CHANGES IN PERCEIVED AND REAL KNOWLEDGE, CONFIDENCE AND ANXIETY REGARDING FEEDING AMONG I LANKAN TAMIL MOTHER OF CHILDREN WITH CEREBRAL PALSY AND ASSOCIATED DYSPHAGIA FOLLOWING AN EXPERIMENTAL WORKSHOP

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SUMMARY

The main aim of this study was to measure the potential difference in knowledge, confidence and anxiety of 15 Sri Lankan-Tamil mothers who have children diagnosed with cerebral palsy and feeding-related difficulties following on from an experiential workshop. Pre- and post-workshop questionnaires were reviewed to determine change. All the participants showed a significant positive change in their reported level of knowledge and confidence at feeding their child with cerebral palsy and a decrease in the level of anxiety during mealtimes. The qualitative data analysis indicated changes in participant knowledge, particularly on signs of aspiration and positioning during mealtimes. The current findings support experiential training for caregivers to ensure safe and appropriate feeding of children with cerebral palsy.

KEY WORDS: cerebral palsy, dysphagia, mothers, knowledge, confidence, anxiety, workshop
Cerebral palsy presents challenges to the individual and his/her caregiver. It can affect the speech and communication skills, motor skills, independence in activities of daily living such as eating and drinking (1, 2, 3, 4). Feeding difficulties and swallowing disorders including failure to thrive, poor nutrition and hydration, gastroesophageal reflux and/or constipation (2) and aspiration (3, 4) are frequent difficulties associated with cerebral palsy (1).

The potential complex needs of a child with cerebral palsy require a multidisciplinary approach to intervention and management. The remit of a speech and language therapist is to encourage children with cerebral palsy to reach their potential in their communication skills and to support safe eating and drinking skills. With regard to the latter, the speech and language therapist offers support to caregivers to feel competent, confident and informed when feeding their child with cerebral palsy. An often overlooked aspect of therapy intervention is how parent/caregiver knowledge, attitudes, and perceptions of the child’s difficulties as well as their own perceived skill at feeding the child could affect the child-caregiver relationship, how the parent/caregiver copes with the demands of their role and the mealtime experience for both parent and child.

Many remedial measures are possible, such as awareness-raising campaigns, information leaflets and training on dysphagia-related issues in children. Caregivers with a comprehensive understanding of the necessity for dysphagia strategies may be more likely to adhere to speech and language therapy recommendations (16). In recent times, there has been a focus on providing training for nursing staff, other healthcare professionals, and parents/carers to support safe feeding practices (5,6,7).

There have been very few studies investigating the connection between caregiver feeding practices and child factors on feeding issues. A study by Williams and colleagues (8) found that child factors were predictors of the child’s weight status while both parental and child factors were associated with diet variety and behaviour problems during mealtimes. It could, therefore, be argued that providing knowledge and training to caregivers could influence feeding practices and thereby minimize feeding problems.

In a pilot study evaluating adherence to speech and language therapy recommendations by carers at day centers, Crawford et al. (6) uncovered more compliance with direct support advice (100%) compared to suggestions on utensils (64%). Chadwick et al. (5) in an observational study of adults with learning difficulties and their...
caregivers concluded that in general, speech and language therapy recommendations were being followed. Adherence to recommendations regarding texture modification was particularly high compared to those related to positioning, equipment and prompting strategies.

In contrast, a study of career compliance with eating and drinking recommendations for adults with learning difficulties conducted subsequently by Chadwick and colleagues (9) found that caregivers identified difficulties with modifying food and drinks and with using prompting strategies (e.g. such as for pacing) as well as with positioning adults with learning difficulties during mealtimes. The authors recommend that additional training of caregivers on their role and responsibilities to ensure safe oral intake and monitoring is essential to support adults with learning difficulties experiencing dysphagia.

There is some literature on training programmes for nursing staff targeting screening and management of clients with dysphagia in the hospital setting (10,11,12). In addition, a few studies are available on training care staff in community settings to support clients with dysphagia (5,9). In one such exploratory study of carer knowledge of dysphagia management strategies and their behavioural compliance to speech and language therapy recommendations, Chadwick and his colleagues (5) found that recommendations on food textures and modified equipment were more readily remembered than client-support strategies such as prompting and pacing. This disparity between carer knowledge and practice has implications for dysphagia training of care staff. One way of addressing this disparity may be to offer training workshops with experiential learning opportunities to increase carer knowledge.

Miller and Krawczyk (12) stress the need to engage nurses as ‘active learners’ in training, employing a combination of teaching styles, thus promoting the nurses to ‘reflect on their own experience, try things out in practice and apply theoretical learning to practical situations’ (pg. 381). The authors connect this suggestion with Kolb’s (13) assertion of an ‘experiential learning cycle’, which includes components of practical experience and reflection.

The transformation of newly acquired knowledge into behaviour by caregivers following training workshops has been less clear in the literature. For instance, Morch (14) reported on poor compatibility between knowledge of dysphagia management and the practical use of therapy strategies. In contrast, Chadwick and his colleagues (15) found an extremely high practice of speech and language therapy recommendations among carers and independent, self-feeding adults with learning difficulties. This, in turn, was not compatible with the findings regarding elderly clients made by Leiter and Windsor (16). Although limited in number, there is a need to evaluate the efficacy of
training programmes (17) to ensure that carriers have gained in knowledge, competence and confidence. The purpose of the present study was to evaluate potential changes in knowledge and confidence among participants following a workshop on supporting eating and drinking skills in children with cerebral palsy.

**RESEARCH QUESTION**

The research study aimed to answer the following question:
Can a workshop change the perceived and real knowledge, confidence and anxiety of mothers feeding their child with cerebral palsy?

**METHODS**

**The dysphagia workshop**

An experiential workshop on feeding-related difficulties in children with cerebral palsy was designed based on the dysphagia literature and the finding from semi-structured interviews held with the 15 participants, which was a needs assessment to identify areas of concern. The interviews were conducted to uncover the mothers’ perceptions of the mealtime experience with their child, to identify the key factors influencing this experience and to uncover their perceived training needs. In all, the mothers identified 12 feeding-related concerns. These included factors related to the child such as positioning, independence and swallowing; factors related to the carrier or feeder such as confidence of the feeder and the high level of anxiety experienced by the feeder and factors concerning the mealtime experience such as the duration (Table 2).

<table>
<thead>
<tr>
<th>Factors related to the child</th>
<th>Factors related to the caregiver</th>
<th>Factors related to the mealtime experience</th>
</tr>
</thead>
<tbody>
<tr>
<td>Choking (potential aspiration) = 15</td>
<td>Confidence of feeder=14</td>
<td>Food textures=9</td>
</tr>
<tr>
<td>Chewing=12</td>
<td>Anxiety of feeder=12</td>
<td>Duration=14</td>
</tr>
<tr>
<td>Drinking from a cup=5</td>
<td></td>
<td>Positioning=14</td>
</tr>
<tr>
<td>Independence=13</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nutrition=9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hydration=9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Swallowing=13</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The lack of awareness among the mothers on cerebral palsy in general, positioning during feeding, potential signs of aspiration and modifying food, which emerged as areas of concern (table 1 above) formed the basis of the workshop offered. These aspects were included as the key learning objectives of the workshop.

The workshop contained the following sub-sections:

- Cerebral palsy and associated difficulties
- Phases of the ‘normal’ swallow
- The development of eating and drinking skills in children
- Potential difficulties at each phase for a child with cerebral palsy
- Dysphagia and related health issues
- Potential signs of aspiration
- Client-centred strategies during mealtimes; positioning; the pace of offering food; prompts to swallow and texture modification
- Communication during mealtimes
- Experiential activities on the pace of feeding and the posture and positioning during mealtimes
- ‘Question and Answer’ session on individual difficulties encountered when feeding their child

The workshop ran for 3 hours in the morning at a community centre accessed by all the participants. The workshop included a mixture of basic theory in the form of a PowerPoint presentation, experiential learning activities, modeling of important procedures and an interactive ‘Question and Answer’ session. The participants were offered experiential learning activities in pairs and small groups related to posture, food textures, and client-centred strategies (e.g. pacing; lack of choices). Techniques of posing target questions (19) in-line with ‘top-down processing’ and pictorial support and activities connected to different learning styles (13) were to be used to support learning.

I conducted the workshop in my role as a speech and language therapist together with the community centre manager who is a special education therapist cum social worker. He was also the official translator during the workshop as he is a fluent bilingual speaker of English and Sri Lankan Tamil. His familiarity with the participants who all accessed the community centre supported the interaction during the workshop. In addition, a Bobath-trained physiotherapist was available to answer questions during the ‘Question and Answer’ session. The group of instructors reflects the multidisciplinary team approach promoted through the workshop.

**Questionnaire design**

The aim of the current study was to evaluate the efficacy of the workshop offered on the participants’ level of knowledge, confidence,
and anxiety during mealtimes. To do so, a self-administered questionnaire was designed, which contained quantitative and qualitative sections. The questionnaire in Sri Lankan Tamil consisted of 15 statements with Likert-type responses ranging from 'very little' to 'very good'. In addition, it contained 12 open-ended questions. Both types of questions aimed to uncover the level of knowledge, anxiety, and confidence felt by the mothers on feeding-related matters before and after the workshop.

The questionnaire was trialed with 3 mothers who each had a child diagnosed with cerebral palsy and dysphagia. A change was made to question 9 on the categorization of food, to make it simpler as two of the mothers requested for clarification. The rest of the questionnaire was able to generate the information sought.

The questionnaire devised by the researcher was given to the participants to be filled in before the start of the workshop. Due to the researcher’s limited knowledge of Tamil, an interpreter was available to help with reading out the questionnaire and writing down the participants' responses if necessary. At the end of the workshop, a copy of the same questionnaire was given to the participants to be filled in again.

**Ethical issues**

Ethical approval was gained from the Ethical Research Committee of the Faculty of Medicine, Ragama, Sri Lanka. Each participant was provided with an information sheet in Tamil and was expected to fill-in a written consent form prior to data collection.

**Participants**

Fifteen Sri Lankan Tamil mothers of children with cerebral palsy who experience feeding-related difficulties were invited to attend an experiential workshop on dysphagia. They were all from a deprived area in Colombo (the capital city), attending a local support center. One of the participants was a principal cum teacher of a special educational needs school, to which many of the other participants sent their children. There were also two other special educational needs teachers from the same school. All three teachers had children with cerebral palsy and associated eating and drinking difficulties. The mix of mothers and teachers was an attempt to promote a multidisciplinary approach to the management of dysphagia in children with cerebral palsy.

**Eligibility criteria**

The participants were eligible for the study if they were:
A caregiver to a child with cerebral palsy who has feeding difficulties
A first language speakers of Tamil
Willing to fill in the questionnaire either independently or with help to
read and write

Tamil mothers included in the study were between 22 to 45 years of
age. The majority were fulltime mothers, many of who said they chose to
stay at home to look after their child with cerebral palsy. Some key
demographic details are provided in Table 2 below.

Table 2: Demographic details of the participants

<table>
<thead>
<tr>
<th>Participant number</th>
<th>Mother’s age</th>
<th>Mother’s occupation</th>
<th>Diagnosis of child</th>
<th>Child’s age</th>
<th>Child’s gender</th>
</tr>
</thead>
<tbody>
<tr>
<td>P1</td>
<td>27</td>
<td>Part-time teacher</td>
<td>Athetoid</td>
<td>11;02</td>
<td>M</td>
</tr>
<tr>
<td>P2</td>
<td>22</td>
<td>Part-time seamstress</td>
<td>Mixed</td>
<td>3;02</td>
<td>M</td>
</tr>
<tr>
<td>P3</td>
<td>24</td>
<td>Fulltime mother</td>
<td>Mixed</td>
<td>3;06</td>
<td>F</td>
</tr>
<tr>
<td>P4</td>
<td>42</td>
<td>Fulltime mother</td>
<td>Spastic diplegia</td>
<td>15;03</td>
<td>M</td>
</tr>
<tr>
<td>P5</td>
<td>34</td>
<td>Teacher</td>
<td>Athetoid</td>
<td>11;00</td>
<td>M</td>
</tr>
<tr>
<td>P6</td>
<td>22</td>
<td>Fulltime mother</td>
<td>Mixed</td>
<td>3;06</td>
<td>M</td>
</tr>
<tr>
<td>P7</td>
<td>26</td>
<td>Fulltime mother</td>
<td>Athetoid</td>
<td>4;04</td>
<td>F</td>
</tr>
<tr>
<td>P8</td>
<td>31</td>
<td>Part-time teacher</td>
<td>Spastic diplegia</td>
<td>9;01</td>
<td>M</td>
</tr>
<tr>
<td>P9</td>
<td>38</td>
<td>Fulltime mother</td>
<td>Spastic quadriplegia</td>
<td>13;00</td>
<td>M</td>
</tr>
<tr>
<td>P10</td>
<td>36</td>
<td>Fulltime mother</td>
<td>Spastic quadriplegia</td>
<td>13;02</td>
<td>M</td>
</tr>
<tr>
<td>P11</td>
<td>45</td>
<td>Fulltime mother</td>
<td>Spastic quadriplegia</td>
<td>24;00</td>
<td>M</td>
</tr>
<tr>
<td>P12</td>
<td>28</td>
<td>Fulltime mother</td>
<td>Spastic quadriplegia</td>
<td>7;05</td>
<td>M</td>
</tr>
<tr>
<td>P13</td>
<td>34</td>
<td>Fulltime mother</td>
<td>Spastic quadriplegia</td>
<td>11;03</td>
<td>M</td>
</tr>
<tr>
<td>P14</td>
<td>24</td>
<td>Fulltime mother</td>
<td>Mixed</td>
<td>4;02</td>
<td>F</td>
</tr>
<tr>
<td>P15</td>
<td>28</td>
<td>Vegetable seller</td>
<td>Mixed</td>
<td>4;06</td>
<td>F</td>
</tr>
</tbody>
</table>

Data analysis

The interpreter translated the written responses of the participants in
the questionnaires from Sri Lankan Tamil into English once the
questionnaires had been handed over to the researcher. One section of
the questionnaire included questions pertaining to knowledge,
confidence and anxiety with Likert-type responses (e.g. Very little, Little,
Satisfactory, Good, Very good) that were converted into numbers (i.e.
Very little=1; Very good=5) to ascertain any changes in knowledge or
confidence in each participant. In addition, a thematic analysis was
carried out on the qualitative data gathered to ascertain any changes in
participant knowledge. The questionnaires were examined for evidence
of knowledge on cerebral palsy, associated eating and drinking difficulties, posture and positioning during mealtimes, aspiration, and client-centred strategies both pre- and post-workshop. A simple grid was used to document each participant’s responses in the two questionnaires filled under the categories listed above. This enabled a clear analysis of any change in knowledge.

RESULTS

The quantitative data looked at changes in the participants’ own subjective view of themselves with regard to knowledge, confidence, and anxiety. In addition, the qualitative data looked at an objective difference in participant knowledge before and after the workshop.

Quantitative data

Knowledge

There was a marked increase in the level of knowledge as perceived by the participants following on from the workshop in twelve of the mothers. Three of the participants acknowledged no difference in their level of knowledge (graph 1).

Graph 1: Changes in participant knowledge

Confidence

There was also a significant change in the level of confidence at feeding their child with cerebral palsy expressed by thirteen of the participants. Two participants reported no change in their level of confidence (graph 2).
Graph 2: Changes in participant confidence

Graph 3: Changes in participant anxiety

Anxiety

Ten of the participants expressed a marked decrease in the level of anxiety they felt when feeding their child following the workshop (graph 3). Four of the mothers noted no marked difference in their level of confidence while one reported a slight increase. This participant, who is also a teacher, reported that she felt more anxious as she realized that she was ‘doing things wrong in the school’ (P1).
Qualitative data

The qualitative data was analysed under the three main areas of knowledge, confidence, and caregiver anxiety.

Knowledge

The qualitative responses on the questionnaires before and after the workshop indicated differences in participant knowledge on cerebral palsy, positioning during mealtimes, aspiration, and food textures.

Knowledge on cerebral palsy

Six of the fifteen mothers showed a difference in their knowledge on cerebral palsy and the potential eating and drinking difficulties associated with it. Of these six mothers, Sithee8 (P5), a mother of a young boy with athetoid cerebral palsy had this to say before the start of the workshop:

‘I’m not sure how you describe cerebral palsy. My child cannot walk or talk. He is dependent on me for everything.’

However, she indicated a marked change in her understanding of cerebral palsy by the end of the workshop, stating that:

‘Cerebral palsy describes a person who has difficulties with movement like standing and walking. It is due to brain damage because of a disease or some mishap at birth.’

Akin to Sithee (P5), Subojini (P11), a mother supporting her 24-year-old son with spastic cerebral palsy had stated that she had no idea what ‘cerebral palsy’ meant. However, she did indicate a change in her understanding of the term, explaining that it ‘is a problem of movement because of brain damage’ in the questionnaire following on from the workshop.

Knowledge on positioning

Prior to the workshop, twelve of the fifteen participants commented on a lack of awareness on how to position their child during mealtimes. All twelve of these participants displayed a qualitative difference in their knowledge on positioning of a child with cerebral palsy during mealtimes by the end of the workshop. Geethika (P9), a mother with a 13 year-old son with spastic cerebral palsy had expressed much concern about positioning saying ‘…I have no idea. I place him on his back and hold his hands down. It is very difficult to feed him. I don’t

8 Pseudonyms used throughout to safeguard confidentiality.
know if this is the right position for him’ (P9) prior to the start of the workshop. Her knowledge had changed markedly after the workshop as she had noted the following:

‘Face to face position. Place the child opposite me and look at her face while feeding. She might then enjoy the experience. Maintain an upright posture if possible at 90/90/90 degrees’ (P9)

Yet another participant, Sandya (P1), who has a young son with athetoid cerebral palsy, had detailed similar concerns prior to the workshop stating, ‘It’s very difficult to feed X. I have to hold his hands. I lie him down. He does not like it but I don’t know how to feed him otherwise’. Nevertheless, this view had changed post-workshop as she stated that ‘adjusting his posture and controlling his involuntary movements is important during mealtimes. Maintaining an upright posture if possible would benefit X as it may help him not to cough or choke during the meal’.

Knowledge on aspiration

Overall, there was little understanding of the term ‘aspiration’, but most mothers feared the child choking during mealtimes. Eleven of the fifteen mothers indicated a qualitatively better understanding of the process and the potential overt signs of aspiration following the workshop.

Kamani (P2), a mother of a 3;02 year old with mixed-type cerebral palsy said ‘I don’t know’ (P2) prior to the start of the workshop to a question requiring an explanation of aspiration. Her knowledge had changed noticeably by the end of the workshop as she explained that aspiration is ‘food or liquid going down the windpipe into the lungs’. Similarly, Parveen (P6), a mother of a young child with mixed-type cerebral palsy showed a change from her former view of ‘I have not heard the word before’ to ‘I understand that aspiration is food and drink going down the wrong way, into the lungs. I worry about X choking on food. I now know what signs to look for. I’ll be more vigilant.’

As seen in the comment by Parveen above, a few of the mothers had also noted down their observations, reflecting on potential signs of aspiration following on from the workshop. Priti (P14), a young mother with a 4;02 year-old daughter with mixed-type cerebral palsy had written:

‘I did not know how dangerous it is to feed X when she is lying down. I will place her upright and look out for signs of difficulty like blinking her eyes, coughing or some change in her breathing’.
Knowledge on food textures

Five of the participants indicated a change in their understanding and knowledge of food textures. One of these participants, Sharmila (P7) wrote that she was ‘not sure what food to give her daughter’, stating ‘as my child is not chewing food, she may be malnourished, she may choke. I am worried’. However, by the end of the workshop, she wrote that she is more aware of food textures and that she will ‘offer food of an appropriate texture for her (child)’. She had gone on to write that she ‘learnt that food could be categorized into different textures, some easier and some harder for a child to chew and to swallow’.

GENERAL COMMENTS

Six of the participants had included general comments in the questionnaires they filled in both at the start and at the end of the workshop. These included their thoughts on safe feeding practices and dependence during mealtimes.

Safe feeding practices

Concerns about safety during mealtimes expressed by the mothers included how to position the child during mealtimes. Four of the participants had stated such concerns within the comments section prior to the workshop. The comment by Devi (P3), a mother with a 3;06 year old with mixed-type cerebral palsy was typical of the comments provided. She described her concerns, as ‘I don’t know how to place her when I feed her. She falls forward. I don’t know what to do’ (P3). By the end of the workshop, she reported some knowledge of what she could try with regard to positioning saying:

‘I will be more careful about my child’s positioning during meals. I understand why I must support my child to stay upright during meals if possible. I did not know before how dangerous bad positioning can be for her.’ Similarly, Sangeeta (P13) had reported concerns about positioning stating:

‘I place him on the mat on the floor. If I sit him on a chair, he moves about and the food goes everywhere. I don’t know if I should do this.’ Nevertheless, after the workshop, she had commented on positioning in the following way: ‘I will be more careful about my child’s positioning during meals’ (P13)

Another mother explaining her concerns about safety during mealtimes, Poonam (P8), a mother of a 9;01 year-old boy with spastic diplegia noted the following before the workshop: ‘I am worried about how to feed X.
Sometimes, he coughs when eating and I am scared he will choke. I do not give him any yoghurt or milk. He has a lot of phlegm’ (P8)

Her concerns had changed to a comment on what she felt she gained from the workshop by the end, as she had reported the following: ‘I learnt how to feed food and give water to my child safely. I must look out for signs of aspiration’ (P8)

**Dependence during mealtimes**

Five of the six mothers who wrote additional comments had mentioned their anxiety about their child’s level of dependence during mealtimes. One such mother, Lakshmi (P4), who supports her 5;3 year old son with spastic diplegia during mealtimes had noted: ‘He cannot move on his own. I have to do everything for him’ (P4)

She had commented differently at the end of the workshop, presenting her views in the following way: ‘I know that he is dependent on me but I learnt today that I must focus on the things I can change to keep him safe. I can also encourage him to hold spoons or a biscuit. It’s a slow process.’

*Devi (P3), another mother had expressed concerns about both her child’s ability to feed herself independently and the duration of mealtimes. She had stated this as follows:‘I am sad when it takes time to feed X. She can’t feed herself. How do we make the child independent to eat on her own? That’s my main concern.’*

Her comments in the post-workshop questionnaire indicated a difference in concern and tone. She had noted: ‘I should focus on keeping my child safe, even if I have to feed her. That’s the main concern. Eating independently may be possible in the future.’

**DISCUSSION**

This study aimed to investigate the potential change in knowledge, confidence and anxiety among mothers when feeding their child with cerebral palsy following an experiential workshop. The results presented above indicate a significant positive change among the participants on their perceived level of knowledge on eating and drinking difficulties in children with cerebral palsy and in their level of confidence at feeding their children post-workshop. There was also a decrease in the level of perceived anxiety about feeding their child with cerebral palsy reported by the participants at the end of the workshop. In addition, there was also a marked difference in participant knowledge post-workshop on
cerebral palsy, appropriate positioning during mealtimes and signs of aspiration, and to a lesser extent, on texture modification.

The learning outcomes of the workshop were monitored by a pre- and post-training questionnaire, consisting of closed and open questions. The series of questions with Likert-type responses enabled a clear understanding of any subjective differences on knowledge, confidence, and anxiety following on from the workshop. Additionally, the open questions within the questionnaire were able to capture more objective, qualitative changes in participant knowledge. Nevertheless, a shortcoming of this study design is that it is not able to determine whether the subjective and objective changes in knowledge, confidence, and anxiety following the workshop would translate into practice during mealtimes, which is arguably the final desire of training. The important question is whether this timescale for recall and the confidence gained translates to each participant’s everyday practice of feeding their child. In other words, for there to be any meaningful change of offering an experiential workshop, there should be a commensurate change in strategies used by the participants during mealtimes compared to the positive changes in knowledge and confidence reported. A follow-up workshop may be useful in this regard.

Nevertheless, the qualitative change in knowledge uncovered was commensurate with the positive change in the level confidence reported by the participants. A closer look at the change in knowledge suggests that the participants were better able to recall information regarding posture and positioning during mealtimes and the pace of offering food or drink compared to information on food textures and food modification. This was at variance with the findings by Chadwick et al (5) who found that adherence to recommendations on texture modification was much higher than to those on positioning, prompting or utensils.

Although Chadwick et al.’s (5) study was not on the effectiveness of a training workshop, presumably, the caregivers had to recall information given by the speech and language therapist similar to the participants in the current study. Difficulties with recalling advice on modifying textures was also discovered among caregivers of adults with learning difficulties in a later study by Chadwick and his colleagues (9), although the caregivers in that study had complained of difficulties with understanding and following a range of dysphagia-related speech and language therapy recommendations.

One possible explanation for the positive change in knowledge and confidence may be due to the workshop catering to different styles of learning incorporating a PowerPoint presentation with prompt questions, pictorial support, opportunities for role-play and experiential learning as well as time for questions and reflection. The transference of
information from short-term memory to long-term memory requires encoding of the information (18, 19). Gathercole and Baddeley (19) assert that present schemas should be stimulated prior to offering new information to support storage. This ‘top-down processing’ was encouraged within the workshop by posing questions at the start of the training. This was partly an attempt to encourage the participants to think of their own relationship with food and drink as well as their relevant concerns regarding feeding their child. This links in with using a training method that assists the application of learned information to real-life contexts.

The different teaching styles incorporated including the experiential component may have supported the organization of new, complex information in the short-term memory prior to transfer into long-term memory. This use of a combination of teaching styles to encourage ‘active’ learning within dysphagia training is in keeping with the recommendations of Miller and Krawczyk (12). It is also in-line with the ‘experiential learning cycle’ described by Kolb (13). That said, it is not possible to identify the impact of each of the different teaching styles used within the workshop on caregiver understanding and recall.

With regard to the nature of knowledge recalled, another plausible explanation for better recall of information concerning posture and positioning and the pace of offering food may be due to the experiential activities included in the workshop. Conversely, the different textures of food were remembered less well, probably as there was no opportunity to thicken liquids or trial different textured food except within a ‘feeding’ scenario, which was more concerned with pace of feeding than the texture of food offered. This may also be reflective of the participants holding onto new information they gathered on their main concern (i.e. positioning their child during mealtimes), in contrast to food modification, which was a minor worry. This is contrary to the findings by Chadwick et al. (5) who report better carer recall of strategies regarding consistency modification and use of utensils rather than on prompting support or social interaction at mealtimes.

Chadwick et al’s (5) findings gained further support from a subsequent study by the same authors (9), which indicated poorer recall of recommendations concerning prompting and socialization strategies compared to those connected to texture modification. The authors explain this finding as possibly due to the ‘concrete’ nature of the recommendations on texture modification and use of special equipment, as alteration of the consistency of food and drink occurs at every mealtime as part of a ‘preparatory phase’ and because the guidelines are typically demonstrated to the caregiver by a speech and language therapist. Given that the workshop did not include modeling of texture modification, it is conceivable that to some extent this contributed to the caregivers’ inability to recall information on this aspect.
Procedural knowledge such as the steps of texture modification may be better performed but less well articulated by caregivers (5). This highlights a limitation of the study as assessment of knowledge rather than observation of procedural understanding may be ineffective as a measure of the effectiveness of the workshop (5). The findings from the current study indicate that future workshops should incorporate demonstrations of procedures such as texture modification to support caregiver understanding and recall.

There is competing evidence on the association between caregiver knowledge and behavior, with Leiter and Windsor (16) finding better knowledge than compliance and Morch (14) reporting the reverse. Chadwick and his colleagues (9) found that staff could become ‘fixed’ in the routines established during mealtimes to the detriment of remembering and following speech and language therapy recommendations. As each participant and her child had been observed and individual strategies offered prior to the workshop, a follow-up study using an observational methodology would be useful to verify compliance with recommendations and with the knowledge gained through the workshop. Our current understanding of long-term memory suggests that retention and recall of knowledge is facilitated by opportunities for rehearsal. It may, therefore, also be of benefit to offer follow-up workshops to help consolidate learned information.

CONCLUSIONS

In conclusion, a lack of knowledge about feeding-related issues and limited confidence at feeding a child with cerebral palsy affected the mealtime experience of the Sri Lankan Tamil mothers included in this study. The findings of this small study support the use of experiential workshops to increase participant knowledge and confidence and to decrease anxiety. Experiential workshops help participants understand first-hand the reason for the advice given by healthcare professionals. The use of a combination of teaching styles could support the different learning styles of the participants and encourage better understanding and recall of information. Modelling of dysphagia strategies, opportunities for experiential learning and follow-up workshops have the potential to facilitate recall of learnt information. The observation of caregivers during mealtimes is necessary to evaluate whether the knowledge gained via the workshop results in any meaningful change in behaviour.
REFERENCES