oral-motor skills, which makes spoon-feeding particularly challenging. Feeding is negatively impacted by the motor, sensory, and postural challenges that children with CP frequently exhibit. Inadequate lip closure, instability in jaw, tonic bite reflex and issues with head and trunk control are some of their challenges, which can lead to ineffective spoon-feeding behaviours (Benfer et al., 2013). Furthermore, the presence of swallowing difficulties can make food manipulation and safe swallowing more difficult. Consequently, children with CP may remain dependent on caregivers for feeding far longer than typically developing children, with prolonged mealtimes, and increased caregiver stress (Sullivan et al., 2000).

The cultural setting in which feeding takes place is also crucial to understanding feeding difficulties. The feeding practices and utensils used during mealtimes vary significantly across cultures, influenced by historical traditions, local food preferences, and social norms. Chopsticks are the primary eating utensils in East Asian nations, such as China, Japan, and Korea, and are mainly used for eating noodles and bite-sized foods. Western nations, such as the US, Canada, and a large portion of Europe, on the other hand, primarily use spoons, knives, and forks. Hand-feeding is customarily preferred in South Asian nations, especially Bangladesh, India, and parts of the Middle East. In addition to promoting functional feeding, these culturally specific utensils also reflect values around self-reliance, hygiene, and social interaction during meals (Renda, 2013; Xu, 2014).

Culturally rooted practices, such as hand-feeding, are particularly preferred in Indian households during early childhood due to its sensory feedback, adaptability, and emotional bonding between the caregiver and child. Indian meals usually consist of hand-mixed, semi-solid foods that are simpler to handle by hand rather than with utensils. Spoons tend to be used selectively, such as for foods like kheer, porridge and other desserts.

While several studies have explored differences between baby-led weaning and spoon-feeding (Cichero, 2016; Karagoz et al., 2024), and feeding practices during and after breastfeeding (Pelto et al., 2003; Kwerengwe & Singh, 2023), there is a lack of research examining the beliefs and attitudes of caregivers of children with CP regarding spoon-feeding, particularly in a culturally complex setting like India, where spoons are not the dominant feeding tool. The cultural factors surrounding feeding can both support and impede progress for children with feeding difficulties, such as those associated with CP. Due to safety concerns about utensils or a lack of awareness of therapeutic value, caregivers often resort to hand-feeding. However, research shows that when properly introduced, spoon-feeding can improve lip closure and support oral motor development (Novotny, 2006; Sigan et al., 2013). Therefore, understanding how cultural norms inter-

sect with clinical needs is crucial for developing effective interventions, particularly in rural areas with limited access to specialized care (Dongre & Deshmukh, 2012).

To explore these complex, experience-based perspectives, qualitative methods such as focus group discussions (FGDs) are highly effective. FGDs allow researchers to capture shared beliefs, cultural practices, and challenges through interactions among participants (Kitzinger, 1995). This method is beneficial for studying culturally embedded caregiving behaviours and can yield insights that may not emerge through structured interviews or surveys.

Given the scarcity of research exploring caregiver beliefs about spoon-feeding in children with CP within rural Indian contexts, this study aims to fill that gap. Through a focus group discussion with caregivers in North Karnataka, this research investigates current spoon-feeding practices, caregiver attitudes, and perceived challenges. The findings are expected to inform culturally sensitive intervention strategies and promote better feeding outcomes for children with CP.

## METHODS

### Ethical approval

This study was conducted in accordance with the ethical principles outlined in the Declaration of Helsinki (1975), as amended in 2000. Ethical approval was obtained from our Institutional Review Board (Approval No. SH/IRB/M.1-12/2024-25, dated 23.12.2024). Informed consent was obtained in advance from the participants' legal guardians.

### Study Design

A qualitative, exploratory study design was employed using Focus Group Discussion (FGD) as the primary method for data collection. This approach is well-suited for exploring participants' attitudes, experiences, perceptions, and beliefs in a group setting that encourages interaction and idea generation.

### Setting

The FGD was conducted in a quiet room of the building.

### Participants

A total of eight caregivers from rural regions of North Karnataka participated in this study. These caregivers were the primary caretakers of children diagnosed with oral dysphagia due to CP, diagnosed by a team of professionals including a paediatrician/ paediatric neurologist, a physical therapist and speech-language pathologist, with the children's ages ranging from 2 to 17 years. Informed written consent was obtained from all participants prior to the study. Caregivers were included if they reported spoon-feeding difficulties in their children and consented to participate in a recorded discussion. Demographic details of the caregivers and their children are summarized in Tables 1 and 2.

**Table 1:** Demographic characteristics of caregivers who participated in the focus group discussion

| Caregiver Code | Age (Years) | Gender | Relationship to Child | Educational Qualification | Occupation | Socioeconomic Status (Modified Kuppuswamy scale, 2024) | Family Type |
|---|---|---|---|---|---|---|---|
| CG1 | 23 | Female | Mother | Primary education | Homemaker | Lower middle | Joint |
| CG2 | 38 | Female | Mother | Secondary education | Homemaker | Lower middle | Joint |
| CG3 | 34 | Female | Mother | Under graduate | Homemaker | Upper middle | Joint |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| CG4 | 38 | Female | Mother | Secondary education | Homemaker | Upper middle | Joint |
| CG5 | 28 | Female | Mother | Primary education | Homemaker | Upper middle | Joint |
| CG6 | 30 | Female | Mother | Under graduate | Homemaker | Upper middle | Joint |
| CG7 | 24 | Female | Mother | Middle school | Homemaker | Upper lower | Joint |
| CG8 | 31 | Female | Mother | Primary school | Homemaker | Upper lower | Joint |

**Table 2:** Demographic and clinical characteristics of children with cerebral palsy

| Child Code | Age (Years) | Gender | Type of CP | GMFCS Level |
|---|---|---|---|---|
| C1 | 5 | Male | Spastic | V |
| C2 | 16 | Female | Spastic | II |
| C3 | 8 | Female | Dyskinetic | II |
| C4 | 9 | Male | Spastic | IV |
| C5 | 5 | Female | Spastic | II |
| C6 | 7.5 | Male | Spastic | IV |
| C7 | 6.8 | Male | Spastic | II |
| C8 | 9.5 | Female | Spastic | IV |

## Procedure

A FGD was employed as the primary method of data collection to explore caregivers' experiences related to spoon-feeding their children. The discussion guide consisted of open-ended questions designed to elicit detailed narratives about feeding practices, challenges, and the contextual factors influencing spoon-feeding. Discussion topics included the child's abilities with spoon-feeding, types of food given, family support, and psychosocial experiences associated with feeding.

The FGD was conducted in Kannada to ensure linguistic and cultural appropriateness. The discussion lasted approximately 50 to 60 minutes and was both video and audio-recorded with participants' permission. The session was moderated by the first author. The recordings were then transcribed verbatim, and the Kannada transcripts were translated into English for analysis.

Thematic analysis, following the six-step process outlined by Braun and Clarke (2006), was used to analyse the data. The first step involved immersion in the transcripts through repeated reading. In the second step, line-by-line coding was manually performed to capture key ideas and experiences, which were labelled as initial codes. These codes were verified by a second researcher to ensure consistency. Saturation was considered achieved when no new codes emerged from the data. In the subsequent steps, codes were grouped into broader categories and refined into themes through an iterative review and comparison process. A total of eight key themes emerged from the analysis:

1. Spoon-feeding practice in families
2. Early experience with spoon feeding
3. Child's preference towards spoon feeding
4. Present status of spoon feeding
5. Communication by the child during feeding
6. Caregiver preference for spoon feeding
7. Managing spoon-feeding difficulties
8. Impact of spoon-feeding difficulties on the caregiver

These themes captured the breadth of caregiver experiences and highlighted the multifaceted nature of feeding difficulties among children with CP in rural contexts.

## RESULTS

After in-depth thematic analysis, the final list of themes, subthemes identified and some of the most illustrative quotes from each are depicted in Table 3.

**Table 3:** List of Themes, Subthemes and Illustrative quotes

| Theme no. | Themes | Subthemes | Example quotes |
|---|---|---|---|
| 1. | Spoon-feeding practice in families | a. Frequency of usage of spoon in the family | *At home, we don't use a spoon much because we mostly eat roti. Even payasa is made very thick, so we eat it with our hands. We use a spoon only when we go outside* (C1)<br><br>*Some people in my family prefer eating with a spoon as it looks more standard* (C2)<br><br>*We also eat idli with chutney using a spoon sometimes* (C3)<br><br>*There are seven members in our house—five use spoons, while two prefer eating with their hands* (C4)<br><br>*For pongal, bisi bele bath, and sweets, we now use a spoon. Earlier, everything was eaten by hand* (C6)<br><br>*We use a spoon mostly for hot and liquid foods* (C7) |
| | | b. Methods used for feeding their children | *Even while travelling, food is given by hand. Feeding my child with a spoon takes much longer than using my hands* (C2, C4)<br>*If support is given while eating with a spoon, then he eats it. The child likes eating on his own with a spoon, so I've reduced feeding with my hand, but I still provide support* (C6)<br>*We don't feed with a spoon, regardless of the situation* (C7, C8).<br>*Even for kheer, I feed my child using a glass instead of a spoon* (C8) |
| 2. | Early experience with spoon feeding | a. First food given with a spoon | *After 1 year, ragi porridge was given in a steel glass* (C1)<br>*At 4 months, ragi porridge was the first food fed using a spoon* (C4)<br>*I started feeding porridge at 9 months in a spoon by making the child lie down on his back, because, if made to sit, all the food used to spill out of the mouth* (C6) |
| | | b. Ease of feeding with a spoon | *Once I tried using a steel spoon, but it got stuck in the child's mouth, and it began to bleed. Hence, I stopped using the spoon* (C1)<br><br>*My child was not comfortable eating with a spoon as she hurt herself once while eating* (C2) |

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| 3. | Child's preference towards spoon feeding | - | *She doesn't like to eat from a spoon, but sometimes she asks me to give her one when she sees others using one. For eating certain foods, such as kheer, she uses a spoon* (C2)<br>*When eating with a spoon, he takes only a little bit. He prefers to eat with his hands as he can take a larger quantity and complete the meal faster. Additionally, he has difficulty taking the spoon to the mouth* (C4)<br>*Ever since I started feeding him with a spoon, he likes it. But when we are short on time, I feed him using my hand* (C6)<br>*My child doesn't like to eat with a spoon* (C7, C8) |
| 4. | Present status of spoon feeding | a. Skill deficits in spoon feeding | *He tries to take a bit of food from the spoon using his lips, but food spills* (C1)<br>*After attending therapy, I started showing her how to use her lips to take food from a spoon. She uses her lips only when I insist, but after that, she does not. Sometimes, she also tries to come forward to take food from the spoon. Food spillage is present* (C2)<br>*For semisolids, my child eats them neatly from the spoon. But for liquids, spillage would be present* (C3)<br>*While using the spoon, she opens her mouth, but takes only a little bit from the spoon, and mostly spills out the food, not clearing the spoon fully* (C4) |
| | | b. Independent spoon usage during eating | *My child eats with both a spoon and her hands. But eating with a spoon takes longer than eating with hands* (C2)<br>*My child doesn't know how to use a spoon and often spills the food. Therefore, if I feed, I use a spoon for 25% of the meal. She eats with her hand for the rest of the 75%* (C3) |
| 5. | Communication by the child during feeding | - | *She rarely expresses that she is full. She vomits when she is full* (C1, C5)<br>*I understand he is full when he burps* (C6)<br>*My child expresses fullness through facial expressions* (C7) |
| 6. | Caregiver preference for spoon feeding | - | *I stopped feeding with a spoon as it caused an injury in my child's mouth* (C1)<br>*Since we have hands, it's better to eat with them; we feel more satisfied when we feed or when children eat using their hands. However, we can't altogether avoid spoons — they are sometimes necessary for eating foods like smashed rice and kheer. Spoon feeding is also required when we go outside, as it helps the child eat neatly. It is an essential skill for children to learn when they start school* (C2) |
| 7. | Managing spoon-feeding difficulties | a. Efforts made by the caregiver to facilitate spoon | *Only porridge was fed in a spoon by making the child lie down on his back, because if made to sit, all the food would be spilt out of his mouth (C6)* |

| | | | |
|---|---|---|---|
| | | feeding | *I have never used a spoon to feed my child (C7, C8)* |
| | | b. Efforts made by the caregiver to seek external assistance | *Doctors and physiotherapists did not give proper referrals* (C4)<br><br>*A family member suggested using a silicone bib while feeding, which was very useful, as it was easy to clean and maintain* (C6) |
| | | c. Caregiver perspectives on the need to teach spoon feeding | *A spoon is required for specific food consistencies, such as kheer* (C1)<br><br>*It is useful for children with feeding difficulties* (C2)<br><br>*A spoon will be required when I admit my child to a regular school* (C3)<br><br>*Spoon-feeding helps reduce drooling and improves lip closure* (C4)<br><br>*A spoon is required during travel* (C6)<br><br>*It is important because it helps him develop the skills to eat more independently* (C7) |
| | | d. Caregiver's knowledge about methods to teach spoon feeding | Types of Spoons: *I am only aware of plastic and steel spoons* (C2)<br><br>*I became aware of silicon spoons after coming to therapy. Before that, I used ordinary spoons* (C5)<br><br>*I am unaware of the types of spoons, but I feel plastic spoons are unhealthy* (C6)<br><br>Body positioning for spoon-feeding: *We used to feed her, making her lie down* (C4)<br><br>*Only porridge was* fed *in a spoon by making the child lie down on his back, because if made to sit, all the food would spill out of the mouth* (C6) |
| 8. | Impact of spoon-feeding difficulties on the Caregiver | a. Family Support | *We haven't received any guidance from family members. We didn't get help from other family members to feed our children, as they were unaware of the methods and strategies and were also a little afraid to feed them* (C1)<br><br>*Not many people are there to help us with our daily chores and activities* (C2) |
| | | b. Caregiver Stress | *A long mealtime duration of about an hour stresses me out* (C5)<br><br>*It gets stressful when I am hungry and also need to feed the child* (C6)<br><br>*My child doesn't eat like other normal children, and it is stressful. Sometimes, when my child never expressed that he was hungry, it became even more stressful for me* (C7) |

## DISCUSSION

### Theme 1: Spoon-feeding practice in families

In Indian households, hand-feeding is a culturally ingrained practice, especially for infants and children. This tradition is shaped by a combination of sensory, practical, and emotional factors that influence caregiving behaviours. One key reason is the tactile feedback it provides to the caregiver. By using their hands, caregivers can better judge the temperature, texture, and quantity of food, allowing them to respond immediately to a child's oral-motor cues. This responsiveness is particularly critical for children with conditions like cerebral palsy (CP), who may have oral sensory issues (Dhiman et al., 2024). Another major factor is the flexibility in food texture. Indian meals often consist of semi-solid or mixed textures, such as mashed rice with dal, which are more easily handled and adjusted when feeding by hand. Hence, this served as a secure and effective method to ensure adequate intake, especially in children who have difficulty coordinating swallowing, thereby helping to prevent choking in those with poor oral-motor control (Kamal et al., 2022).

Hand-feeding is also deeply connected to emotional and social bonding, often viewed as an act of nurturing and love, strengthening the caregiver-child relationship. Additionally, adaptability is a practical benefit of hand-feeding. Unlike rigid utensils, hands can easily adjust to the child's posture, movements, and reactions, which is particularly beneficial for children with spasticity or hypotonia. Despite this strong cultural foundation, there is a gradual shift toward spoon use in specific contexts. Caregivers report using spoons during travel or when feeding hot or semi-liquid foods, such as kheer, where hygiene and ease of feeding are considered.

### Theme 2: Early experience with spoon feeding

The early experiences of caregivers with spoon feeding reveal significant variability in the timing and method of introducing complementary foods to children with CP. While some caregivers began spoon feeding as early as 4 months, others delayed until after the child turned one. This variation aligns with research findings indicating that children often experience deviations from typical feeding timelines due to parental concerns, cultural practices, or the child's medical and motor challenges (Dhami et al., 2019). Notably, caregivers frequently chose porridge-based foods as initial spoon-fed items, reflecting a cultural preference for soft, easy-to-digest options that can be modified in consistency. Additionally, some caregivers resorted to non-ideal feeding positions, such as lying down facing up, to manage spillage or support swallowing efficiency. Such practices may pose risks for choking and hinder the development of appropriate oral motor patterns (Redstone & West, 2004).

A recurring issue reported by caregivers was the physical difficulty of spoon feeding due to their child's limited oral motor skills. Nearly all caregivers encountered challenges, such as mouth injuries, discomfort during spoon feeding, and the child's inability to clear food from the spoon effectively. These difficulties led to compensatory techniques such as dumping food into the mouth or scraping it off on the child's upper teeth—methods that can discourage the development of active lip and tongue movements. Furthermore, caregivers lacked awareness about the availability and benefits of using softer materials, such as silicone spoons, which could minimise injury risk and promote safer, more comfortable feeding experiences. This finding highlights the importance of early caregiver education as part of feeding intervention programs, particularly in relation to selecting adaptive utensils and optimal feeding positions (Mlinda et al., 2018). Overall, these insights emphasize the importance of timely professional support and culturally sensitive guidance to improve initial spoon-feeding experiences to lay the foundation for long-term feeding success in children with CP.

### Theme 3: Child's preference towards spoon feeding

Children with CP demonstrated varied preferences toward spoon feeding, influenced by individual sensory, motor, and social experiences. While some children actively resisted spoon-feeding, others displayed situational acceptance, particularly when observing peers or to particular foods, such as kheer. Resistance to spoon feeding was often linked to difficulties in fine motor control, which affected self-feeding abilities and the effective clearance of the spoon. A contributing factor to spoon avoidance may be the predominant use of metal spoons in Indian households. For children with an active bite reflex, contact with a steel spoon can be particularly uncomfortable. Additionally, hypersensitivities in the gums or teeth, or increased dental fragility—often a side effect of seizure medications—may further contribute to aversion (Robbins, 2009; Ghafoor et al., 2014). Consequently, many children with CP appeared to prefer hand feeding, as it allowed for greater control over food volume and ease of intake.

### Theme 4: Present status of spoon feeding

The findings revealed considerable variability in the development and proficiency of spoon-feeding skills among children with CP. While some children demonstrated emerging oral motor coordination, others struggled with inconsistent lip use, difficulty in clearing the spoon and food spillage. These observations align with previous studies indicating that children with CP often exhibit impaired oral-motor control, including deficits in lip closure, tongue coordination, and jaw stability, which hinder effective spoon feeding (Bebayal et al., 2024; Ibrahim et al., 2025). Furthermore, caregivers reported that improvements in spoon feeding were typically observed only after guided therapy, reinforcing the role of structured intervention in promoting functional spoon-feeding behaviours.

In terms of independence during feeding, most children continued to rely on caregiver support, with only a few demonstrating partial self-feeding skills. The delay in achieving independent spoon use may be attributed to limitations in fine motor skills, poor trunk control, and reduced eye-hand coordination—all commonly observed in children with CP. While some children were able to use their hands or spoons during mealtime, self-feeding with a spoon was often time-consuming and less efficient compared to hand-feeding. The use of customised adapted utensils to overcome the limitations faced by each child would help promote functional independence in feeding (Lino et al., 2020)

### Theme 5: Communication by the child during feeding

The FGD findings revealed that children with CP primarily used non-verbal methods, such as gestures and pointing, to express hunger during mealtimes. These observations are consistent with existing research that highlights the reliance on non-verbal communication among children with complex communication needs (Tasgal, 2023). When it comes to expressing satiety, however, responses were more varied and less direct. Caregivers described cues such as facial expressions, burping, or even vomiting as signs of fullness. These subtle or physical indicators suggest that children with CP may face difficulties in developing or expressing typical satiety cues, possibly due to limitations in motor, sensory, or cognitive functioning. Several caregivers noted that their children rarely communicated fullness intentionally, with behaviours like gagging or vomiting becoming interpreted as signs to stop feeding. These findings emphasize the need for integrating communication aids, such as augmentative and alternative communication (AAC), into feeding therapy, to support children with CP in expressing hunger and satiety more effectively and comfortably. Moreover, the reliance of caregivers on hunger and satiety cues shows the responsiveness in the feeding style of caregivers (Kanan & Alam, 2021).

### Theme 6: Caregiver preference for spoon feeding

The findings highlighted the evolving perspectives of caregivers regarding spoon feeding in children with CP. While some caregivers initially avoided spoon use due to past negative experiences—such as oral injuries or perceived child discomfort—many later recognized its importance after participating in feeding therapy sessions. This shift highlights the importance of caregiver education and therapy in promoting an understanding of spoon feeding not merely as a method of food delivery, but as a therapeutic intervention supporting the development of essential oral motor skills. Research has shown that structured caregiver education enhances understanding and improves feeding outcomes for children with CP (Mansur et al., 2023; Mlinda et al., 2018; Wafeeq et al., 2022).

Caregivers emphasized the functional, social, and therapeutic relevance of spoon feeding. It was perceived as critical for facilitating lip closure, reducing drooling, encouraging mouth opening, and promoting cleaner, more manageable eating experiences, particularly in public or school environments. Additionally, caregivers noted that while hand-feeding is culturally preferred and emotionally fulfilling, the use of spoons is required to manage certain food textures, maintain hygiene while travelling, integrate children into school routines where better hygiene can be maintained while eating, and further foster inclusion with peer groups. These insights suggest that caregiver acceptance of spoon feeding increases when they understand its broader developmental, therapeutic, and social benefits.

The physical design and material of feeding utensils are also key factors influencing caregiver preferences and adherence to feeding strategies. The acceptability of a feeding tool kit is often rooted in cultural practices, hygiene perceptions, and local context. For example, a study conducted in Bihar, India, developed an innovative feeding toolkit—including a marked bowl, slotted spoon, and a pictorial counselling card—to improve the quality of maternal and child feeding practices. However, participants in that study expressed a strong preference for steel bowls and spoons over plastic, citing hygiene concerns and a lack of local acceptance for plastic eating utensils. Furthermore, traditional feeding practices were highlighted, as caregivers noted that steel bowls and spoons are commonly used to create sounds to help maintain children's attention during feeding. This evidence underscores that therapeutic recommendations for spoon feeding must be paired with locally and culturally sensitive utensil choices to maximize caregiver adoption and sustained use (Collison et al., 2015)

### Theme 7: Managing spoon feeding difficulties

The discussion revealed that caregivers of children with CP lacked awareness about appropriate spoon-feeding techniques before attending feeding therapy. Many caregivers either avoided spoon use due to cultural preferences or employed inefficient methods such as scraping food off the spoon with teeth or feeding the child in a position lying flat on back, face up. These practices, while common, may hinder the development of essential oral motor skills needed for safe and functional feeding. These have been emphasised by Maggioni et al. (2020), who found that inadequate feeding positions and utensil use can negatively impact swallowing safety and oral motor development. Caregivers in the present study reported learning more appropriate strategies, such as correct body positioning and spoon placement, only after engaging in structured feeding therapy. This underscores the critical role of professional intervention, particularly by speech-language pathologists, in equipping caregivers with practical, evidence-based techniques to support feeding success.

Another key finding was the delay in accessing appropriate professional support. Most caregivers initially consulted general medical professionals, but reported receiving inadequate or delayed referrals to speech-language pathologists, who are specifically

trained to manage feeding and swallowing disorders. This echoes prior research indicating that children with CP often face barriers to timely and appropriate feeding interventions due to fragmented care systems and lack of awareness among non-specialist providers (Lokheshwar & Rajasudhakar, 2021). Despite these early challenges, caregivers eventually recognized the multifaceted value of spoon feeding, including its functional, therapeutic, and social significance. These benefits, such as improved lip closure, reduced drooling, and enhanced readiness for school or social settings, are supported by literature emphasising the role of spoon-feeding in developing oral motor coordination and supporting age-appropriate feeding behaviours.

### Theme 8: Impact of Spoon-feeding Difficulties on Caregiver

The findings highlight the significant psychosocial impact that feeding difficulties have on caregivers of children with CP. A prominent concern reported was the lack of family support in managing feeding responsibilities. Many caregivers expressed feelings of isolation, with family members often hesitant or unwilling to assist due to fear of feeding-related complications or lack of knowledge about appropriate strategies. This aligns with previous literature indicating that caregivers of children with developmental disabilities frequently experience low levels of familial and social support, which can heighten the overall caregiving burden (Carlson & Miller, 2017; Oh & Lee, 2009). The absence of shared responsibilities may increase emotional strain and reduce opportunities for respite, thereby compounding caregiver stress.

Caregivers also reported elevated stress levels directly associated with the challenges of feeding their children. Prolonged mealtimes, difficulties in interpreting hunger cues, and the emotional burden of watching their child struggle with basic feeding skills were cited as key stressors. These concerns are in agreement with studies that have documented the increased stress and mental health burden among caregivers managing feeding and swallowing disorders in children with CP (Le Roux, 2023; Taylor et al., 2025). Although a minority of caregivers reported coping well, most described daily feeding as physically and emotionally exhausting, particularly when paired with other household responsibilities. These findings suggest that in addition to clinical interventions for the child, there is a pressing need for psychosocial support systems, caregiver training, and inclusive family education to reduce stress and foster a more supportive environment.

## CONCLUSIONS

This study provides valuable insights into the beliefs, practices, and experiences of caregivers of children with cerebral palsy (CP) regarding spoon-feeding in rural North Karnataka. The responses from caregivers revealed a strong cultural preference towards hand-feeding, with spoon-feeding gradually being adopted in specific contexts such as school settings, travel, and for semi-solid or hot foods. Early spoon-feeding practices varied among caregivers, with some introducing complementary foods earlier and others starting later. Children's preferences for spoon-feeding also differed, with some children enjoying the practice and others showing resistance. After attending feeding therapy focused on positioning, the use of flat spoons, and safe feeding practices with smooth, thick liquids, many caregivers reported a shift in preference toward spoon-feeding, recognising its role in facilitating the development of other oral motor and feeding skills. Caregivers managed spoon-feeding difficulties by using modified feeding positions to prevent food spillage and easier swallowing for children with CP. They used steel spoons for semi-solids by scraping or dumping food into the mouth. Additionally, challenges such as delayed or a lack of referrals to the right professionals hindered timely intervention. Communication during mealtimes was also found to be non-verbal, with caregivers relying on subtle physical signs and behavioural cues to identify hunger and satiety. Overall, the findings underscore the importance of caregiver education, early profes-

sional support, and culturally sensitive interventions to enhance feeding outcomes and promote a better quality of life for children with CP and their families.

However, the study's small sample size—limited to eight caregivers from a single rural region—may restrict the generalizability of its findings. To address this, future research should involve larger and more diverse caregiver populations across different cultural and socioeconomic settings. Additionally, there is a pressing need to develop structured caregiver training modules that reflect the cultural and contextual realities of rural India. Integrating such culturally sensitive, evidence-based practices into public health initiatives can lead to more effective and sustainable feeding outcomes for children with CP.

### Declarations

**Ethical approval:** This study was conducted in accordance with the ethical principles outlined in the Declaration of Helsinki (1975), as amended in 2000. Ethical approval was obtained from our Institutional Review Board (Approval No. SH/IRB/M.1-12/2024-25, dated 23.12.2024). Informed consent was obtained in advance from the legal guardians of the participants.

**Funding:** The authors declare that no funds, grants, or other support were received during the preparation of this manuscript.

**Availability of data and materials:** The data will be available upon reasonable request from the corresponding author.

**Authors' contributions:** KBJ and NS are responsible for the conception of the study. The research design, definition of intellectual content, literature search, data acquisition and analysis were performed by KBJ and GBF. GBF wrote the method section of the manuscript, and the introduction and discussion sections were written by KBJ. NS edited the manuscript critically and reviewed the final manuscript.

**Conflict of interest statement:** The authors have no competing interests to declare that are relevant to the content of this article. The authors declare no relevant financial or non-financial interests. All authors certify that they have no affiliations with or involvement in any organization or entity with any financial interest or non-financial interest in the subject matter or materials discussed in this manuscript.

## REFERENCES

Bebayal, F. G., Joanna, K. B., Kusuma, M., Swapna, N., Kumaresan, D., Priyanka, N., Krishnan, G. & Chandran, S. (2024). Investigation of feeding skills in children with neurodevelopmental disorders: A retrospective study. *Journal of Indian Speech Language & Hearing Association*, *38*(2), 146-154. https://doi.org/10.4103/jisha.jisha_54_24

Benfer, K. A., Weir, K. A., Bell, K. L., Ware, R. S., Davies, P. S., & Boyd, R. N. (2013). Oropharyngeal dysphagia and gross motor skills in children with cerebral palsy. *Pediatrics*, *131*(5), e1553-e1562.

Carlson, J. M., & Miller, P. A. (2017). Family burden, child disability, and the adjustment of mothers caring for children with epilepsy: Role of social support and coping. *Epilepsy & Behavior*, *68*, 168-173. https://doi.org/10.1016/j.yebeh.2017.01.013

Cichero, J. A. Y. (2016). Introducing solid foods using baby-led weaning vs. spoon-feeding: A focus on oral development, nutrient intake and quality of research to bring balance to the debate. *Nutrition Bulletin*, *41*(1), 72-77.

Collison, D. K., Kekre, P., Verma, P., Melgen, S., Kram, N., Colton, J., Blount, W., & Girard, A. W. (2015). Acceptability and utility of an innovative feeding toolkit to improve maternal and child dietary practices in Bihar, India. *Food and nutrition bulletin*, *36*(1), 24–32. https://doi.org/10.1177/156482651503600103

Delaney, A. L., & Arvedson, J. C. (2008). Development of swallowing and feeding: Prenatal through first year of life. *Developmental Disabilities Research Reviews*, *14*(2), 105-117.

Dhami, M. V., Ogbo, F. A., Osuagwu, U. L., Ugboma, Z., & Agho, K. E. (2019). Stunting and severe stunting among infants in India: The role of delayed introduction of complementary foods and community and household factors. *Global Health Action*, *12*(1), 1638020. https://doi.org/10.1080/16549716.2019.1638020

Dhiman, S., Kundra, S., Jha, N., Goyal, R. K., Ajmera, P., & Gulati, S. (2024). Sensory processing issues in children with cerebral palsy–A systematic review. *Current Developmental Disorders Reports*, *12*(1), 1-14. https://doi.org/10.1007/s40474-025-00323-4

Dongre, A. R., & Deshmukh, P. R. (2012). Social determinants of quality of elderly life in a rural setting of India. *Indian Journal of Palliative Care*, *18*(3), 181.

Ghafoor, P. F., Rafeeq, M., & Dubey, A. (2014). Assessment of oral side effects of Antiepileptic drugs and traumatic oro-facial injuries encountered in Epileptic children. *Journal of International Oral Health*, *6*(2), 126.

Ibrahim, A. F., Elsebahy, S. Y., Aldhahi, M. I., Khalaf, M. M., Torad, A. A., Mohamed Taha, M., & El-Sheikh, A. F. (2025). Influence of oromotor functions on motor development and feeding outcomes in children with cerebral palsy. *Annals of Medicine*, *57*(1), 2479587. https://doi.org/10.1080/07853890.2025.2479587

Kamal, S., Kamaralzaman, S., Sharma, S., Jaafar, N. H., Chern, P. M., Hassan, N. I., Toran, H., Ismail, N. A. S., Yusri, G., & Hamzaid, N. H. (2022). A review of food texture modification among individuals with cerebral palsy: The challenges among cerebral palsy families. *Nutrients*, *14*(24), 5241. https://doi.org/10.3390/nu14245241

Kanan, S., & Alam, M. J. (2021). Role of responsive feeding on nutritional status of children with cerebral palsy. *Social Science Review*, *38*(1), 217-248. https://doi.org/10.3329/ssr.v38i1.56532

Karagoz, I., Bayram, S., Caliskan, H., & Yilmaz, C. S. (2024). Differences in eating behaviours and mothers attitudes between baby-led weaning vs. traditional spoon-feeding approaches in Turkiye. *Appetite*, *203*, 107720.

Kitzinger, J. (1995). Qualitative research: Introducing focus groups. *BMJ*, *311*(7000), 299–302. https://doi.org/10.1136/bmj.311.7000.299

Kwerengwe, R. I., & Singh, K. (2023). Impact of knowledge, attitude and practice of mothers regarding complementary feeding on the nutritional status of children. *SALT Journal of Scientific Research in Healthcare*, *3*(2), 01-12.

Le Roux, R. (2023). *Caregivers' perceptions of caregiver burden, quality of life and support needs in caring for a child with cerebral palsy with feeding and/or swallowing difficulties within the context of the Western Cape, South Africa*. Masters thesis, Faculty of Health Sciences, Department of Pathology. http://hdl.handle.net/11427/39223

Lino, T. B., Martinez, L. B. A., Boueri, I. Z., & Lourenco, G. F. (2020). Effects of the use of assistive technology devices to promote independence in daily life activities for a child with cerebral palsy. *Revista Brasileira de Educação Especial*, *26*, 35-50. https://doi.org/10.1590/s1413-65382620000100003

Lokheshwar, S., & Rajasudhakar, R. (2021). Medical Practitioner's awareness on Speech-Language Pathologists and their services in India: A pilot study. *Journal of Interprofessional Education & Practice*, *23*, 100412. https://doi.org/10.1016/j.xjep.2020.100412

Maggioni, L., & Araújo, C. M. T. D. (2020). Guidelines and practices on feeding children with cerebral palsy. *Journal of Human Growth and Development*, *30*(1), 65-74. https://doi.org/10.7322/jhgd.v30.9974

Mansur, A., Sulistyawati, N., & Sari, I. M. (2023). Enhancing nutritional status in children with cerebral palsy: The impact of parental feeding rules counseling and special spoon utilization. *Indonesian Journal of Disability Studies,* 10(2), 273-286. https://doi.org/10.21776/ub.ijds.2023.10.02.11

Mlinda, S. J., Leyna, G. H., & Massawe, A. (2018). The effect of a practical nutrition education programme on feeding skills of caregivers of children with cerebral palsy at Muhimbili National Hospital in Tanzania. *Child: Care, Health and Development*, *44*(3), 452-461. https://doi.org/10.1111/cch.12553

Mohanty, M., Patle, R. A., & Narlawar, U. W. (2024). Modified BG Prasad and modified Kuppuswami socio-economic status scales: revision and updates for January 2024. *Preventive Medicine: Research & Reviews*, *1*(3), 166-167. https://doi.org/10.4103/PMRR.PMRR_28_24

Novotný, D. (2006). *Functional outcomes of a feeding intervention programme for infants and young children with cerebral palsy*. Master's thesis, University of Cape Town. https:// open.uct.ac.za/handle/11427/11625

Oh, H., & Lee, E. K. O. (2009). Caregiver burden and social support among mothers raising children with developmental disabilities in South Korea. *International Journal of Disability, Development and Education*, *56*(2), 149-167. https://doi.org/10.1080/10349120902868624

Pelto, G. H., Levitt, E., & Thairu, L. (2003). Improving feeding practices: current patterns, common constraints, and the design of interventions. *Food and Nutrition Bulletin*, *24*(1), 45-82.

Redstone, F., & West, J. F. (2004). The importance of postural control for feeding. *Pediatric Nursing*, *30*(2), 97-100.

Renda, G. (2013). *Design for social inclusion: A study investigating the emotional effects of adaptive cutlery*. Doctoral dissertation, Swinburne.

Robbins, M. R. (2009). Dental management of special needs patients who have epilepsy. *Dental Clinics of North America*, *53*(2), 295-309. https://doi.org/10.1016/j.cden.2008.12.014

Sığan, S. N., Uzunhan, T. A., Aydınlı, N., Eraslan, E., Ekici, B., & Calışkan, M. (2013). Effects of oral motor therapy in children with cerebral palsy. *Annals of Indian Academy of Neurology*, 16(3), 342–346. https://doi.org/10.4103/0972-2327.116923

Sullivan, P. B., Lambert, B., Rose, M., Ford-Adams, M., Johnson, A., & Griffiths, P. (2000). Prevalence and severity of feeding and nutritional problems in children with neurological impairment: Oxford Feeding Study. *Developmental Medicine & Child Neurology*, 42(10), 674–680. https://doi.org/10.1017/s0012162200001244

Tasgal, M. (2023). *Mothers who listen with more than ears: The phenomenological experience of the non-verbal communication between mothers and their child with complex cerebral palsy*. Doctoral thesis, Middlesex University / New School of Psychotherapy and Counselling. https://repository.mdx.ac.uk/item/8q46z

Taylor, C., Badawi, N., Novak, I., & Foster, J. (2025). Caregivers' experiences of feeding children with cerebral palsy: A systematic review of qualitative evidence. *JBI Evidence Synthesis*, *23*(4), 704-755. https://doi.org/10.11124/JBIES-24-00208

Wafeek, A. A., El-Sharkawy, S. S., Abd Al-Moniem, I. I., & Morsy, M. A. (2022). Effect of nursing interventions on feeding difficulties of children with cerebral palsy. *Evidence-Based Nursing Research*, 5(3), 14-21.

Xu, M. (2014). *Relationship between utensils and food*. Master's thesis, ARC III - School of Design. https://hdl.handle.net/10589/121948