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Impact of COVID-19 on clinical practice of UK-based Speech & Language Therapists working with school-aged children with neurodisability and oropharyngeal dysphagia:

A survey

Abstract

Background

The COVID-19 pandemic and response changed clinical service delivery and practice for Speech and Language Therapists (SLTs) in the United Kingdom (UK). SLTs work with children with neurodisability regarding both difficulties with their communication and eating and drinking skills (oropharyngeal dysphagia). This survey aimed to specifically explore the impact of the COVID-19 pandemic on SLT practice for school-aged children with dysphagia.

Methods

UK-based SLTs working with school-aged children with neurodisability and oropharyngeal dysphagia were recruited to share their perceptions on the impact of COVID-19 on practice. Four questions focusing on COVID-19 impact were part of a larger on-line survey exploring SLT clinical practice regarding mealtime management of children with neurodisability and oropharyngeal dysphagia, which included demographic information, service delivery, assessment and intervention practices. COVID-19 impact questions were a mixture of multiple choice and free text responses. The survey was disseminated using professional networks and social media, between 14th May-30th July 2021. Data was analysed using descriptive statistics and qualitative content analysis.

Results

102 participants answered at least one of the four COVID-19 questions. 82% of SLTs either agreed or strongly agreed that COVID-19 impacted on service delivery to children and families. Negative impacts on service delivery included school absences/closures, home visiting restrictions, families declining input and/or having barriers to telehealth use, and the impact of mask wearing on interactions. Positive impacts included increased telehealth access and skills, increased contact with families and focus on children's eating and drinking function within the home environment. Participants aimed to maintain the increased contact with families alongside a hybrid service delivery approach of in-person and virtual appointments.

Conclusions

This survey provides novel information capturing SLT practice change across two waves of COVID-19 and return to in-person practice for UK children with neurodisability.

Introduction

Children with neurodisability such as Cerebral Palsy, may experience difficulties with eating, drinking and swallowing saliva (known as oropharyngeal dysphagia). Oropharyngeal dysphagia affects the oral preparatory phase (sucking, chewing and preparing food/fluid bolus), oral phase (propelling the bolus to the back of the mouth) and/or pharyngeal phase of swallowing (moving the bolus safely through the pharynx into the oesophagus with adequate airway protection, without entry of food, fluid and/or saliva into the airway below the vocal folds, or 'aspiration')(1). In children, oropharyngeal dysphagia is often multifactorial and seen as part of ‘Paediatric Feeding Disorder’: defined as ‘impaired oral intake, which is not age appropriate, and is associated with medical, nutritional, feeding skill and/or psychosocial dysfunction’(2). Oropharyngeal dysphagia can have serious impacts on a child’s respiratory function and health, growth, development, relationships and quality of life, healthcare utilisation and for some, can result in premature death(3). Thus, identification, assessment, treatment and effective management of oropharyngeal dysphagia in children with neurodisability is essential.

Speech and Language Therapists (SLTs) are key health professionals who assess and treat children with neurodisability and oropharyngeal dysphagia. For school-aged children, services are typically delivered through schools, based in the community. Some school children also receive short-term hospital based SLT services: such as an acute hospital admission for respiratory illness(4), or for tertiary swallowing investigations such as a Videofluroscopic Swallow Study (VFSS). Community based SLTs typically assess and treat children in-person at school, with parental liaison occurring through in-school clinics or home visits. SLTs frequently provide a range of mealtime recommendations to improve safety, efficiency, and enjoyment of the meal(5) such as changing a child’s or the feeder’s posture/positioning, adjusting food/fluid textures or feeding pace.

The COVID-19 pandemic and government responses have impacted the clinical practice of health care professionals working with disabled children globally(6) . Governments implemented restrictions whereby many children did not access in-person education, and typical healthcare provision was reduced. Children with neurodisability, were considered a vulnerable group for infection, with many in the United Kingdom (UK) advised to restrict social contacts (‘shield’)(7). UK schools were closed during the first wave, March 2020-August 2020, and second wave, January 2021-April 2021. During periods when schools were teaching in-person there was additional guidance e.g., mask use, social distancing and ‘bubbles’ limiting social contact numbers. The Disabled Children’s Partnership completed several surveys exploring the impact on children and families. They found that not all disabled children returned to school (24%) between lockdowns(8) with continued shielding, as most children were not included in the UK vaccination scheme until July 2021. They also found reduced health service provision where 70% of parents reported their disabled child had no access to SLT in the 2021 lockdown(9).

The UK’s Royal College of Speech & Language Therapists (RCSLT) completed two surveys of its 19,000 members to explore the pandemic’s impact on SLT service delivery(10, 11). Participants reported that patients did not receive SLT services due to setting closures (33%), service approach changes (37%) and patient inability to access remote services e.g., teletherapy (21%). Globally, professionals and parents have reported reduced provision and access to in-person and remote SLT(12-14). However, the RCSLT surveys had only a small response number from SLTs working with children with dysphagia (n=47(10)) and their responses were not reported separately. Thus, a more in-depth exploration was needed of the impact and practice of SLTs working with children with neurodisability, including plans as the pandemic progressed. The current study was conducted as part of a larger survey investigating UK SLT practice when working with school-aged children with neurodisability and dysphagia.

This study aimed to explore the perspectives of UK SLTs working with school-aged children with neurodisability and oropharyngeal dysphagia who require mealtime assistance about:

i) negative and positive clinical practice changes due to the COVID-19 pandemic, and

ii) practice changes SLTs planned to maintain post-COVID.

Methods

Research Design

An anonymous national online survey of current UK-based SLT clinical practice for children with neurodisability, oropharyngeal dysphagia and mealtime management was developed utilising the literature and in consultation with the research team and a SLT stakeholder group. Ethical approval was granted by City, University of London's Language & Communication Science Proportionate Review Committee. Questions focussed on the following areas: participant demographic information, service delivery, assessment and intervention practices and four questions specifically exploring the impact of COVID-19.

Participants

The survey purposively sampled views from UK-based SLTs working in a variety of geographical locations and services e.g., public health services in the National Health Service (NHS) and independent (private) practice. Participants were invited to complete the survey if they met the following inclusion criteria:

- Health and Care Professions Council registered Speech & Language Therapist
- Minimum of 1 year UK-based clinical experience of working with school-aged children (Reception to year 13, aged 4 to 18 years) with neurodisability and oropharyngeal dysphagia who required mealtime assistance

Procedures

The online survey utilised the Qualtrics platform(15) and was shared via social media and relevant networks e.g., regional Paediatric Dysphagia Clinical Excellence Networks, RCSLT regional hubs. The data collection timeframe was 14th May-30th July 2021. Study information was included on the survey's initial page and all participants provided anonymous consent to participate and for their data to be published.

The COVID-19 specific questions are outlined in Table 1.

Table 1: Covid-19 specific questions

Question	Response method	Response options
1. Covid-19 has impacted my school-aged children's dysphagia management clinical practice	5 point Likert scale: one selection	Strongly agree
		Somewhat agree
		Neither agree or disagree
		Somewhat disagree
		Strongly disagree
2. What Covid-19 factors negatively impacted your delivery of school-aged children's dysphagia management?	Multiple choice: select all that apply	School absences due to closures, reduced offer of places
		Personal redeployment so not managing this caseload
		Redeployment of other colleagues so larger caseload
		Redeployment of other members of the multidisciplinary team
		Unable to visit child at home e.g., due to family shielding, social isolation of a family member etc.
		Impact of face coverings/masks on assessment
		Personal barriers in using telehealth e.g., lack of resources (IT equipment/smart phone, wifi and data), skills in IT
		Family barriers in using telehealth e.g., lack of resources (IT equipment/smart phone, wifi and data), skills in IT
		Family members contracted Covid-19, unwell and unable to attend appointments
		Family members declined input as reduced capacity while managing other priorities due to all children home from school
		Some children on caseload contracted Covid-19 and affected their eating, drinking and swallowing skills
		Other (please specify)
3. What Covid-19 factors positively impacted your delivery of school-aged children's dysphagia management?	Multiple choice: select all that apply	Increased personal access to telehealth as part of role to allow virtual home visits
		Increased access of families to telehealth resources
		Increased personal skills in telehealth
		Increased family-carer skills in telehealth
		Increased focus on home intervention as children at home, rather than school
		Other (please specify)
4. What learning or changes in clinical practice initiated by the response to Covid-19 are you likely to maintain?	Free text	

Analysis

Survey responses were downloaded from Qualtrics(15) into Excel for analysis. Response count questions were analysed with descriptive statistics (counts, percentages and endorsement frequencies across categories). Free text ‘other’ responses to questions 2 & 3 were reviewed and organised into groups for presentation as appropriate. Question 4’s free text responses (1 word – few lines of text) were imported into Word and analysed using conventional content analysis as described by Hsieh and Shannon(16) by two members of the research team (SM, KW). All responses were coded and then, through a process of review and reflection, overarching categories and subcategories were identified and defined through consensus. This qualitative analysis approach supported the presentation of quantitative data, numbers of participants fitting within a category.

Results:

Participants:

One hundred and two SLTs completed the survey and answered at least one of the COVID-19 questions. Participant characteristics are detailed in Table 2. Participants were predominately female, white British, and based in England. SLTs had a range of clinical experience, and were predominantly employed by the NHS. They mainly worked in school and home settings, with some providing acute hospital care.

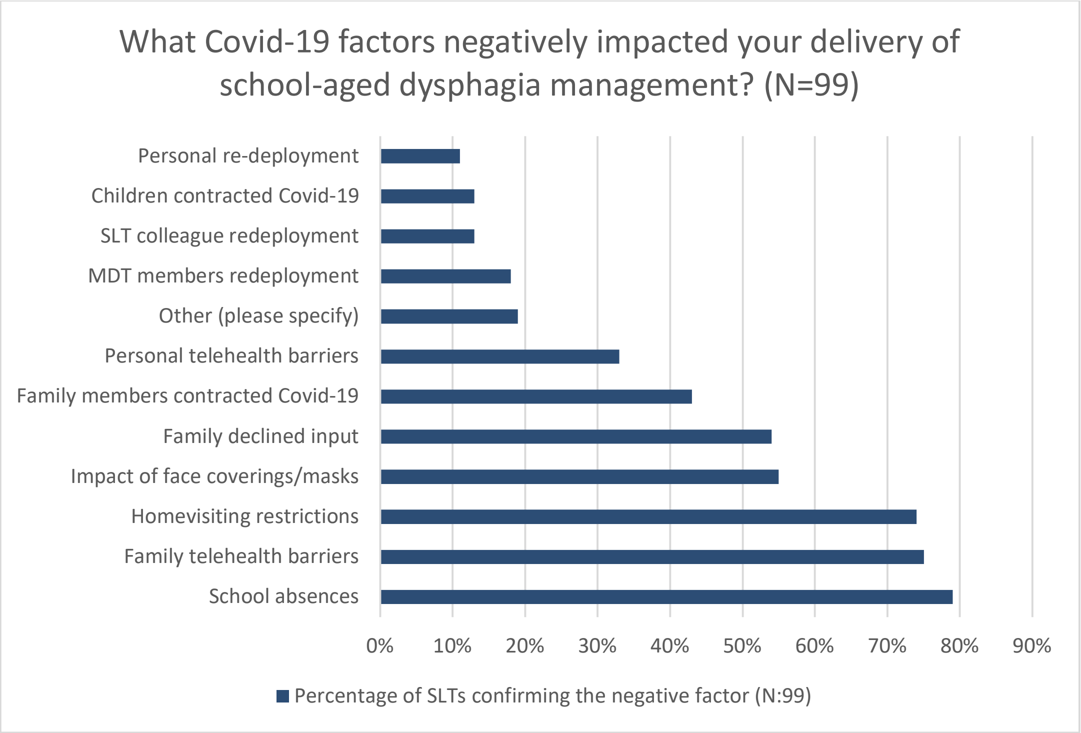
Table 2. Participant Demographics (n=102)

	Number	Percentage
Gender		
Male	1	1
Female	101	99
Non-binary/Prefer not to say	0	0
Ethnicity		
Ethnic minority	6	6
Prefer not to say	2	2
White other	23	23
White British	71	69
UK Country		
England (London)	85 (16)	83 (16)
Northern Ireland	4	4
Scotland	6	6
Wales	7	7
Clinical Experience		
1-2 years	8	8
3-5 years	11	11
6-10 years	24	24
11-15 years	19	19
16+ years	36	35
Employer		
Public sector: NHS	84	82
Public sector: School/Education	6	6
Independent practice	7	7
Independent: School/Education	1	1
Charity School/Education	2	2
Other	2	2
Current work settings (multiple selections)		
Acute hospital	27	26
Hospital Outpatients	25	25
Community Clinic	35	34
School	80	78
Home	85	83
Other	16	16

Note: UK=United Kingdom; NHS=National Health Service.

One hundred and one (99%) of SLTs answered Question 1. Eighty-three (82%) somewhat or strongly agreed that their practice has been impacted by COVID-19.

When asked about the COVID-19 factors that negatively impacted service delivery (Q2) the main issues identified from 99 participants included the following (figure 1). School absences/closures, inability to home visit, family barriers to using telehealth (n ≥72 (70%); and the impact of masks, or families declining input (n≥53 (50%) of participants). Twenty-one (29%) participants gave free text answers to 'other'. Some expanded on negative factors selected e.g. "I struggled to review a child who was very scared of masks". Others identified additional issues including reduced access into schools, reduced a contact numbers (episodes of care) allowed due to 'bubbles' within schools; reduced Personal Protective Equipment (PPE) access particularly in the independent sector; reduced or halted provision of instrumental swallowing assessments and reduced hospital visiting for parents.



Note: MDT=Multidisciplinary Team, SLT=Speech & Language Therapist

Figure 1: COVID-19 factors negatively impacting delivery of SLT services to school-aged children with dysphagia.

The majority answering Question 3 (n=91/97, 94%) agreed some positive practice changes had occurred. These SLTs reported increased personal telehealth access (n=75, 82%) and skill development (n=67, 74%). They also reported an increased focus on home intervention (n=58, 64%) with children not at school, alongside some improvements in family-carer telehealth access (n=56, 62%) and skills (n=54, 59%). Fifteen participants provided free text 'other' responses. Six reported no positive changes, sometimes stating this was related to minimal practice change in hospital settings. Those reporting positive changes described increased contact with family and a focus on the home, exploring the child's functional strengths and needs with a consistent home-based feeder, and regular home observations through videos.

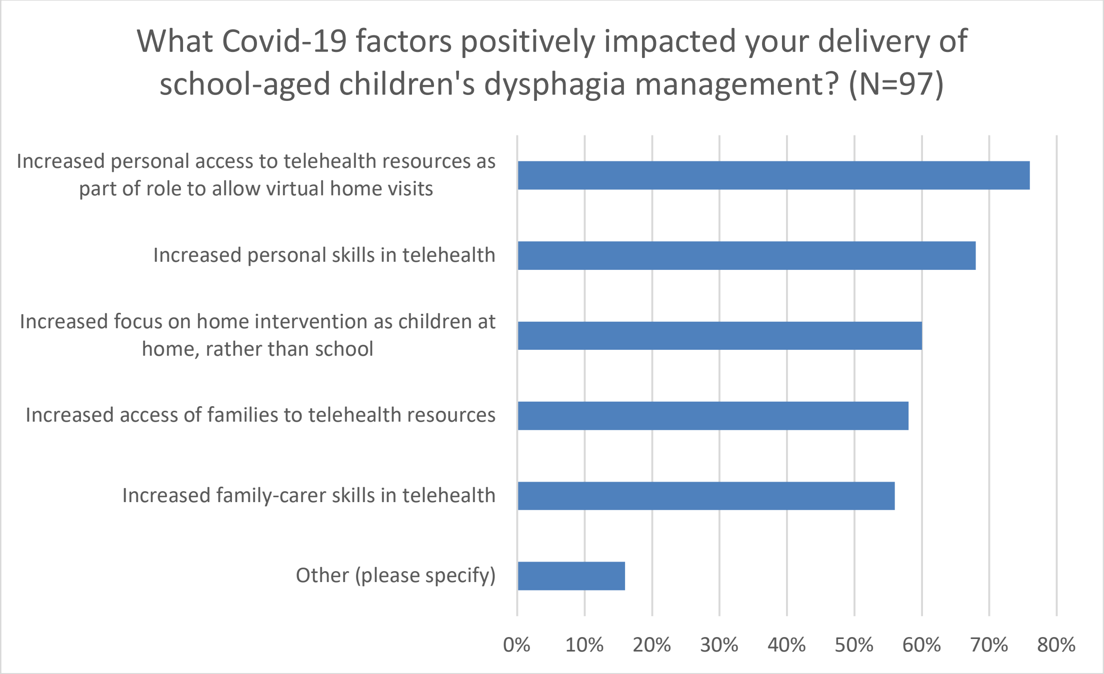


Figure 2: COVID-19 factors positively impacting delivery of SLT services to school-aged children with dysphagia.

Eighty-one (79%) participants gave free text responses to describe learning or changes in clinical practice they planned to maintain (Q4). Responses varied from single word answers to a few phrases or sentences. Most participants (n=79, 98%) intended to maintain positive learnings from the COVID-19 response whilst expressing an enthusiasm to return to in-person practice. The two main categories were identified for maintained change, both of which referred to adoption of telehealth, were 'hybrid services' and 'improved family contact'.

The category of 'hybrid services' encapsulated the idea of resuming in-person consultations/services whilst continuing remote contact when suitable described by the majority (n=74, 91%) (Table 3 [P33]).

These 'hybrid services' had a subcategory which described 'different hybrid approaches'. Participants discussed 'telehealth' with a broad definition utilising varied communication approaches incorporating a range of technologies including text, telephone, email, pre-recorded video sharing, and multiple video platforms such as Attend Anywhere, MS Teams, WhatsApp, and Zoom (Table 3 [P28])

Many practices suitable for virtual delivery were suggested: gathering case history information, providing advice/reviews, team meetings and training (n=26, 29%). Some suggested another dimension to 'Hybrid services' with a partial remote appointment, followed by in-person (Table 3 [P60]). The other subcategory was 'in-person preferred for some activities' with certain practices considered essential to be delivered in-person such as child observational assessment, (n=3, 4%) (Table 3 [P85]).

The second category was 'Improved family contact' where participants found school-closures and subsequent telehealth adoption had facilitated greater communication with families about their child's functioning at home to inform management plans and progress. This was evident in two sub-categories with 'more awareness of child's home functioning' providing a more holistic view, and 'increased family contact' (Table 3 [P43], P[18]) as families were based at home and had more regular communication with the participants. These positives led to many suggesting this outcome should not be lost (Table 3 [P18, P90].

A small number of responses did not fit easily within these two categories. These were either responses related to infection control changes for in-person services e.g., continued mask and protective equipment use (n=2, 2%) or when participants (n=2, 2%) were unsure regarding future changes e.g. "Don't know" [P94].

Table 3: Categories and subcategories with illustrative quotes

Hybrid Services	**Improved family contact**
Different hybrid approaches	***More awareness of child's home functioning***
"Mixture of virtual and face to face appointments [P33]	"Families send video clips…which has allowed for more frequent updating and capturing of what families want us to see which we often don't"[P43]
"..continue a blended service of telehealth, use of whatsapp for parents to share video, delivery of information and training via Teams as well as face to face" [P28]	
In-person preferred for some activities	***Increased family contact***
"..initial telephone consultation to gain case history information with focus on assessment at face to face consultation"[P60]	"Maintaining both home and school connections rather than relying on mostly school-based observations." [P18]
"To be sure to see the child, can't get an overview on zoom" [P85]	"..continued with phone reviews…. to maintain the contact with parents/carers…. since school has resumed" [P90]

Key P: Participant

Discussion:

This survey aimed to explore the impact of the COVID-19 pandemic from March 2020 to May 2021 on UK SLTs' practice when working with school-aged children with neurodisability and oropharyngeal dysphagia. Clinical practice had been impacted for the majority of SLTs in both negative and positive ways. A range of practice changes related to 'hybrid' services were suggested to continue, offering improved holistic care for these children. Malandraki et al.(17) found limited focus on paediatric dysphagia and telehealth during COVID-19 in their literature review of dysphagia services across the lifespan. Our survey provides important novel findings around this issue.

In any survey of practice, it is important to determine the participant representativeness. Our survey's recruitment strategy prevents a response rate calculation however participant numbers are favourable when compared to other recent UK surveys: 47 during April 2020(10), 122 during October 2021(11) and 131 in 2018(18) - particularly as these other surveys were for SLTs working with diverse populations, including a wider age range. It is likely our sample was representative of the target population given that participants were from across the UK with all RCSLT hub regions represented, and it reflects geographic distribution of previous UK surveys(11). London was most highly represented as might be expected given the population and high number of specialist paediatric hospitals in this region. Participants were employed by a range of employers, but predominately NHS providers, as is typical for dysphagia practice. It is rare for UK independent practices to cater for children with dysphagia. Participants often worked across multiple settings, predominantly school and home. Our sample had limited diversity, with only one participant identifying as male, and 8 as being part of a UK ethnic minority group or 'prefer not to say'. Speech & Language Therapy is a white female dominated profession in the UK, however there are no accurate figures to determine whether this is an underrepresentation of SLT professionals working with school-aged children with neurodisability and oropharyngeal dysphagia.

A range of positive service impacts from the pandemic response were highlighted. Participants acknowledged improved telehealth access and skills for both themselves and families they served, with an increased focus on home intervention. For families who were able to use telehealth, the increased links between SLTs and parents were seen as a strong positive compared to typical school-based practice where family contact was limited. The RCSLT(10, 11) likewise found school closures and the move to telehealth had some positive impacts, including greater contact with parents, and reflects findings in other UK paediatric services(11) and SLT services overseas(13, 19). It should be noted that not all our participants reported their telehealth access and skills improved, though more than the wider RCSLT member survey (54% increase in skills)(10). In both the RCSLT and our survey some participants worked exclusively for in-person acute services and so potentially telehealth skill development was less required.

More broadly over the pandemic, there has been wide variation in paediatric community services telehealth utilisation due to both local service variation of response alongside aspects related to individual access, including digital poverty. Alsem et al(6) found during the Netherlands' first pandemic wave, only some rehabilitation centres moved quickly to video consultations while others did not. Various studies indicate large numbers of families did not access SLT during lockdowns (25-70%)(9, 12, 14), although it is not always clear whether it was in-person and/or remote intervention that were lacking. Many, as in our study, have highlighted digital poverty for patients(6), with some families only accessible by telephone(10, 11). A multi-strand approach to tackling this issue is needed. This could include social prescribing where health care professionals prescribe devices, wifi data packages and training alongside partnerships with education, social care and charities(20).

One factor not raised within the RCSLT surveys(10, 11) was the impact of mask use on interactions, potentially due to a focus on member safety and mask use benefits for infection control, rather than any impact on communication. However, mask use is reported as impacting in-person communication within the neonatal SLT community, some of which will have completed this survey(21). This survey also captured some additional difficulties related to children returning to school, such as schools declining access or limiting visits for SLTs and other health professionals. A similar difficulty was experienced for in-person acute care children's services, with hospital mandates around parental or other visitor limits. This initial difficulty when schools reopened led to statements regarding the importance of therapy for children with an aim to improve children's access to all services alongside education(22). Interestingly, in contrast to suggestions that disabled children's skills regressed during lockdowns(9, 14), there is some evidence that feeding(14) and respiratory health(23, 24) were better during this period, potentially due to social distancing and consistent home feeding practice.

Finally, most participants identified practice changes from the pandemic they wished to maintain as in-person services resumed. SLTs described aims to continue their improved accessibility and contact with families and the home. This is positive as even on school days most children's meals are taken at home. Participants described a blended/hybrid service suggesting some activities were best completed in-person e.g., direct assessment, with a recent US survey(25) also identifying that eating and drinking are more difficult to assess remotely than other domains SLTs assess (e.g. communication). Across the world, matching our findings, there is a suggestion that remote services will remain(13, 25) with the reported benefits of hybrid services emerging(26).

Strengths and limitations

The limited available data on the characteristics of the UK SLT population in general and those working with school aged children with neurodisability and oropharyngeal dysphagia means the response rate and sample representativeness are unclear. However, as discussed above, our results look favourable when compared with others targeting similar populations. The range of demographic characteristics collected, and limited diversity shown highlight the importance of considering these factors when interpreting our findings.

As in all surveys, the survey's structure and some of the questions may have affected the results. In addition, the free text responses were varied in length and depth. Some participants purely reported 'telehealth' as a practice change to maintain while others highlighted a nuanced understanding of what 'telehealth' was.

This study was well timed to explore the perceptions of practice change as the UK emerged into reduced restrictions following the initial pandemic response. The survey design allowed a larger number of participants to be reached, important when considering a national picture, compared to focus groups or in-depth interviews. Although a nuanced understanding of telehealth was not established from all participants, this complexity did demonstrate itself across the sample.

Clinical implications & further research

This study provides a useful description of service change at a time of rapid transition. It is important to note both negative and positive impacts of the pandemic on practice and long-term changes emerging e.g., impact of masks on in-person interactions(21) and a desire to retain improved connection with families while in school-based services. To be successful in this new hybrid method of working, SLTs and families may need training to maintain newly developed telehealth skills, and additional support potentially for those who did not access these developments. Additionally, training in telehealth would be important for SLTs in their university/professional training, and what aspects of dysphagia management for children with neurodisability may be best provided in-person versus remote via telehealth, telephone or other formats. Furthermore, whilst this study explored the SLTs' perspectives, further research is needed into how these practice changes affected the children and families, including ways to ensure all families gain access and benefit from this new hybrid approach.

Key messages:

1. The majority of UK SLTs working with children with school-aged children with neurodisability and dysphagia reported that the COVID-19 pandemic impacted service delivery to children and families.
2. Negative impacts on service delivery included school absences/closures, home visiting restrictions, families declining input and/or having barriers to telehealth use, and the impact of mask wearing on in-person interactions.
3. However positive impacts were also in evidence including increased telehealth access and skills, increased contact with families and focus on children's eating and drinking function within the home environment.
4. UK SLTs aim to maintain the increased contact with families utilising a hybrid service delivery approach of in-person and virtual appointments.

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