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RESEARCH REPORT

UK speech and language therapists' assessment of children's expressive language, and functional impairment and impact, following the CATALISE publications

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Abstract

Background: In 2016/17, the CATALISE Consortium published the results of a multinational and multidisciplinary Delphi consensus study, representing agreement among professionals about the definition and process of identification of children with Developmental Language Disorder (DLD) (Bishop et al., 2016, 2017). The extent to which the current clinical practice of UK speech and language therapists (SLTs) reflects the CATALISE consensus statements is unknown.

Aims: To investigate how UK SLTs' expressive language assessment practices reflect the CATALISE documents' emphasis on the functional impairment and impact caused by DLD, by examining: whether multiple sources of assessment information are gathered; how standardised and non-standardised sources are combined in clinical decision-making, and how clinical observation and language sample analysis are utilised.

Methods and Procedures: An anonymous, online survey was carried out between August 2019 and January 2020. It was open to UK-based paediatric SLTs who assess children up to age 12 with unexplained difficulties using language. Questions probed different aspects of expressive language assessment which are referred to in the CATALISE consensus statements and supplementary comments, and asked about participants' familiarity with the CATALISE statements. Responses were analysed using simple descriptive statistics and content analysis.

Outcomes and Results: The questionnaire was completed by 104 participants, from all four regions of the United Kingdom, working in a range of clinical settings with different levels of professional experience of DLD. The findings indicate that clinical assessment practices broadly align with the CATALISE statements. Although clinicians carry out standardised assessments more frequently than other types of assessment, they also gather information from other

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sources and use this alongside standardised test scores to inform clinical decisions. Clinical observation and language sample analysis are commonly utilised to evaluate functional impairment and impact, along with parent/carer/teacher and child report. However, asking about the child's own perspective could be more widely utilised. The findings also highlight a lack of familiarity with the details of the CATALISE documents among two thirds of the participants.

Conclusions and Implications: Assessment practices broadly align with the CATALISE statements, but there is a need for greater clarity regarding terminology and the assessment of functional language impairment and impact. This research should prompt discussion in the profession about how to further develop and adopt expressive language assessment practices which reflect the CATALISE consensus and support effective assessment.

KEYWORDS
assessment, CATALISE, expressive, functional, language, survey

What This Paper Adds

What is already known on the subject

- The CATALISE consortium documents on Developmental Language Disorder (DLD) were published in 2016/17. The extent to which expressive language assessment practice in the United Kingdom reflects the new definition and statements on assessment has not previously been investigated.

What this paper adds to existing knowledge

- This survey indicates that speech and language therapists in the United Kingdom assessing children for DLD mostly balance standardised language test scores with other sources of information in clinical decision-making, and utilise clinical observation and language sample analysis to consider functional impairment and the impact of the language disorder. However, important questions are raised regarding the robustness and objectivity with which these key parameters are currently defined and evaluated.

What are the potential or actual clinical implications of this work?

- Clinicians, individually and at service level, are encouraged to reflect on their assessment of functional impairment and the impact of language disorder and to take steps to incorporate this where necessary. Professional guidance and clinical tools to facilitate robust, objective assessment would support clinical practice that aligns with expert consensus.

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INTRODUCTION

CATALISE's definition of DLD

The field of children's language disorders has been much debated and has undergone significant changes in the last decade. A special edition of the *International Journal of Language & Communication Disorders* in July–August 2014 focused on specific language impairment (SLI). Articles and commentaries highlighted the detrimental effects of inconsistencies in the use of terminology and diagnostic criteria for children with unexplained language difficulties and moved the debate forward by bringing together experts from different countries, perspectives and professions (summarised in the editorial, Ebbels, 2014). In conclusion, the authors of the main articles agreed that an international multidisciplinary forum was needed to reach a consensus on the matters of diagnostic criteria and terminology for children with language learning impairments (Reilly et al., 2014).

The result was the CATALISE Consortium, an expert panel from English-speaking countries around the world, representing a variety of stakeholders. Using the Delphi technique to build consensus, they reached high levels of agreement about statements describing the identification of children with language impairments (Bishop et al., 2016) and what terminology to use (Bishop et al., 2017).

The first phase of CATALISE tackled the issue of how to identify children who would benefit from specialist speech and language services. The second phase of CATALISE considered terminology and definitions. Statement 2 expressed the agreement among panel members that "the term 'language disorder' is proposed for children who are likely to have language problems enduring into middle childhood and beyond, with a significant impact on everyday social interactions or educational progress" (Bishop et al., 2017, p. 1070). Statement 7 specified "the term Developmental Language Disorder (DLD) is proposed to refer to cases of language disorder with no known differentiating condition" (Bishop et al., 2017, p. 1071). The uptake of this terminology to replace 'specific language impairment' has been widespread in the clinical practice of speech and language therapists (SLTs) in the United Kingdom and around the English-speaking world (RCSLT, 2020).

The CATALISE Consortium's definition of DLD is broader than the definition of SLI, with the removal of several exclusionary criteria that were not supported by research evidence, including the mismatch between verbal and non-verbal abilities and the stipulation of language scores below a given range on standardised assessments. Rather, as the CATALISE Phase 2 abstract outlines, the new definition refers to a profile of difficulties that causes 'functional impairment in everyday life'. Consequently, assessment practices to identify children with DLD should reflect this broader definition, moving away from a largely statistical cutoff approach to the identification of SLI, to one in which measures of language ability in everyday situations and the impact of language difficulties on children's lives, are central. This shift in conceptualisation clearly has implications for clinical assessment practices.

Functional impairment and impact

Although the CATALISE documents use the terminology of 'functional impairment' and 'functional impact' (e.g., statements 10 and 11, with supplementary comments, Bishop et al., 2016, p. 11), they do not define these terms. Interpreting them in the wider context of the CATALISE documents, the modifier 'functional' is frequently seen in the context of relating to everyday communication. The World Health Organization's International Classification of Functioning, Disability and Health for Children and Youth model (WHO, 2007) has been used in the current paper to guide the interpretation of the concepts of 'impairment' and 'impact'. 'Impairments' are defined by WHO as problems with body function, such as significant deviation or loss, so functional language impairment could be interpreted as problems with language that are evident in everyday communicative situations. 'Impact' is taken to relate to the WHO's concepts of 'activity limitations' (difficulties in executing activities) and 'participation restrictions' (problems experienced in involvement in life situations), again in the context of 'functional', real-life situations. Although there have been differing interpretations of how to apply the WHO's model to speech, language and communication disorders (Mcleod and Threats, 2008; Westby & Washington, 2017; Barnes and Bloch, 2019), this familiar point of reference can usefully serve as a guide.

CATALISE and clinical practice

In order to determine how clinical practice aligns with the CATALISE expert clinical consensus, it is necessary to understand how SLTs/pathologists currently assess children's language. Several papers investigating aspects of SLTs' language assessment practices have recently been published. Fulcher-Rood et al. (Fulcher-Rood et al., 2018, 2019) gathered information from school-based SLTs in the United States about their diagnostic decision-making when language impairment is suspected. They investigated the use of standardised tests and 'informal measures', a term which they used to cover parent/teacher interviews

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and language sampling. They concluded that standardised testing had the greatest influence on diagnostic decision-making in this population, perhaps because of institutional policies. Australian SLTs have also recently been surveyed about their use of different types of language assessment with elementary school-aged children (Denman et al., 2021). Using the terminology presented in a taxonomy previously published (Denman et al., 2019), the results showed that SLTs most regularly used assessments that are norm referenced, decontextualised and conducted in a clinical context. By definition, these are conducted in contexts that do not reflect the child's day-to-day communicative life, although they could be used to infer how the child might use language in everyday situations. Surveys of language assessment practices of United Kingdom SLTs have not been published since the CATALISE documents were produced. However, in 2015, a wide-ranging study by Roulstone et al. included the identification of assessment tools used by SLTs in the United Kingdom who worked with preschool children with primary speech and language impairments; only 28% of the SLTs surveyed reported using 'informal methods' (which included parent report and language sampling in context) to supplement the information gathered from 'formal' (published) assessments (Roulstone et al., 2015, p. 180).

Together, the studies illustrate the degree to which SLTs continue to rely on assessments which do not provide a representative measure of the language impairments affecting children's everyday communicative interactions. This is a point for reflection, in the light of the CATALISE definitions. CATALISE (Bishop et al., 2016, p. 11) agreed that multiple sources of assessment information should be combined, and the documents refer to several important sources, including standardised age-normed and non-standardised, dynamic and criterion-referenced assessments, interview and questionnaires, parent/carer and child report and clinical observation. If SLTs do not combine the results of standardised and non-standardised assessments, or fail to balance these sources of information or do not evaluate functional impairment and impact, the children CATALISE identifies as requiring specialist input may not receive the support they need. There would be an increased risk of misdiagnosis and misdirection of resources.

Assessing functional impairment and impact

The CATALISE documents acknowledge that the implications of the new definition of DLD pose practical questions about diagnostic assessment—"the main challenge facing those attempting to use the concept of language disorder that we advocate is that there are few valid assessments of functional language…" (Bishop et al., 2017, p. 1076). In a supplementary comment on establishing levels of functional impairment, the FOCUS (Thomas-Stonell et al., 2010) is referred to as one method of systematic evaluation. This assessment evaluates communicative participation—aligning to the WHO framework—but is designed as a measure of change rather than a diagnostic test. The use of an assessment of participation to establish levels of functional impairment (rather than impact) also highlights the lack of clarity over what these terms mean, what clinicians should be measuring and how to do this.

The new definition of DLD directs us to the language skills used in everyday interactions. Roulstone et al.'s (2015: 183) research indicates that 'observation' is a method used by UK therapists for gathering information about children's 'functional communication'. Clinical observation is also referred to in the CATALISE statements as an important source of information. The type of information gathered during clinical observation is explored by a questionnaire item reported here. Questions also cover whether participants ask for the child's view of their communication and other sources of information about functional impact.

Language sample analysis (LSA) is one ecologically valid approach available to SLTs for assessing naturalistic language (Westerveld, 2019) and as such, can be a useful approach for assessing language impairments that are evident in everyday interactions, 'functional impairments'. LSA covers a variety of practices, which may be standardised or non-standardised, and more or less naturalistic depending on the sampling context. Samples can be analysed at different levels (lexical, grammatical, discourse, etc.) for composite measures (e.g., mean length of utterance) or the linguistic structures they display (e.g., morpho-syntactic profiles). Surveys of clinicians' use of LSA have been done in the last decade in the United States (Pavelko et al., 2016), Australia (Westerveld & Claessen, 2014), and the Netherlands (Klatte et al., 2022). Results from all these studies confirm long-standing concerns identified 20 years earlier (Kemp & Klee, 1997), that routine, robustly analysed collection of meaningfully complex language samples is not as widely utilised as it could be.

Terminology

These studies used different terminology to gather information about assessment practices. A lack of consistency and shared understanding leads to poor clarity when considering this aspect of clinical practice, which is highlighted and addressed by Denman et al.'s (2019) taxonomy. The survey reported here used the terms 'formal/published

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assessments' and 'informal assessments' contrastively, implying informal assessments are not openly available through publication, whereas formal/published assessments have set guidelines for administration. However, there are problems arising from ambiguities in terminology. These are considered in the discussion.

Scope of this survey and research questions

This paper addresses gaps in knowledge regarding the current state of SLTs' language assessment practices in the United Kingdom in the light of the CATALISE recommendations. When considering the 'functional' language used in everyday interactions, there are established approaches such as LSA that can be used to evaluate expressive language. For areas such as morphosyntax (e.g., verb tense inflections, use of auxiliary verbs), analysis of spontaneous expressive language can provide a measure of a child's developing language system in everyday situations, where comprehension of these features of language would be harder to determine. The research reported in this paper is focussed only on functional aspects of expressive language assessment and is part of a larger study looking more widely at expressive language assessment practices. The data presented here relate to the assessment of functional impairment and impact, addressing the following questions:

To what extent do the current expressive language assessment practices of SLTs in the United Kingdom align with the CATALISE definition of DLD and consensus on principles of identification? In particular,

- are multiple sources of information combined in assessment?

- how are standardised and non-standardised sources of information balanced in clinical decision-making?

- how do SLTs utilise assessment approaches such as clinical observation and language sample analysis, which facilitate the evaluation of functional impairment and impact?

- how familiar with the CATALISE statements on assessment are UK SLTs who assess children for DLD?

This paper aims to provide a basis for professional reflection about how children's language should be assessed in the context of the CATALISE consensus. In areas where current practice does not align with CATALISE, further discussion and development will be required to support clinicians to incorporate this expert clinical consensus into their evidence-based practice.

The CATALISE statements relating to language assessment (numbers 10–17 and 19–20 of the first publication) outline general principles, with statement 18 specifically focussing on assessment of children with English as an additional language (EAL). The principles of interest in this paper (combining multiple sources of information and considering functional impairment and impact) are equally applicable to mono- and multilingual language assessment, so this survey did not exclude SLT assessment for children with EAL. Since the statements relate to the identification of children who would benefit from specialist input, which typically occurs in early to middle childhood, it is the assessment of children up to the age of 12 that is considered.

METHODS

The survey is reported here, guided by CHERRIES (Checklist for Reporting Results of Internet E-Surveys; Eysenbach, 2004).

Development of the questionnaire

Questionnaire items were drafted to gather demographic data about the participants, to determine whether the sample of respondents was representative of the wider population of UK paediatric SLTs who assess children's language.

Further questions were designed to gather detailed information about SLTs' assessment practices. These included the questionnaire items presented here, formulated in response to the new definition of DLD and consensus statements related to the research questions and worded to reflect the CATALISE statements. Table 1 shows these items in relation to the statements they probe, along with excerpts from relevant supplementary comments.

The questionnaire was piloted by circulating draft questionnaire items, and an online draft, to five SLTs with research experience and was then refined in response to feedback. The research was granted ethical approval by Plymouth Marjon University Ethics Committee and was carried out in accordance with the university's ethics policy.

Questionnaire

The final, anonymous, questionnaire consisted of 30 questions, and took 15–20 min to complete. It included a mixture of free text, single- and multiple-answer multiple choice formats (including Likert scales). Other than providing consent, questions were not obligatory, to balance quality of data with time efficiency. A copy of the questionnaire is available as Supplementary Materials 1. Not all the data collected are reported in this paper; only

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TABLE 1 Questionnaire items, with the CATALISE statements and relevant excerpts from the supplementary comments that they probe. (Items are spatially arranged according to the statements they relate to, but are discussed thematically in the text)

CATALISE statement 10 (Bishop *et al.*, 2016, p. 11):

"Multiple sources of information should be combined in assessment, including interview/questionnaires with parent or caregivers, direct observation of the child, and standardized age-normed tests or criterion-based assessments."

Statement 2 from Phase 2 of CATALISE (Bishop *et al.*, 2017):

"The term "language disorder" is proposed for children who are likely to have language problems enduring into middle childhood and beyond, with a **significant impact on everyday social interactions** or educational progress."

Questionnaire item 19:
During assessment for DLD, how often do you use:

- o Standardized assessments? (which are administered and scored in a consistent 'standard' way to allow scores to be compared, often against normative data)
- o Criterion-referenced assessments? (which measure skills against a fixed set of predetermined criteria)
- o Dynamic assessments? (which identify learning potential as well as skills during the assessment process)
- o Interview/questionnaire assessments?
- *Single-answer multiple choice options for each type of assessment: Always/frequently/occasionally/never*

Supplementary comment to statement 17 (Bishop *et al.*, 2016, p. 13):

"An assessment that uses a test, teach, and retest approach can be helpful for indicating whether the child is ready for this level of language modification and for identifying intervention targets. Dynamic assessment embodies such ideas…"

Questionnaire item 9:
How would you describe what you are looking for when you 'observe' a child's expressive language skills?

- *Free text response*

Supplementary comment to statement 10 (Bishop *et al.*, 2016, p. 11):

"Clinical observation gives an indication of how the child functions in a more naturalistic setting, but reliability of observations can be hard to establish, and interpretation depends heavily on the experience of the clinician."

Questionnaire items 22, 23, 24, 25, 26, 27:
How often do you collect naturalistic language samples (connected spoken language samples that are not produced as part of a standardized assessment)?

- *Single-answer multiple choice options: Always/frequently/occasionally/never*

If you have taken naturalistic language samples, typically how many utterances did the sample contain?

- *Single-answer multiple choice options: 1-10 / 11-20 / 21-50 / 51-100 / 100+*

Did you:

- o Record the sample?
- o Transcribe the sample in real time?
- o Use utterances produced during general activities?
- o Deliberately elicit a language sample using a specific activity?
- *Single-answer multiple choice options for each subquestion: Yes / No*
- *Free text response box to give details*

Did you analyse the sample using a particular method?

- o Yes (please state the method e.g., MLU, LARSP, Brown's stages, SALT software etc)
- o No (please state what features of the language sample you looked or how you analysed it)
- *Free text response box to give details*

What deters you from using more naturalistic language samples in your clinical practice? (Please tick all that apply)

- o Information has already been gained from other assessments / Too time consuming / No recording equipment available / Lack of confidence in analysing samples / I am not deterred! / Other (please specify)
- *Multiple-answer multiple choice options, with free text response box to specify 'Other' factors*

Supplementary comment to statement 10 (Bishop *et al.*, 2016, p. 11):

"Methods have been developed for standardized collection and computer-aided analysis of naturalistic language samples, which can then be evaluated against normative data, to give estimates of both grammatical and vocabulary development."

(Continues)

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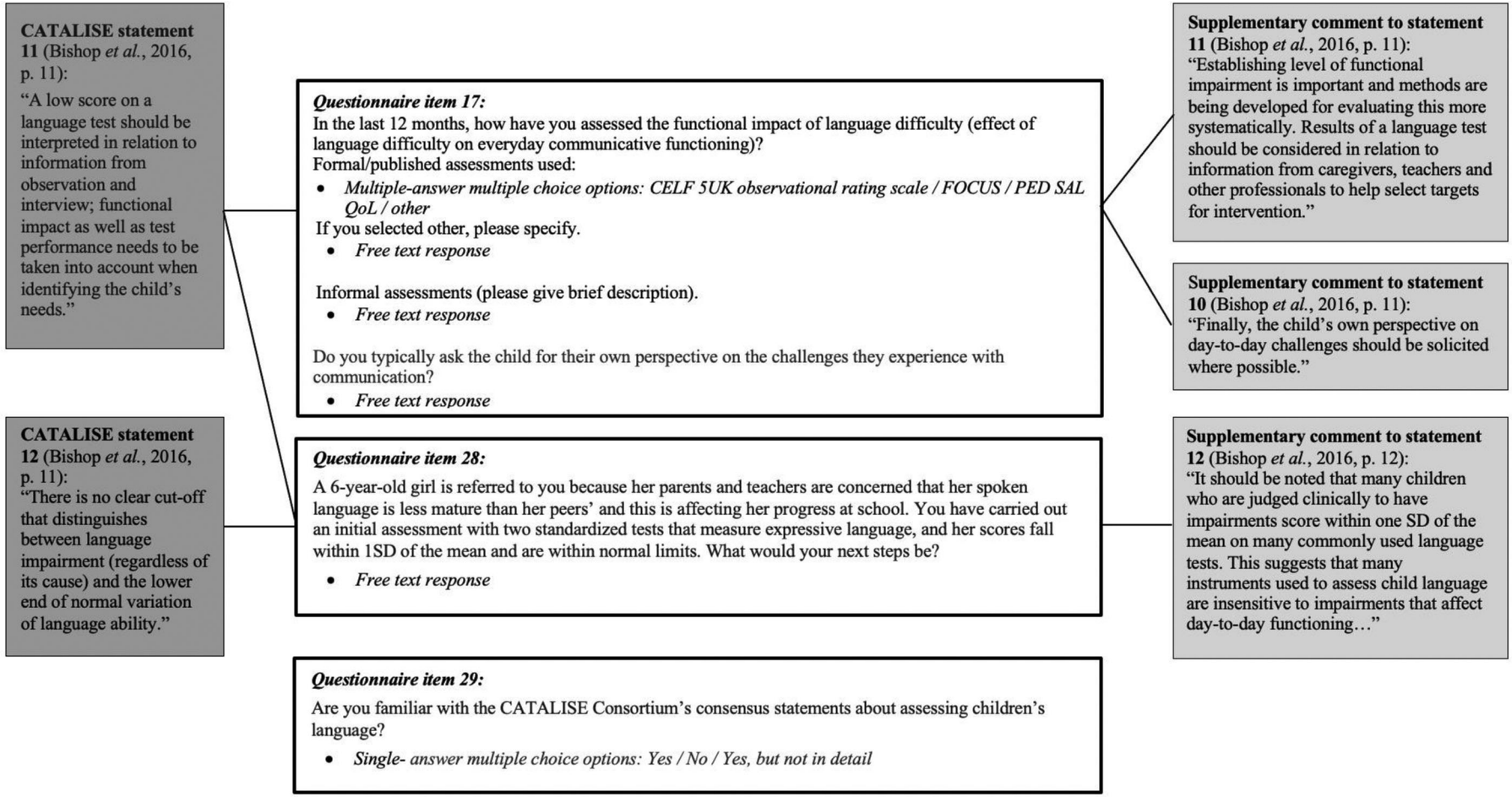
TABLE 1 (Continued)



Abbreviations: CELF 5UK, Clinical Evaluation of Language Fundamentals Fifth Edition; LARSP, Language Assessment, Remediation and Screening Procedure; MLU, mean length of utterance; PED SAL QoL, Paedriatric Speech and Language Quality of Life, quality of life

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the relevant demographic data and data from questions 9, 17, 19, 22, and 24–29, which address the research questions outlined previously.

Procedure

Participants were recruited using several strategies. The Royal College of Speech and Language Therapists (RCSLT) aided dissemination via their Research Newsletter and Twitter account, and a poster presentation of preliminary results at the RCSLT conference in September 2019. Invitation emails were sent to the College's relevant Clinical Excellence Networks and to the National Association of Professionals concerned with Language Impairment in Children (NAPLIC) and the Association of Speech and Language Therapists in Independent Practice (ASLTIP). Emails were also sent to paediatric SLT services with email addresses in the public domain and personal SLT contacts, who may then have disseminated the link to other contacts. It was also publicised on Twitter.

The survey was hosted online using software from Jisc Online Surveys. It was open from August 2019 until January 2020. Participant information at the start of the questionnaire included information on the process of consent and asked respondents to confirm that they were qualified SLTs, working in the United Kingdom, with a current caseload including the assessment of children up to the age of 12 with unexplained difficulties using language in everyday situations.

Data analysis

The survey generated predominantly quantitative data; however, qualitative data were also obtained through open-ended questions which expanded on some points. The quantitative data were analysed with simple descriptive statistics, using Microsoft Excel.

Content analysis as described by Bengtsson (2016) was selected as a suitable method for identifying, analysing and quantifying patterns in the survey data, in order to make "replicable and valid inferences from texts… to the contexts of their use" (Krippendorff, 2004: 18). Through a process of reflexive manifest analysis, codes created inductively from the short answers were categorised and have been reported. Some data were also quantified, and in some areas, a latent analysis to identify themes was completed in order to interpret the underlying meaning of the participants' responses. For the purpose of triangulation and to increase validity, the first and second authors both reviewed the raw qualitative data and discussed codes, categories and themes.

RESULTS

Participants

A total of 107 responses were submitted. However, three were entirely blank and therefore excluded. 104 participants submitted complete or near-complete responses. All consented to take part and confirmed they were qualified SLTs working in the United Kingdom, with a caseload which included the assessment of children up to 12 years with unexplained language difficulties. Thirty-nine participants' responses had missing data, that is, did not respond to a question where a response was expected (37 with two or fewer missing datapoints and two with four missing datapoints for the data reported here). The proportion of missing data for the whole survey was 2.8%, and for the items presented here, 2.0%. Missing data have been excluded from analysis. Table 2 shows that most participants came from England and were employed in the public sector, although clinicians working in private practice and from Scotland, Northern Ireland and Wales were also represented. Almost one third of participants considered themselves to be specialists in DLD. Most worked across multiple settings and almost all the participants had school-aged children included in their caseload. The average number of years in clinical practice (rounded, where necessary, to the nearest 6 months) was 14 years.

Sources of information used in the assessment process

To determine if multiple sources of assessment information are gathered, participants were asked how often they use standardised, criterion-referenced, dynamic and interview/questionnaire assessments during assessment for DLD, reflecting the multiple sources referred to in CATALISE statement 10. The responses are represented in Figure 1, with numbers of participants completing each part of the question.

Ninety-four percent of participants (n = 97, 97/103) reported always or frequently using standardised tests in the assessment of DLD. Fifty-three percent (n = 53, 53/100) reported always or frequently using criterion-referenced assessments; 63% (n = 64, 64/102) always or frequently used dynamic assessments and 44% (n = 45, 45/103) always or frequently utilised interview or questionnaire assessments.

Clinical observation

To investigate how clinicians use clinical observation to evaluate language skills, participants were asked, 'How

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TABLE 2 Demographic characteristics of survey participants

Geographic region:							
England 88 (84%)		Northern Ireland 10 (10%)		Scotland 4 (4%)		Wales 2 (2%)	
Sector worked in:							
Public sector only *(NHS or not-for-profit organizations providing core NHS services)* 90 (86%)		Private sector only 9 (9%)		Both public & private sectors 2 (2%)		Not specified 3 (3%)	
Specialty areas:							
No specialty 39 (38%)	DLD 32 (31%)	Speech Sound Disorders 14 (13%)	Autistic Spectrum Conditions 10 (10%)	Dysfluency 6 (6%)	Complex needs 6 (6%)	Hearing Impairment 3 (3%)	Not specified 13 (13%)
(1-2 participants reported specialising in each of the following areas: social, emotional and mental health; selective mutism; bilingualism; cleft lip & palate; neurodisability; and dysphagia)							
Age of children on caseload (divided into 3 age bands):							
0-4 years 67 (64%)		5-7 years 96 (92%)		8-11 years 92 (88%)			
Location of service delivery:							
Specialist provisions for children with SLCN (either exclusively or in addition to other settings) 17 (16%)		Across multiple settings (including clinics, nurseries, schools, children's centres and clients' homes) 67 (64%)		Schools only 28 (27%)			

Abbreviations: NHS, National Health Service; SLCN, speech, language and communication needs.

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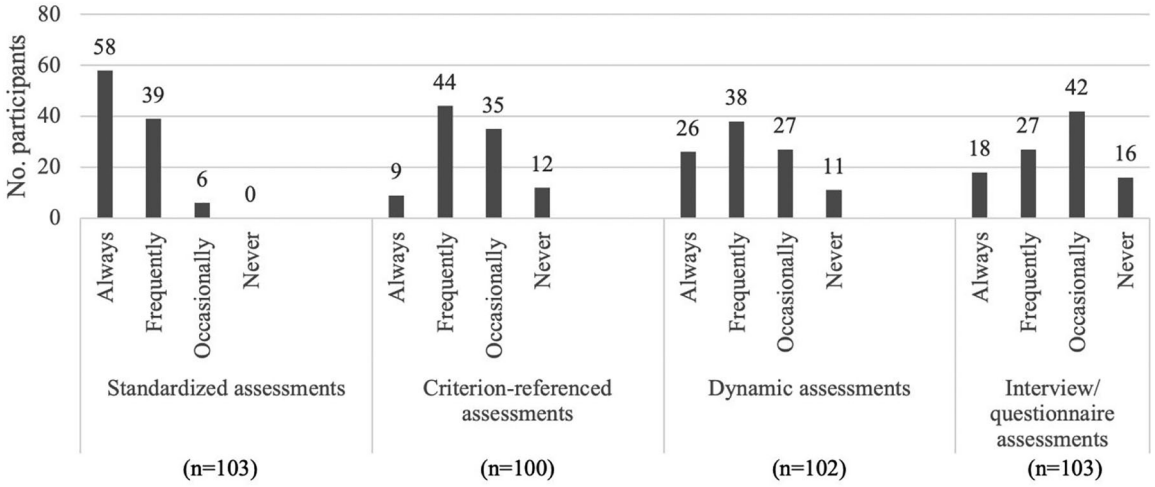

FIGURE 1 Sources of information used in assessment (single-answer multiple choice).

would you describe what you are looking for when you "observe" a child's expressive language skills?' All 104 participants returned short answers in a free text format. Content analysis of their responses identified the following five themes:

1. Observation of language features guided by linguistic domains

The majority of participants (n = 78) described looking for features of language across different linguistic domains. Most commonly cited were vocabulary and grammar or syntax, often specifying 'length of utterance', but observation of narrative and pragmatic features was also commonly reported. Several participants (n = 17) specified that they look for 'errors' or 'disordered patterns' and a few reported looking out for 'DLD markers'. The following response illustrates this theme, and includes features reported by many of the participants:

"Use of vocabulary, evidence of word finding difficulties/semantic or phonological errors. Syntax errors or maturity and morphology."

2. Observation of language skills guided by a developmental framework

A few participants (n = 10) alluded to the use of a developmental approach to interpret their observations. This included the 'language level' of the observed expressive language—the age at which such language would be considered typical—as well as comparison with peers, and comparison with the observed child's performance in other developmental areas. For example,

"The child's use of vocabulary and the structure of their utterances as compared to peers."

3. Observation of functional language

Observing 'functional' language was a prevalent theme in the responses (n = 61). Different variations of terminology were used by participants, including functional 'skills', 'abilities' and 'use of language'. Some participants did not elaborate on what they meant by these terms, but of those who did, there were two aspects of functional language that were frequently reported.

First, several participants described observations of functional language in terms of the child's effectiveness in conveying their message. Could they make themselves understood? This aspect is encapsulated in responses such as this one:

"Functional ability to be able to convey their message and be able to function with their peers."

Second, respondents described functional language in terms of the range of purposes for which language could be used. For example, one response read,

"Functional use of language—e.g. language used for making requests, initiating with others, joining in play, asking for help, commenting on play and environment."

These two facets of 'functional language' are not independent, and some responses incorporated both, for example,

"We focus on functional skills. How well the child can hold a conversation, how well they can use vocabulary to make themselves understood."

This includes responses from participants who explicitly used the term 'functional' (n = 50) and those describing these concepts without describing them as 'functional' (n = 11).

4. Observation of the individual and environmental influences on communication

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Some participants (n = 22) reported observing child-specific and/or environmental factors that might influence a child's spoken language. These included the child's own awareness of their difficulties, use of strategies or responsiveness to therapeutic techniques, such as imitation. Participants also reported looking to see how a child responds to different environments and different communicative partners. One response that illustrates this theme read,

"I would also look at the child's ability to communicate socially with peers and with adults in the classroom and how their communication style differs between people or settings."

5. Observation of the functional impact of the language difficulty

Some participants (n = 10) wrote about the impact on the day-to-day activities of a child, sometimes referring to well-being or participation or more specific examples of these such as frustration or withdrawal. For example, one response included,

"Impact of any difficulties on education, relationships and desired activities."

In summary, some responses focused exclusively on observing the domains of language or functional skills, but many combined several of the themes identified here.

Naturalistic language samples

Questions were included to gauge how commonly naturalistic language samples are utilised, and how they are typically collected and analysed in current clinical practice. 103 participants answered a single-answer multiple choice question about how often they collected naturalistic language samples. The majority of participants (88%, n = 91, 91/103) reported always (n = 56) or frequently (n = 35) collecting naturalistic language samples from the children they assess. One hundred participants answered a single-answer multiple choice question about the typical number of utterances contained in the samples. The most common number of utterances in typical samples was between 11 and 20 (n = 44), followed by 1–10 utterances (n = 30). Nine participants reported that their samples typically contained more than 50 utterances.

Language sample elicitation and recording

Participants were asked whether they 'gather utterances produced during general activities' and whether they 'deliberately elicit a language sample using a specific activity'. Figure 2 shows that both sampling contexts were utilised by over 80% of participants and that samples are often not recorded, but typically transcribed in real-time.

Participants were given the option of supplying further details for each question in free text boxes. From these responses, the following themes were identified.

Problems with using technology for LSA: a range of devices were reported as being used to record samples, but several participants described a lack of availability of technology for this purpose. In addition, some clinicians seem deterred by a lack of facilities to store the recordings/electronic data (for example, as part of a child's notes).

Acknowledgement of problems with real-time transcription: concerns were raised over the accuracy of participants' own transcriptions taken down at speed. The length of samples which could be transcribed in real time was indirectly acknowledged as being short, with 'short phrases' mentioned, and being easier with preschool children who 'say less'. Transcribing 'utterances of interest' or 'particular errors' was also reported.

Use of naturalistic sampling contexts: elaborating on gathering utterances produced during general activities, the contexts that participants reported tended to reflect naturalistic, contextualised or activity-focused interactions; samples of language produced during play, conversation, in class, or observed with peers were typically collected.

Use of elicitation activities for specific purposes: many participants gave details of the activities they use to elicit language samples (most commonly picture description or sequencing, story re-tell, games) but some indicated that these are specifically used to elicit certain aspects of language, for example using structured conversation to elicit past tense verb inflections.

Language sample analysis

Having established the methods used to collect language samples, participants were asked whether or not they used a particular method to analyse samples, and for this question each participant could describe multiple methods used. Ninety-nine participants returned answers. Fifty-three percent of participants (n = 52, 52/99) indicated at least one specific, named method of analysis. The responses are represented in Figure 3.

The most commonly cited method was the Language Assessment, Remediation and Screening Procedure (LARSP). Of the 29 participants who reported using LARSP, 14 specifically indicated that they use it informally, presumably applying the principles to their language sample analysis but not following the originally recommended protocol.

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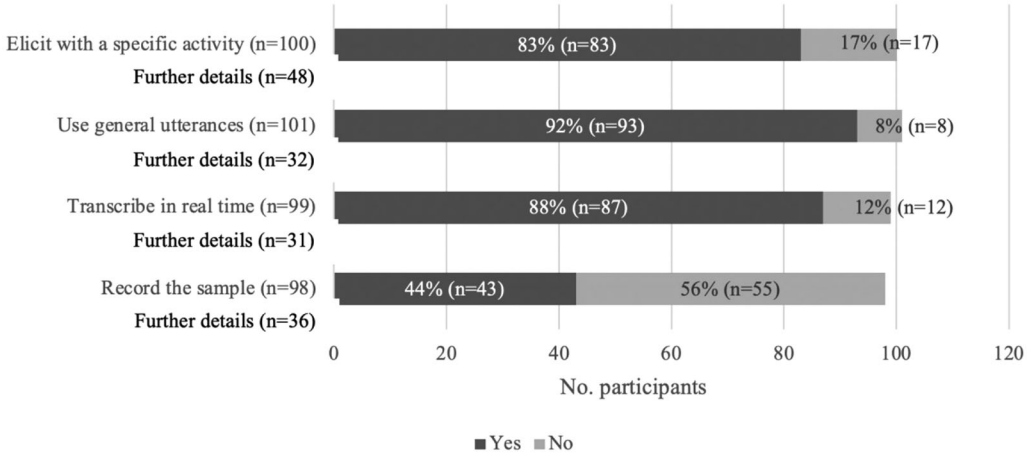

FIGURE 2 When collecting a naturalistic language sample, did you… (single-answer multiple choice Yes/No, with free-text box for details).

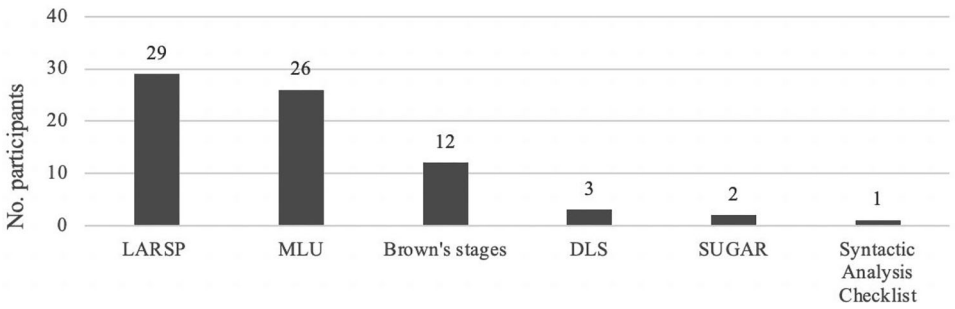

FIGURE 3 Specific methods used for analysing language samples ($n = 52$; free-text box). Abbreviations: Brown's stages (Brown, 1973); DLS, Derbyshire Language Scheme (Knowles and Masidlover, 1982); LARSP, Language Assessment, Remediation and Screening Procedure (Crystal, Fletcher and Garman, 1976); MLU, mean length of utterance; SUGAR, Sampling Utterances and Grammatical Analysis Revised (Pavelko and Owens, 2017); Syntactic Analysis Checklist (Bates and Clark, 2014).

Sixty-seven percent of participants ($n = 66$, 66/99) reported analysing the sample informally, that is, not using a named method. Informal analyses of vocabulary, morphology, syntax (including use of conjunctions, verb tense and subject/verb agreement), 'length of utterance', narrative features, errors and wider functional language skills were all commonly reported. Three respondents explicitly referred to using their own clinical judgement, through phrases such as, 'judgement with knowledge of age expectations' or 'using own knowledge of language development, norms, etc'.

Nineteen participants reported using a mixture of both specific, named methods and informal evaluations.

Participants also reported on factors deterring them from using more naturalistic language samples in their clinical practice. All 104 participants returned answers, shown in Figure 4.

Of the participants indicating 'other' factors, the most commonly reported difficulty was with processes of consent and confidentiality for making recordings ($n = 4$).

Measuring the functional impact of the language difficulties

Participants were asked about the formal and informal methods of assessment they had used to evaluate the 'functional impact of children's language difficulties (the effect of the language difficulty on everyday communicative functioning)' in the preceding year. The wording indicated that the section should be left blank if functional impact had not been assessed in the last 12 months, and so percentages have been calculated from a possible 104 responses. Seventy-six participants returned answers for this question, indicating they had recently assessed functional impact. Nineteen percent of participants ($n = 20$, 20/104) reported using one or more formal or published assessments. The most commonly cited was the Clinical Evaluation of Language Fundamentals Fifth Edition (CELF 5UK) Observational rating scale, (Semel et al., 2017), used by 15 participants. Four reported using the FOCUS (Thomas-Stonell et al., 2010), and three used other formal

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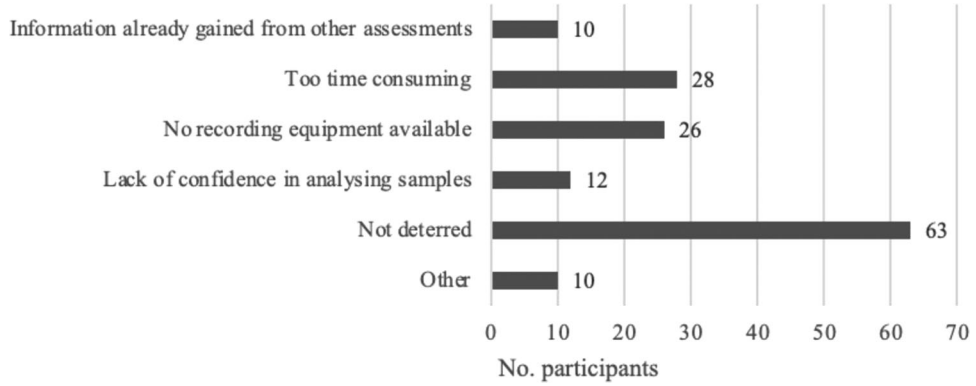

FIGURE 4 What deters you from using more naturalistic language samples in your clinical practice? ($n = 104$; multiple-answer multiple choice).

measures: 'in-house teacher questionnaires', 'Picture Me' resources (Merrick, 2014) and 'Language for Thinking' assessments (Parsons & Branagan, 2016). The relatively small proportion of therapists using formal measures may reflect a lack of availability, accessibility or awareness of published assessments focusing on the functional impact of language difficulties. In a free text response to a list of 'functional impact' assessments that could be selected, one participant wrote, "This is news—I will investigate these!"

Sixty-two percent of participants ($n = 64$, 64/104) reported using informal methods to assess functional impact. Thematic analysis of these short answer responses identified three assessment approaches that are typically used in SLT practice: (i) observation, (ii) discussion with the child and (iii) discussion with parents, carers and teaching professionals. Observation was reported by many participants ($n = 40$); this confirms the findings from the questionnaire item (reported previously) about what therapists look for during clinical observation. Eliciting views on the impact of the language difficulty from parents, carers, teachers and the child themselves were also widely reported. Other methods, less widely reported but utilised by several participants, included assessing functional impact using information from Therapy Outcome Measures (TOMs) or in-house checklists.

In total, 73% of participants ($n = 76$, 76/104) reported that they had assessed the functional impact of children's language difficulties in the preceding 12 months, using either formal or informal assessment (eight had used both methods). Twenty-seven percent ($n = 28$, 28/104) did not report using either formal or informal methods to assess the impact of the language difficulty in the last year (i.e., left the section blank). This may be because no assessment of functional impact had been done, or it may represent missing data.

Asking for the child's view

Many participants reported seeking the child's view of their difficulty with language as part of informal assessment of the functional impact. A subsequent questionnaire item asked explicitly whether the child was typically asked for their own perspective on the challenges they experience with communication. One hundred participants completed this question. Only 11% ($n = 11$, 11/100) said they did *not* typically ask the child for their perspective. Eighty-nine percent of participants ($n = 89$, 89/100) said they did typically ask for the child's view, but just under half of these ($n = 42$) qualified this in some way, indicating there are circumstances under which this is not their typical practice. Most commonly, participants said it depended on the age of the child, with Key Stage 2 (7 years and above) being frequently cited as the age at which this was done routinely. Others said it depended on the language level or cognitive ability of the child to understand, reflect on and respond to this kind of question. A number of participants reported the use of rating scales, talking mats or other visual support to help elicit the child's viewpoint.

Balancing assessment information from multiple sources in clinical decision-making

The questionnaire presented a clinical scenario to investigate how therapists make clinical decisions when there are discrepancies between parental or teacher concern and performance on standardised tests that is within normal limits (see Table 1). There were 102 responses submitted, and content analysis was carried out on the answers.

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Discharge: a small minority of participants (n = 11) indicated that discharging the child from their caseload would be their next step, usually accompanied by some sort of advice or recommendations. A further 20 participants referred to discharge in their responses, but not before further investigation. Nine participants cited their service's care pathways or criteria for intervention in deciding to close the case.

The majority of participants did not refer to discharge, but outlined further investigations they would carry out, which have been grouped into the following categories:

Gathering more information about parents' and teachers' concerns: Many of the participants (n = 48) indicated that they would seek more detailed information about the parents' and teachers' concerns regarding the child's language, including examples of specific difficulties and the impact they were having on her life.

Observation: Another common response (n = 43) was the importance of observation to assess the child's 'functional language skills' in everyday contexts. Some participants specifically indicated that these may be different to the language demonstrated on standardised assessment. Consideration of the impact of the difficulties was also frequently mentioned.

Further assessment: Many (n = 49) indicated that their next steps would include further, often informal, language assessment. This included analysing spontaneous language samples, evaluating receptive language or other domains of expressive language and wider consideration of skills such as attention, memory, auditory processing and literacy skills.

Interventions: Several participants (n = 19) indicated they would provide advice and recommendations to the parents and school about ways to support the girl's language development and minimise the impact of the difficulties. They commonly indicated that they would consider some form of input at the targeted level of intervention to be appropriate. A few responses included reference to other professionals who could be consulted, such as educational psychologists.

Most responses combined details from more than one of these categories.

SLTs' knowledge of the CATALISE statements on assessment

Participants were informed at the start of the questionnaire that the aim of the study was to gather up-to-date information about clinical practices in the light of recent changes to the terminology and criteria used to identify children with language difficulties. At the end, they were asked if they were familiar with the CATALISE Consortium's consensus statements about assessing children's language. All 104 participants completed the question. The responses were split roughly into thirds between those who considered themselves familiar with the CATALISE statements (n = 34, 34/104), those who did not (n = 38, 38/104) and those who knew about the statements but not in detail (n = 32, 32/104).

DISCUSSION

This paper explores how the CATALISE emphasis on functional impairment and impact are reflected in the assessment practices of UK SLTs in diagnosing DLD. The picture that emerges from the data is that, working within the constraints of their service provision and resources, SLTs' expressive language assessment practices typically combine a variety of information from different types of assessment to evaluate children's language, both in terms of linguistic development and the wider impact of language difficulties. This broadly aligns with several of the CATALISE statements relevant to the scope of this research. The research evidence and best practice that informed the statements should also be informing clinical practice, so it is encouraging that there is not a large discrepancy.

Combining multiple sources of information

The CATALISE consensus that multiple sources of information should be combined in assessment is largely reflected in the clinical practice of the participants in this study, in that standardised and other formal and informal assessments, language samples and information from parents, carers and teachers are common sources of information in the practice of UK SLTs. A recent paper by Bawayan and Brown (2022) demonstrated the importance of combining sources of assessment information in order to improve the reliability and consistency of diagnostic decision-making. It should be noted that participants in the current survey continue to use standardised assessments more frequently than criterion-referenced, questionnaires or dynamic assessment methods, despite documented concerns over the use of arbitrary statistical cut-offs to determine need and concerns regarding the psychometric properties of commonly used assessments (e.g., Denman et al., 2017). While a variety of sources of information are always or frequently drawn on during assessment, standardised tests seem to be a source that is almost always part of the combination. Sixty-two percent of participants reported always or frequently using dynamic assessments, a higher figure than reported by Australian SLTs in a recent

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survey (Denman et al., 2021). This questionnaire item did not differentiate between formal and informal assessments, so one possibility is that this represents reporting of a 'diagnostic therapy', or ongoing evaluation approach, taken by therapists.

Balancing sources of information in clinical decision-making

The clinical scenario data suggest that information from standardised, age-normed tests is mostly balanced with other sources of information such as clinical observation or reports from parents and teachers. The majority of participants reported clinical decision-making in which concerns about everyday language were not over-ridden by standardised test scores, which reflects research evidence in this area (Bishop & McDonald, 2009) but which contrasts with Fulcher-Rood et al.'s (2019) findings that standardised tests may exert the greatest influence on clinical decision-making. It should be noted that some participants in this survey referred to their service's care pathways when discharging such cases early in the assessment process. In reflecting on how current practice aligns with evidence and expert guidance, there are implications for policy makers at a service level as well as for individual therapists. Further research into how care pathways and criteria for intervention vary across the country would support improvements in parity of access to services.

Utilising assessment approaches that facilitate evaluation of functional impairment and impact

Naturalistic language sample analysis is one approach for identifying language difficulties in everyday interactions. The survey shows that the majority of participants routinely incorporate some sort of LSA into their clinical practice, often focussed on the grammatical level using either the composite measure mean length of utterance or taking a syntactic profiling approach such as LARSP. However, the data collected here raise questions over the quality of samples gathered, in terms of how representative the sample is of a child's language capability, the level of detail that can be recorded and the robustness of analyses performed, which mirrors longstanding concerns found in other surveys of LSA. Pavelko et al. (2016) reported that less than one third of the US school-based SLTs using LSA in the preceding 2012/13 school year had utilised a specific method or protocol for analysis. The data presented here suggests that UK SLTs also often do not to use published frameworks to guide linguistic analysis. Pavelko et al. also reported challenges to evidence-based practice, such as using short, unrecorded samples and this is mirrored by the findings reported here. Infrequent use of computer programs available for LSA (Pezzold et al., 2020), which can improve the objectivity of analysis, was reported amongst Australian clinicians (Westerveld & Claessen, 2014), and this survey replicates these findings amongst UK clinicians. Research by Klatte et al.'s (2022) in the Netherlands suggests training on LSA software does not necessarily increase its uptake though, so these authors consider other realistic alternatives which could support evidence-based LSA, such as encouraging analysis of shorter samples of narrative. The time taken to carry out LSA appears to deter some UK clinicians, which is a barrier that all these international surveys have reported. However, the Dutch research indicates that clinicians have a positive attitude to LSA, and many participants in this study reported not being deterred from using LSA, so SLTs may be motivated to develop greater use of evidence-based LSA, with support.

Evaluation of functional language and impact were frequently reported to be carried out during clinical observation. This appears to be an important approach in UK clinical practice, although this survey indicates that the exact type of assessment data collected during observation can vary widely. CATALISE mentions that clinical observations can lack reliability, with interpretation relying on clinical judgement (Bishop et al., 2016, p. 11). In this survey, clinicians reported looking at children's functional language and different domains of language during observation. Bawayan and Brown's (2022) research indicates that SLTs' judgements based on simply listening to language samples can be unreliable. Supporting clinicians in time-efficient, robust analysis of both clinical observations and language samples gathered would improve objectivity.

Another area highlighted by the findings is that children's own view of their difficulties with language could be more routinely sought, particularly with younger children or those needing support to express their opinion. This is not only an important source of information, but a step in supporting children to have agency in the process of assessment (Gallagher et al., 2018). The feasibility and practicalities of seeking the opinions of, for example, very young children could be a matter for further professional discussion.

Although only 11% of participants said they do not typically ask for the child's view on their language difficulties, in a separate question, up to 27% (including missing data) did not report using any method to assess the impact of the language difficulty in the last year. This discrepancy suggests that some clinicians surveyed perhaps do not equate eliciting the child's view with assessing impact. For others, the child's and parent/carer/teacher's view (along with

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clinical observation) were the main sources of information on impact. There appear to be relatively few formal, published assessments in this area, which was highlighted in the CATALISE comments on future research, and which may compound the lack of explicit evaluation of the impact of language difficulties. The WHO's Classification of Functioning, Disability and Health (World Health Organization, 2007) encourages professionals to consider the impact of a condition on 'activity', 'participation' and 'well-being' and can be used in the assessment of children's language disorders (Westby & Washington, 2017). These terms were sometimes used by participants in the context of guiding their clinical observations, and they underpin measures of change such as the FOCUS (Thomas-Stonell et al., 2010) and the RCSLT's Online Outcome Tool (https://www.rcslt-root.org/Welcome). Further consideration of what language dimensions to consider regarding 'functional impact', and how to measure these, would be beneficial.

Familiarity with the CATALISE statements

An important finding from this survey is the low level of familiarity with the details of the CATALISE statements on assessment reported by two-thirds of participants. The impact of CATALISE on SLTs' confidence to diagnose DLD has recently been discussed on social media (for example Ebbels, 2020), providing anecdotal evidence that the change has improved some therapists' confidence, but reduced others. This is starting to be recognised and addressed, for example through the RCSLT and NAPLIC webinar on diagnosing DLD (RCSLT & NAPLIC, 2020). A greater, first-hand familiarity with the CATALISE documents themselves would be a useful starting point for therapists wishing to reflect on how the change in terminology and identification of children with language disorders might influence their clinical practice. Confidence amongst SLTs in diagnosing DLD is vital to avoid misdiagnosis, misallocation of resources and to ensure success when raising awareness of the condition and promoting advocacy for people with DLD.

Terminology

The CATALISE documents use the terminology of 'functional impairments', 'functional impact' and 'functional language'. Thematic analysis of the questionnaire answers suggests that the term 'functional' may have a multifaceted meaning in clinical practice, incorporating the range of communicative acts used and the efficacy of communication, in the context of language that is used in everyday interactions. The term 'functional' is widely used in clinical practice in the United Kingdom, but further discussion to clarify the details of the dimensions of language referred to by this terminology, and how these can be objectively assessed, would be beneficial for the profession, as the concept is central to the new definition of DLD.

The CATALISE consensus has helped to resolve inconsistencies in the terminology used for this condition, but other aspects of the field of DLD—including assessment—continue to be troubled by variable and poorly defined terminology. It has been noted previously that 'clinical observation' is an approach widely used in the profession, but which can be used to gather many different types of assessment data, which may be analysed or interpreted in different ways. Denman et al. (2019) outline problems arising from poorly defined terminology and propose a taxonomy to improve consistency in describing assessments. Tools such as this, which aid consistent communication and consideration of different dimensions of assessment, could help to develop therapists' selection of assessment approaches which are directed to evaluating functional impairment and impact.

Limitations

Terminology is also a limitation of this current study, which assumed a shared professional understanding of terms such as formal/published and informal assessment and used Likert frequency scales without giving definitions. Similarly, understanding of what is meant by 'language sample analysis' can vary widely in terms of the context of sample generation and the analysis performed on it. The elicitation context may be very naturalistic (e.g., conversation with peers) or more clinical and constrained (e.g., story retell), and so be more or less useful for evaluating everyday language. Distinctions of this kind were not made in the wording of the questionnaire. The lack of definitions in all these areas allows variation in interpretation by participants, and therefore limits the precision of what can be understood from the results.

Another limitation is that although SLTs' assessment practices are described, the data collected do not, for the most part, reveal the reasons behind these practices. For example, the majority of participants worked with children across a range of ages, but the questions were not broken down by age of the children being assessed. It is possible that different assessment approaches are utilised, or felt to be more or less appropriate, for children of different ages. Survey methodology provides limited opportunities to expand on answers, unlike semi-structured interview methods, which allow follow-up questions to clarify or explore responses. Further, finer-grained exploration of the trends identified here, and better understanding of the clinical reasoning underlying assessment, would be helpful to aid reflection on good clinical practice.

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This sample of 104 paediatric SLTs is a small proportion of the professional population in the United Kingdom, so it cannot confidently represent the current state of current countrywide clinical practice. Some groups are underrepresented. However, the sample is sufficient to allow identification of trends which can be the basis of further discussion and reflection about best practice.

The findings of this survey give an insight into how SLTs in the United Kingdom assess some aspects of children's expressive language since the CATALISE publications. The hope is that this will support clinicians to take reflective action when developing their assessment practices and so reduce the typical time lag shown in health research translation and knowledge transfer (McCabe, 2018).

CONCLUSIONS

This survey indicates a broad alignment between the expert consensus presented by CATALISE and many expressive language assessment practices used by UK SLTs, allowing them to consider the functional impairment and impact caused by the language disorder. There is, however, a lack of clarity regarding what the terms 'functional impairment' and 'impact' mean, what dimensions of these should be evaluated and how to objectively assess them. Professional consensus and guidance is needed to clarify these matters, so that they can be routinely included in clinicians' assessment practices. Once clear definitions are established, evidence-based clinical tools to support assessment can be identified or developed, for example using methods such as analysis of naturalistic language samples and clinical observations. Professional guidance on what is minimally required during language assessment, as in speech assessment (Bates et al., 2021), would encourage the consistent use of holistic and ecologically valid assessment practices with a strong evidence base to identify children with DLD. A greater familiarity with the CATALISE documents, and reflection—at an individual and service level—on how these relate to clinical assessment practices, is a necessary first step towards these goals.

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CONFLICT OF INTEREST STATEMENT

The authors report no conflicts of interest. The authors alone are responsible for the content and writing of the paper.

DATA AVAILABILITY STATEMENT

The datasets generated during and/or analysed during the current study are unavailable as permission was not sought as part of the informed consent process.

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