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Non-verbal methods for assessing grief and mental health in children and individuals with additional communication needs: A scoping review

Noreen Hopewell-Kelly[1], Silvia Goss[1], Mala Mann[1], Linda Machin[2], Timothy Pickles[3], Freya Field[1], Letizia Perna[4], Lucy Selman[5] and Emily Harrop[1]

Abstract

Introduction: Bereavement affects individuals in diverse ways, and the support they require can vary significantly. For grief to be effectively recognised and addressed in both clinical and research settings, appropriate and validated assessment tools are essential. However, there is a notable gap in child-specific tools, particularly those that use non-verbal approaches to support young children and individuals with Special Educational Needs (SEN), who may have limited verbal communication.

Aims: This scoping review aims to explore and map existing evidence on grief and mental health assessment tools that incorporate non-verbal methods. The focus is on tools used with children aged 11 and under, and with older children or adults who have additional learning or communication needs, in therapeutic and research contexts.

Methods: We conducted a scoping review using Arksey and O'Malley's five-stage framework. Searches were carried out across five databases – CINAHL, Medline, PsycINFO, Cochrane Library and Scopus – from their inception to 7 December 2023. Data from eligible studies were analysed using descriptive statistics and content analysis.

Findings: From 1498 screened papers, 22 articles were included. Most described mental health tools rather than grief-specific assessments. Five key themes emerged: tool development processes; language and item selection; use of visual imagery; response format design and psychometric properties, including feasibility and utility. These features illustrate how non-verbal methods can support communication and engagement in assessment.

Conclusion: This review highlights current approaches to assessing grief and mental health in children and individuals with SEN using combinations of verbal and non-verbal methods. It provides a foundation for future development of accessible, structured grief assessment tools tailored to these populations and underscores the urgent need for such resources in practice.

[1]Marie Curie Research Centre, School of Medicine, Cardiff University, UK
[2]School of Medicine, Keele University Faculty of Medicine and Health Sciences, UK
[3]Centre for Trials Research, Cardiff University College of Biomedical and Life Sciences, UK
[4]Winston's Wish, Gloucester, UK
[5]Palliative and End of Life Care Research Group, Population Health Sciences, University of Bristol, UK

Corresponding authors:
Noreen Hopewell-Kelly, Marie Curie Research Centre, School of Medicine, Cardiff University, Cardiff CF14 4YS, UK.
Email: Hopewell-KellyN2@cardiff.ac.uk

Emily Harrop, Marie Curie Research Centre, School of Medicine, Cardiff University, Cardiff CF14 4XN, UK.
Email: Harrope@cardiff.ac.uk

Plain language summary

Exploring the non-verbal methods that are used to assess and explore grief, mental health and wellbeing with children and people with additional communication needs: A scoping review

This scoping review examined the existing research on therapeutic and support tools that use non-verbal methods to engage with and assess the grief and mental health needs of young people, particularly those with special educational needs (SEN). The review identified 22 relevant articles, which we analyzed and identified five main themes: these were, (1) the development of these tools and approaches, (2) how the tools work using key verbal and non-verbal features, (3) the use of visual representation and imagery, (4) the response options available, and (5) the effectiveness and performance of the tools. The review found that there is a lack of accessible, structured grief assessment tools that use non-verbal methods for bereaved young children and those with SEN. The findings provide an evidence base for further developments in this field, highlighting the need for more research and the creation of such tools to better support these populations.

Keywords
assessment, grief, bereavement, mental health, children, young people, special educational needs, non verbal communication, scoping review

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Introduction

The need for formal assessment and screening practices to determine need and appropriate levels of support-provision in bereavement policy and practice is growing in recognition.[1,2] A variety of tools are available to assess grief and bereavement support needs in adults,[3] with many also used as outcome measures for evaluating interventions and services.[4] Grief measures should be used for the same purposes when supporting bereaved children and young people, but must sensitively reflect differences in child grieving (including developmental shifts in the meanings of loss[5]), language abilities and comprehension, significant life relationships and social contexts (e.g. parental, school/education systems).[6,7] Given the more limited language abilities of younger children and those with Special Educational Needs (SEN), and the fact that many children lack the words to express what they mean when it comes to talking about a death or traumatic experience[6,8] approaches which use non-verbal methods to assess and explore child grief are also needed.[8–10]

Two recent systematic reviews have investigated grief instruments used with children and adolescents, confirming the absence of and need for more accessible child grief tools. Zhang et al.[11] identified a total of 24 grief assessment tools, clustered into three categories: general-purpose grief scales ($n=9$), maladaptive grief reactions scales ($n=13$) and specialised grief scales ($n=2$). Ennis et al.[12] focused on tools used to assess maladaptive grief in children following traumatic loss, identifying 17 measures, in addition to various adaptations and variations of these measures. Many of these measures were directly adapted from adult measures with minimal testing of face and content validity, raising questions over their age and developmental appropriateness.[11,12] Most were designed for and validated with older children (e.g. 8+), and all are reliant on verbal or written communication exchange, making them difficult to use with those with limited means of verbal communication or who are too young to express their feelings verbally. For some of the tools, lengthy administration times due to a large number of items likely also limits their suitability for use with younger children.[11] Similar problems have been reported in the wider field of mental health assessment in children.[13]

Although not reflected in available child grief tools, a variety of alternative non-verbal approaches have been used therapeutically and in research with children with mental health problems and/or who have had traumatic experiences, including bereavement.[14] In mental health research/practice, the use of pictures and images in stories, questionnaires and interviews has been shown to provide a means of engaging with children, with pictorial formats assisting comprehension and the interest and focus of children, whilst also avoiding over-reliance on the vocabulary of the child.[15] Play therapy – including sand play and puppet therapy – has also been shown to effectively engage children, whilst offering insight into their experiences and feelings. Within these approaches 'play' is recognised as a form of language, and a meaningful way for children to explore and express their experiences and emotions, often using objects/mediums such as sand, puppets and toys/figures to project or convey difficult experiences and feelings.[10,14,16,17] Likewise, art therapy, involving drawing and other forms of visual image-making, is used to help children access their feelings and give meaning to experiences that cannot easily be expressed in words.[8,18,19]

Responding to this need for accessible child grief tools, we are developing a pictorial version of the Children's Attitude to Grief (CAG) Scale for use with younger children and older children with SEN.[20] Like the original Adult Attitude to Grief Scale,[21] the CAG is used both as a psychometric measure of vulnerability in bereavement – based on the interacting concepts of overwhelm/control/resilience in the Range of Response to Loss model of grief,[22] rather than a list of symptoms and a therapeutic conversational tool for qualitatively exploring client grief. We conducted this scoping review to better understand the key methodological components and features of tools/approaches which assess or explore grief, mental health and well-being using non-verbal methods. While directly informing the design of our own tool, this descriptive, systematically conducted review will also be helpful for other researchers and practitioners interested in designing and/or selecting similar research and assessment tools for children and adults with limited verbal communication in these fields of research and practice.

Methods

The review aimed to identify and map the key methodological components and features of clinical and research tools or interviews which assess or explore grief, mental health and well-being using non-verbal methods with children (aged 11 and under) and young people/adults with additional learning or communication needs.

The reporting of this review conforms to the PRISMA Extension for Scoping Reviews (PRISMA-ScR) guidelines for scoping reviews (Table A1).[23] The protocol for the scoping review was published on the public Open Science Framework platform on 09 May 2024 and can be accessed at https://doi.org/10.17605/OSF.IO/UB7ZC.

The review objectives were to:

1. Map available clinical and research tools/approaches which use non-verbal methods to assess and/or explore grief, mental health and well-being, and the related concepts of quality of life and coping/resilience in young children and people with SEN or other communication needs.
2. Identify and describe the key methodological components and features of these tools/approaches.
3. Assess the evidence on the performance, feasibility and acceptability of these tools/approaches.

Review design

A scoping review methodology was selected as our aim was to establish an overview of the current evidence base related to the topic (in this case 'tools') of interest.[24] The review followed Arksey and O'Malley's[25] rigorous and transparent five-stage framework, as updated by Levac et al.,[26] to enable replication of the search strategy and increasing the reliability of the review findings. The five stages involve; (1) identifying the initial research questions, (2) identifying relevant studies, (3) study selection, (4) charting the data and (5) collating, summarising and reporting the results.

Identifying the research question

The following research question was identified for this review;

> What are the key methodological components and features of clinical and research tools or interviews which assess or explore grief, mental health and wellbeing using non-verbal methods with children and young people/adults with additional learning or communication needs?

This question was underpinned by the PCC (population, concept, context) framework.[27] The PCC framework is recommended as a guide to create clear and meaningful objectives and eligibility criteria for a scoping review. See Table 1 for PCC framework developed to refine the research question and determine search terms.

Search terms

Based on Medical Subject Heading (MeSH) terms and a set of key words, a preliminary search in Medline and Cumulative Index to Nursing and Allied Health (CINAHL) was conducted to identify articles on the topic. The keywords identified in the titles and abstracts of relevant articles, along with the MeSH terms used to index them, were utilised to develop the full search strategy by the study team (N.H.K., S.G., E.H.), with input from the wider team and the Public Involvement Youth Group. Three sets of terms were developed and combined according to the population (e.g. children, people with additional learning or communication needs), the 'condition'/'treatment' (e.g. grief, mental health, therapy, counselling) and terms relating to non-verbal assessment methods (e.g. picture, pictorial, smiley, questionnaire, interview, measure). See Table A2 for the Medline search strategy.

Identifying relevant studies

A broad search was performed across a wide range of databases. CINAHL via Ebsco, Medline via Ovid, PsycINFO via Ovid, Cochrane Library (CDSR and CENTRAL) and Scopus, for studies published from inception of the databases to 7 December 2023. The archives of the key journal 'Bereavement' were also hand searched back to 2018, as the journal is not indexed in these databases. After the systematic searches, the reference lists of included papers in this review were scanned for potential articles. Experts

Table 1. PCC framework.

Population/problem	Concept	Context
Children Young people Teenagers Adolescents People with SEN	*Tools* which use non-verbal methods to communicate with children (up to 11) or people with additional learning or communication needs (e.g. pictorial representations of questionnaire topics, drawing activities)	Tools Effective communication Provision of appropriate support
Service providers	Mental health and bereavement services Education settings Clinical settings Research settings	Service provider experiences/perceived competency in using tools Confidence in delivering support in non-verbal/semi-verbal ways Skills and training Barriers and challenges in working with non-verbal client groups
Problem: Using non-verbal approaches to assess grief and bereavement experiences, mental health and well-being and the related concepts of quality of life, coping and resilience	Communicating non-verbal expressions of grief and other feelings relating to mental health and well-being, etc.	

SEN: Special Educational Needs.

working in the field were consulted to identify any potential sources that may have been missed in the searches. All references identified from the database search were uploaded to reference manager software (EndNote, version X20.6)[28] and screened by one reviewer (M.M.) to remove duplicate records. The final deduplicated EndNote library containing ($n = 1498$) unique articles were imported into the systematic review management platform Rayyan.[29]

Selecting the studies to be included

The eligibility criteria for inclusion of papers were:

- Reports of empirical studies of tools/questionnaires or interviews used clinically and/or in research to assess/explore grief OR mental health and well-being OR resilience/coping OR Quality of Life using methods which were not wholly verbal (e.g. questionnaires which involved pictorial representations of concepts/items).
- Study participants were children of UK primary school age and below (11 and under); and/or young people and adults with Special Education Needs (SEN); and/or people (adults, children, young people and adolescents) experiencing language/communication barriers due to other reasons (e.g. non-native speakers/migration background/low-literacy levels).

Exclusion criteria were studies of tools which did not involve any form of non-verbal communication of the concepts/feelings being explored, or that were used exclusively with children above primary school age, and/or young people/adults without SEN or other language barriers.

Additional exclusion criteria that were applied included studies of measures specific to a condition or context, where the context/condition was not relevant to the focus of the review (e.g. pre-operative anxiety, quality of life (QOL) in relation to specific illnesses). Book chapters and conference abstracts were also excluded.

To select studies for inclusion, we used an iterative approach. N.H.K., E.H. and S.G. independently reviewed the titles and abstracts, followed by full-text screening. At all stages of the screening process, any disagreements between the reviewers were resolved through discussion, and when necessary, by consulting a third reviewer. A record of decisions was kept on Rayyan. To facilitate calibration, the team met during the process, with the first meeting focused on creating a shared understanding of the criteria and later meetings focused on comparing selected citations and discussing any discrepancies. The PRISMA diagram (Figure 1) reports the different stages of article selection. Studies that had used a relevant tool (e.g. as an outcome measure) but were not reporting empirical findings relating to the development or evaluation of the tool were initially retained at full-text screening and details of the tool extracted. The validation study for the tool (if not already included) was then retrieved and screened for inclusion. In total, 22 studies were eligible to be included in the review.

Charting the data

The data extraction template (see Table A3) was developed by the study team in Microsoft Excel and included specific details relating to the participants, concept, context, study methods, type of tool and description of tool, including key methodological components and findings relating to the tool's psychometric properties, utility and feasibility.

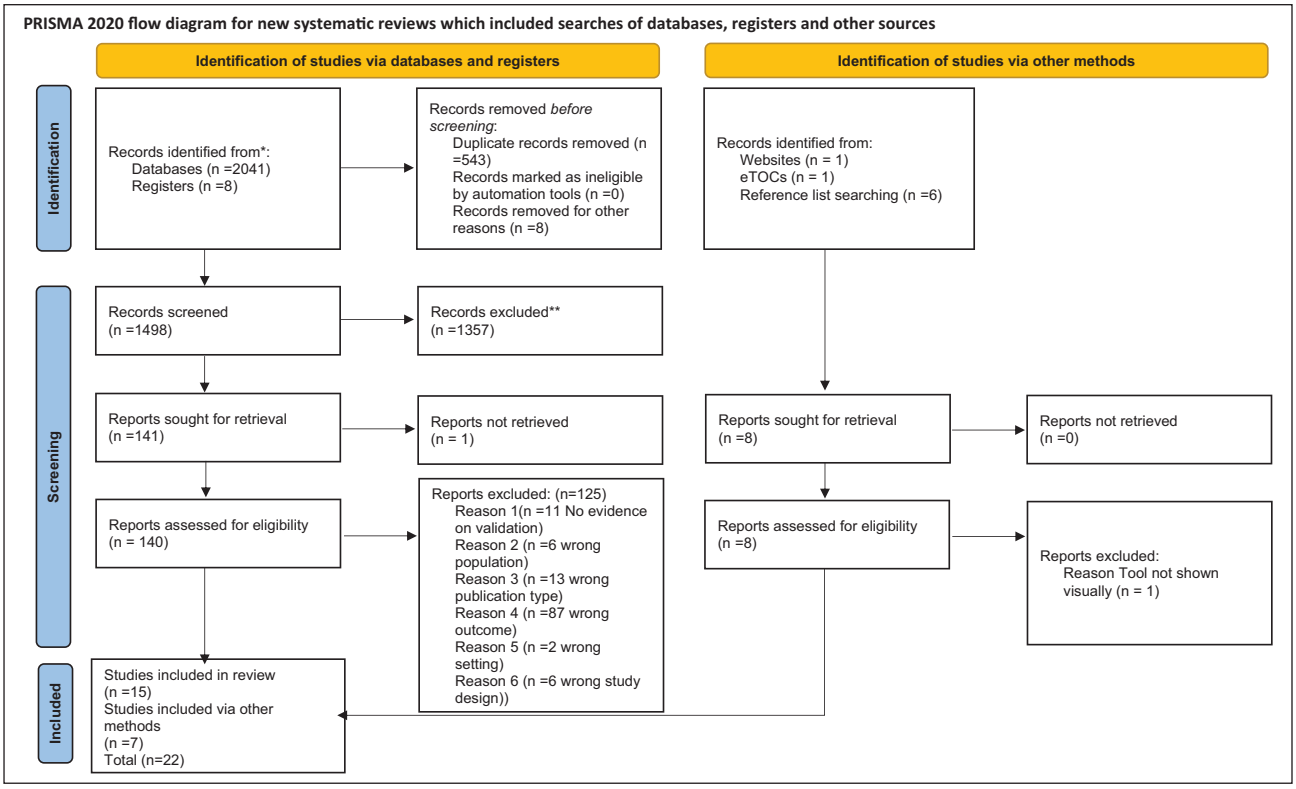

Figure 1. PRISMA diagram.
Source: Page et al.[30] This work is licensed under CC BY 4.0. To view a copy of this license, visit https://creativecommons.org/licenses/by/4.0/.
eTOC: Electronic Tables of Contents.

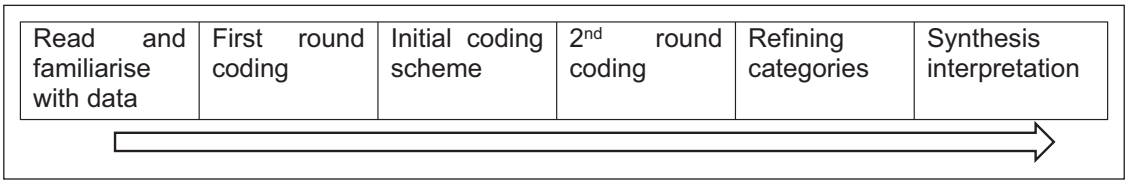

Figure 2. Approach to analysis.

N.H.K. and E.H. piloted the data extraction template, which was modified based on the pilot and then used to extract data from the included studies. Data were extracted independently, checked by a second reviewer for consistency and accuracy and, where required, disagreements resolved through discussion. Authors of one paper were contacted to request additional information. Five further papers were identified from searching references within the 17 articles. The quality of the studies was not evaluated as this is not necessary for the purpose of a scoping review which aims to map/describe the evidence.[24,25,31]

Analysis

Analysis of the articles involved a two-stage approach[27,31]: first, a descriptive statistical analysis to quantify included sources, publication types, years of publication and theme frequency across sources; second, a basic content analysis of the data extracted from the 22 articles. The analysis was undertaken by N.H.K. and E.H. and followed a rigorous and systematic six-stage approach,[32] outlined in Figure 2.

Broad initial codes were applied to reflect categories of interest relating to the research question which served to guide an inductive approach to coding. Development of the coding framework was continually checked in relation to the original source of data and the scoping review question. Interpretation of analysis was also checked against the original documents, data extraction templates and the researchers' notes.[33] Five themes were identified in the analysis of the articles: (1) Development of tools and approaches; (2) Language used and items included; (3) Visual representations and imagery; (4) Response options; (5) Psychometric properties, utility and feasibility.

Results

Study characteristics

Twenty-two articles were included in the review. Of these, most were quantitative validation studies of assessment tools or measures ($n=15$),[13,34–47] with five of these studies also reporting the measure's development.[13,36–38,45] Two were qualitative development/validation studies,[14,48] three were observational studies[49–51] and two were intervention studies that used a relevant measure in a pre-post study design and reported evaluation data relating to the measure.[52,53] Studies were carried out in 14 countries, most commonly the United States ($n=5$),[35,37,40,42,51] the United Kingdom ($n=3$)[34,36,43] and Canada ($n=2$).[45,46]

Table 2 provides an overview of the articles, the approaches identified in the article, the purpose of the measure, key features of the measure, aim of the study, key findings relating to the psychometric properties or use of the measure in observational/interventional contexts, and key features of development/validation where given. A summary of key considerations for design and implementation has also been included in the table to reflect the learning identified via our analysis. A separate table reporting the detailed statistical results of the included psychometric validation studies is included as Supplemental File 1.

Measure characteristics: Conditions and populations being assessed

A total of 21 different measures/tools were identified across the 22 included studies. Measures assessed mental health ($n=10$),[13,35–37,39–41,45–47,52,53] depressive symptoms ($n=1$),[42] trauma ($n=2$),[44,49] anxiety ($n=1$),[48] stress/coping ($n=2$),[51,52] mood ($n=1$),[34] emotional states ($n=1$),[50] quality of life ($n=2$)[38,43] and grief or collective grief ($n=2$).[14,49] Eight of the measures were new measures,[13,34,37,42,45,48,50,52] 11 were adaptations of existing child measures[31,35,39,46,47] or measures originally used to assess a different condition or population group.[36,38,40,41,43,44,49] A further three studies reported on novel non-verbal approaches to enhance and facilitate communication during research interviews[14,51] or in a therapeutic context.[53]

The measures were designed to be used with a variety of population groups. These included children ranging in ages from between 3 and 16 years,[13,35,37,39,42,44–47,49,53] children with autism,[48] children/adolescents with psychiatric disorders,[50] parents with low-literacy levels,[40,41] people with learning disabilities,[36,43,52] adults with hearing loss and intellectual disabilities,[38] adults with aphasia following stroke,[34] siblings of children with cancer[51] and bereaved children.[14]

Developing the measures

Varied approaches were taken in the development (or adaptation) of the different measures. These included interviews and observations,[13,14,48] focus groups[13,36] and consultation/collaboration with a range of professionals (e.g. teachers, clinical professionals, support workers), parents, children and/or the learning disability (LD) community.[13,36–38,40,42,43,45,48]

These consultative processes commonly led to a reduction of questions and/or item selection,[13,37,43] simplification of language to meet the needs of the population group,[13,36,38] development of pictures to illustrate questionnaire items or constructs (e.g. mental health symptoms),[40,41] visual representations of pictorial characters (of different gender, ethnicity, etc.) and general imagery.[13,35,42,45] The number of options given in response rating scales were also sometimes reduced.[36,43] Early piloting of measures was helpful in highlighting what wasn't possible/appropriate (e.g. computer-based self-administration in adults with LD and hearing loss[38]; classroom administration of a questionnaire with very young or autistic children[13]). These specific adaptations and methodological features of the different approaches are discussed below.

Language used and items included

A variety of approaches were used to develop the questionnaire items, with the aim of ensuring that question construction was suitable for their target populations. This included evaluation of a pre-existing measure that informed adaptations,[36] focus group discussions that informed each iteration,[13] consultation with parents and teachers to choose scenario-specific questions[48] and collaborations with specific groups, such as healthcare professionals alongside a graphic designer[40] and adults with LD.[36] Piloting and seeking feedback on the suitability and feasibility of questions was also undertaken with individuals with LD.[38] These activities typically led to modifications in language to improve accessibility, particularly where the tool was an adaptation (i.e. from CORE-OM to CORE-LD[36] and MANS-LD to Mini-MANS LD[43]) and a reduction of questions/pictures/items to be included in the measure.[13,36,37,45]

The number of items varied greatly across the different measures, reflecting the diversity in purpose and scope of the different approaches. These ranged from shorter measures with between 1 and 15 items[13,34,36,38,43,48,50,52] to multidimensional pictorial questionnaires with between 97 and 137 items.[35,37,39,40,45–47] The items were delivered in a variety of ways that ranged from first person 'I' statements, for example, 'I can tell someone how I feel',[13] direct questions about themselves, for example, 'Have you bottled up angry feelings?'[35–37,42] and third person approaches that ask whether they act/feel like a depicted character.[35,37,39,45–47]

Semi-projective measures (where realistic, familiar pictures or objects are presented to children to explore issues that may not be accessible via projective approaches) and wholly/fully projective approaches (where children used drawings to convey their thoughts and feelings) were used

Table 2. Summary of papers included in the review.

Development and/or validation of studies

Author(s), year, country	Population	Name of tool or approach used	Condition	Key features of tool (including response format)	Aims of the study and methodology	Study findings related to the acceptability/performance/ validity of the tool/approach	Key considerations for design/development/ implementation
Barrows and Thomas, 2018, UK[34]	Adults with aphasia following stroke	Dynamic Visual Analogue Mood Scales (D-VAMS) *(new tool or approach)*	Mood	*Key features*: • Self-reported visual measure using photographs of facial expressions transitioning on seven mood scales (e.g. 'sad-happy', 'bored-excited') corresponding to a score ranging from 0 to 100 *Response format:* • Vertical slider that allows respondents to report their mood by modulating the facial expression images (starting from the 'neutral' midpoint)	*Aim of the study*: • To validate the D-VAMS and assess its suitability as an outcome or screening measure *Methods:* • 46 stroke survivors rated their mood in the last week both via 'Faces-only'/'Words-only' versions and then completed the HADS • Subsequently, they rated their mood again ('Faces-only'/'Words-only')	• Results indicated high internal consistency of D-VAMS and a high correlation between 'Face-only' D-VAMS scores and the HADS total scores and subscale scores D-VAMS also showed good sensitivity and specificity against HADS	• Gender of the face was alternated across participants • 'Faces-only' version simulated assessment conditions for profoundly aphasic respondents • Findings suggested a practice effect; test run advisable for people unfamiliar with D-VAMS
Bidaut-Russell, et al., 1998, USA[35]	Children (5.5–13 years) *(boys only due to a lack of a Terry girl version)*	Terry questionnaire *(adaptation of an existing tool or approach)*	Mental health	*Key features*: • African American version of the Dominic-R questionnaire (see Valla et al.[46]) • Pictorial questionnaire with 97 questions, with each question read out by the interviewer • Covers 7 DSM-III-R diagnoses (e.g. depression/ dysthymia, Attendtion Deficit Hyperactivity Disorder (ADHD) *Response format:* • Children are asked if they act/feel/think/are like Terry. Yes/no response recorded	*Aim of the study*: • To determine the test-retest reliability and internal consistency of the Terry questionnaire *Methods:* • 36 boys completed the Terry questionnaire • 30 mothers/primary caretakers were interviewed with a modified parent-version of the Terry • Re-test after 10 days ±6	• Very good test-retest agreement for all seven diagnoses. • Very good internal consistency of the symptom's scales for all seven diagnoses • Mother-child agreement tended to be poor at both time points • Overall good acceptability of the questionnaire among mothers and children (both positive and negative comments)	• Importance of cartoons matching children's ethnic/cultural identity • Cartoons and questions were examined and edited for visual and language/cultural adequacies by two African Americans • Combining visual (cartoons) and auditory (interviewer reading out questions) input facilitates information processing and holding children's attention • Can be used by lay interviewers or clinicians

(continued)

Table 2. (continued)

Development and/or validation of studies

Author(s), year, country	Population	Name of tool or approach used	Condition	Key features of tool (including response format)	Aims of the study and methodology	Study findings related to the acceptability/performance/ validity of the tool/approach	Key considerations for design/development/ implementation
Brooks et al., 2013, UK[36]	People with learning disabilities	Clinical Outcomes in Routine Evaluation – Learning Disabilities (CORE-LD) *(adaptation of an existing tool or approach)*	Mental health	*Key features*: • The 14-item CORE-LD is an adaptation of the 34-item CORE-OM (Clinical Outcomes in Routine Evaluation- Outcome Measure) questionnaire for use with people with learning disabilities to measure feelings *Response format:* • 3-Point scale, with beakers to represent frequency: empty beaker = 'not at all'; half-full beaker = 'sometimes'; full beaker = 'a lot'	*Aim of the study*: • To adapt the CORE questionnaire to meet the needs of people with learning difficulties (Phase I) and psychometrically test the measure (Phase II). *Methods:* • Inclusive research approach involving adults with learning disabilities as part of CoRG • Key tasks included identifying 'missing domain' items, making language more accessible and reducing items • Psychometric testing with pre- and post-therapy data from clients with learning disability receiving therapy ($n = 272$ in the first phase; $n = 486$ in second phase) • Test-retest reliability was tested in a non-clinical sample of $n = 52$ people living in the community who completed the CORE-LD twice at a week's interval	• Preliminary psychometric analysis of the initial 17-item CORE-LD version (e.g. item omission rates, test-retest stability of items, discrimination between clinical and non-clinical clients) identified four problematic items, three of which were subsequently removed • Repeat psychometric testing of the revised 14-item CORE-LD found it to be a valid measure with good test-retest stability, no significant test-retest mean shift, or total score mean shift and good internal consistency • Reduction in mean scores from pre- to post-therapy	• CoRG agreed that CORE-LD needed to be shorter and language more accessible than the original CORE-OM, with • visuals to support the meaning of each item • Initial 5-point rating scale was confusing. Replaced with a 3-point scale with visual iconic representations ('beakers') • Design of the CORE-LD as a tool to be administered collaboratively between therapist and client addresses power imbalances in therapeutic relationships, helping people to respond more authentically to the questions

(continued)

Table 2. (continued)

Development and/or validation of studies

Author(s), year, country	Population	Name of tool or approach used	Condition	Key features of tool (including response format)	Aims of the study and methodology	Study findings related to the acceptability/performance/ validity of the tool/approach	Key considerations for design/development/ implementation
Ernst et al., 1994, USA[37]	Children (6–16 years)	Pictorial Instrument for Children and Adolescents (PICA-III-R) *(new tool or approach)*	Mental health	*Key features*: • Pictorial instrument consisting of 137 symptom pictures representing DSM-III-R criteria (Diagnostic Statistical Maunal of Mental Disorders), organised into seven diagnostic subscales • For each picture, child is asked: 'Are you like this child?', 'How much are you like this child?' and 'How much do other people say that you are like him?' *Response format:* • Children asked, 'Are you like this child?' Yes/no response recorded. • 5-Point scale, with figure showing 'how much' with their arms/hands in response to the 'How much . . .' follow-up questions	*Aim of the study*: • To develop a pictorial tool to assess psychopathology in children and carry out initial testing in a clinical sample *Methods:* • 3-Step development process: (1) Picture creation, followed by informal feedback from children hospitalised in a psychiatric unit; (2) Assessment of picture comprehensibility in a sample of $n = 31$ healthy children (children were asked to describe each picture without a prompt); (3) Testing of instrument in a sample of $n = 51$ children hospitalised in a psychiatric in-patient unit, with a sub-sample of $n = 15$ children re-tested 6 weeks later	• Initial set of 350 pictures reduced to 137 pictures in final tested version • For most subscales, internal consistency was excellent • Most inter-subscale correlations (used to estimate degree of overlap between subscales) were small • The three subscales with the highest internal reliabilities significantly discriminated among the four key diagnostic groups • Sensitive to change when re-tested at discharge	• Children enjoyed the interview • Only one child (aged 5.5 years) unable to comply • Time requirement: 40–60 min • Instrument facilitates communication in clarifying difficult questions and can help children sustain their attention during clinical interviews

(continued)

Table 2. (continued)

Development and/or validation of studies

Author(s), year, country	Population	Name of tool or approach used	Condition	Key features of tool (including response format)	Aims of the study and methodology	Study findings related to the acceptability/performance/ validity of the tool/approach	Key considerations for design/development/ implementation
Fellinger et al., 2021, Austria[38]	Adults with hearing loss and IDs	European Health Interview Surveys–Quality of Life (EUROHIS-QOL ESL) *(adaptation of an existing tool or approach)*	QOL	*Key features*: • Sign language interview based on an established self-report short measure for QOL (the 8-item EUROHIS-QOL) *Response format:* • 5-Point visually based Likert scale with smileys	*Aim of the study*: • To develop a reliable and valid procedure to measure self-reported QOL in deaf individuals with ID *Method:* • EUROHIS-QOL was translated and adapted into an easy-to-understand sign language version, following guidelines and revised with feedback from professionals fluent in sign language. Piloted with three individuals • *N* = 41 deaf individuals with ID completed the self-report interview at two time points 6 months apart (t1, t2) • At t2, Stark QOL picture-based questionnaire and 'light bulb' rating of QoL were completed for validation purposes • Interviewers rated participants' comprehension of each question on a 3-point scale • Proxy-ratings on EUROHIS-QOL obtained from professional caregivers	• Successfully administered at both time points, showing good test-retest reliability and internal consistency • Significant correlations with the Stark QOL and marginally significant correlations with the 'Light response' measure (significant in participants with higher comprehension scores) • Poor agreement between self and proxy measures at t1 with regards to the total sample but fair-to-good consistency for the sub-sample with good comprehension at t1 and the total sample at t2 (participants with poor comprehension were excluded after t1)	• Easy-to-understand sign language version of EUROHIS-QOL ESL can be administered in a time-efficient manner and with high acceptance by individuals who are deaf and have mild-to-moderate ID • Early piloting indicated that computer-based self-administration was not possible in this population. Standardised face-to-face interviewing needed, using a video template and written interview guideline for interviewers • Findings implied that individuals with ID benefit from repeated survey administration, by learning how to deal with the survey procedure and enhancement of the cognitive process of answering specific types of questions • Repeated administration or practice trials may improve data quality
Kuijpers et al., 2014, Netherlands[39]	Children aged (6–13 years)	Dominic Interactive *(adaptation of an existing tool or approach)*	Mental health	*Key features*: • See Valla et al.[47] *Response format:* • See Valla et al.[47]	*Aim of the study*: • To examine the reliability and construct validity of the Dominic Interactive in a sample of Dutch children *Methods:* • *n* = 1504 Dutch primary-school children aged 6–13 years completed the Dominic Interactive in small groups at school	• Results showed good to high reliability for all scales • DSM-IV factor structure was confirmed and showed invariance across age and sex	• Gender, ethnicity and language of the computer character could be changed to ensure optimal identification • Administration time: 10–20 min depending on child's age

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Table 2. (continued)

Development and/or validation of studies

Author(s), year, country	Population	Name of tool or approach used	Condition	Key features of tool (including response format)	Aims of the study and methodology	Study findings related to the acceptability/performance/ validity of the tool/approach	Key considerations for design/development/ implementation
Leiner et al., 2010, Mexico[41]	Low-income, low-literacy parents	Pictorial Paediatric Symptom Checklist (PPSC) *(adaptation of an existing tool or approach)*	Mental health	*Key features:* • Pictorial adaption of the 35-item PSC which screens for psychosocial problems in children, with pictorials added to each question • Completed by parents. *Response format:* • 3-point scale: 0 ('never'), 1 ('sometimes') and 2 ('often')	*Aim of the study:* • To compare the sensitivity and specificity of a pictorial version of the PSC with the pictorial version of the 'gold standard' Child Behaviour Checklist (PCBCL) *Methods:* • Retrospective analysis of 240 sets of questionnaires completed by the mothers of children (aged 6–16 years) who attended a community clinic	• The pictorial PSC version showed improved sensitivity and specificity in comparison to previous assessments of the written PSC in similar populations within the United States, demonstrating the value of pictorial descriptions for improvements of health screening in communities with low education levels	• Combining illustrations with text appeared to help parents with low education levels understand the questions • PPSC takes only a few minutes to complete
Leiner et al., 2010, USA[40]	Low-income, low-literacy Hispanic parents	Pictorial Child Behaviour Checklist (PCBCL) *(adaptation of an existing tool or approach)*	Mental health	*Key features:* • PCBCL is a pictorial adaption of the standard 120-item CBCL, with pictorials added for each question • Completed by parents to assess child for behavioural and emotional problems *Response format:* • 3-point scale: 0 ('not true'), 1 ('somewhat or sometimes true') and 2 ('very true or often true'), shaded either clear, medium dark or dark	*Aim of the study:* • To evaluate the psychometric equivalence of the PCBCL and the standard CBCL *Methods:* • Analysis of data collected from parents using CBCL and/or PCBCL whenever they attended routine paediatric appointments during the 2-year study period • Test-retest reliability was determined in $n = 123$ parents who had completed either the CBCL or the PCBCL twice within a period of 100 days (Study 1)	• PCBCL and CBCL showed comparable test-retest reliability, alternate-form reliability and mean problem scores • PCBCL found to be comparable to the CBCL in discriminating between community children attending regular paediatric clinics and children attending an outpatient psychiatric clinic • PCBCL may thus be a viable alternative to the CBCL for parents with communication barriers due to low-literacy levels	• Pictorials were designed by a group of healthcare professionals and a graphic designer • Pictorials were not intended to represent a specific ethnic group but included both male and female representations

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Development and/or validation of studies							
Author(s), year, country	Population	Name of tool or approach used	Condition	Key features of tool (including response format)	Aims of the study and methodology	Study findings related to the acceptability/performance/ validity of the tool/approach	Key considerations for design/development/ implementation
					• Alternate-form reliability was tested in $n = 78$ parents who completed both the CBCL and the PCBCL within a period of 100 days • Effects of version (pictorial vs standard) and language (English vs Spanish) were tested for $n = 2335$ parents. • A clinical sample ($n = 125$) was obtained from parents whose children were being seen in a child psychiatric clinic to test discriminative validity. Gender-matched community sample for comparison: $n = 1869$		
Lytje and Holliday, 2022, Denmark[14]	Bereaved children (4–8 years)	Sand tray interviews *(adaptation of an existing tool or approach)*	Grief	*Key features:* • Combines the use of a sand tray with a semi-structured interview • Sand tray with 60 figurines (including people, ghosts, coffins, wheelchairs and animals) and 40 wooden building bricks	*Aim of the study:* • To develop an interview method for young children that helps them open up about difficult experiences (here: parental loss) using a sand tray and explore its feasibility *Methods:* • Sand tray interviews were carried out with 12 children who had been bereaved within the last 4 years	• Sand tray interviews provided a range of tools through which children could express their views and support needs • Interviews worked well by proposing themes that children were encouraged to discuss. For younger children, alternative phrasings were sometimes needed	• Being able to shift the focus on a friend or fictional character can help if the child is struggling, but important to let the child decide if they want to shift the focus • Asking the child at the end of the interview what they felt would help bereaved others concluded the interview on a positive and empowering note

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Table 2. (continued)

Development and/or validation of studies

Author(s), year, country	Population	Name of tool or approach used	Condition	Key features of tool (including response format)	Aims of the study and methodology	Study findings related to the acceptability/performance/ validity of the tool/approach	Key considerations for design/development/ implementation
				Response format: • Children engage with the sand tray and figurines while telling a story about what they remember from when their parent had been ill or died • If needed, children could switch to talking about a fictive character or friend rather than themselves	• Children were asked to tell a story about what they remember from when their parent had been ill or died while having access to the sand tray box • 4-Part interview guide, focusing on what child remembers from their parents' illness (part 1), their death (part 2), their experience one year on from their parent's death (part 3) and what they think may help other bereaved children (part 4) • Interviews were analysed thematically	• Children tended to use sand tray in two ways: (a) to create a world they became absorbed in which then became the foundation for sharing their experience, communicated through playing in the sand tray, or (b) as a support tool in which figurines were used to help depict what they were sharing verbally	• Generally positive feedback from children that it is a fun and intriguing approach • Highly trained interviewers needed (relational skills, ability to manage safe-guarding issues) • Not recommended for under fours as verbal ability is still required. Some 4-year-olds also get too absorbed in 'normal' play
Martini et al., 1990, United States[42]	Children (most aged 3–4 years)	Preschool Symptom Self-Report (PRESS) *(new tool or approach)*	Depressive symptoms	*Key features*: • 25-Item pictorial self-report instrument for depressive symptoms in children • Each item consists of two very similar drawings, with one illustrating the presence and one the absence of a problem behaviour/symptom, with similarly structured captions describing the drawings, read out by the interviewer *Response format:* • Dichotomous: child responds either by words or by pointing to one of the pictures to respond to the question 'Which one is most like you?'	*Aim of the study*: • To test the psychometric properties of the PRESS. *Methods:* • $N = 84$ families recruited • Children completed the PRESS questionnaire twice in a 24-h period. • Parents and teachers completed a range of measures designed for adult rating of children's depressive symptoms, including a parent-teacher version of the PRESS	• The percentage of children who indicated a symptom as present ranged from 12% to 36% across the 25 items (average: 23%) • Test-retest reliability and internal consistency were high • Parent-teacher version of the PRESS correlated with other established measures designed for adult ratings of children's depressive symptoms at reasonably high levels • No significant correlation between child PRESS scores and parent/ teacher PRESS scores	• Drawings were simple in form and content to reduce distraction, with separate boy and girl versions • To avoid response bias, the position of the 'symptomatic' character on the page varied • Two preliminary items were included to identify children unable to understand how to answer the questions • Average administration time: 15 min • If necessary, testing was paused and completed no later than the following day • No extensive administrator training needed due to dichotomous response format

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Development and/or validation of studies

Author(s), year, country	Population	Name of tool or approach used	Condition	Key features of tool (including response format)	Aims of the study and methodology	Study findings related to the acceptability/performance/ validity of the tool/approach	Key considerations for design/development/ implementation
Mulligan et al., 2023, Ireland[13]	Children (4–13 years)	'My Feelings Form' (MFF) (self-report) *(new tool or approach)*	Mental health	*Key features:* • 14-Item cartoon and emoji self-report form • 10 Items forming two subscales (Emotion Subscale and Function Subscale), and two stand-alone items of clinical relevance • I-statements with simple, age-appropriate language and imagery, with a visual and verbal element to questions/items *Response format:* • 5-Point Likert scale with emojis (increasing in size from 'never' to 'most of the time')	*Aim of the study:* • To develop and validate an age-appropriate self-reported outcome measure for children's mental health *Methods:* • Four-stage development process, co-producing and user-testing the form • Initial 25 item set was reduced to 14 in discussion with mental health professionals • Final version tested with $n = 314$ primary school children (4–13 years) at two time points within a day and $n = 25$ children receiving mental health support (7–13 years) • Analysis: test-retest reliability, exploratory factor analysis, ROC curve	• In the school sample, data from children under 7 and from the autism support class were excluded from the analysis as many required helps with reading or completing the form which teachers couldn't provide consistently in the classroom setting • Clinical group scored significantly higher than the school group for the mean total score and most items • Factor analysis identified a two factor structure with an Emotion Subscale and Function Subscale. • Acceptable internal consistency and test-retest reliability • Cut-off of 12 has a sensitivity of 80% and a specificity of 60%	• Responses should be on a 3–5 point scale. Children preferred emoji of increasing size rather than increasing numbers of emoji • Cartoon images in final draft represent mixed abilities, gender and cultural diversity • Data collection for younger children (six and younger) may be possible in an individual setting or in small groups with dedicated 1:1 support

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Development and/or validation of studies

Author(s), year, country	Population	Name of tool or approach used	Condition	Key features of tool (including response format)	Aims of the study and methodology	Study findings related to the acceptability/performance/ validity of the tool/approach	Key considerations for design/development/ implementation
Raczka et al., 2020, United Kingdom[43]	Adults with mild-to-moderate ID	Mini-MANS-LD *(adaptation of an existing tool or approach: (Maslow Assessment of Needs Scale)*	QOL	*Key features:* • 9-Item pictorial QOL questionnaire, adapted from the 19-item MANS-LD measure • Developed to be used alongside the EQ-5D (health-related QoL questionnaire) to capture all important aspects of self-reported QOL of people with ID *Response format:* • 5-Point Likert scale, with verbal labels, smiley faces and pictures	*Aim of the study*: • To validate the Mini-MANS-LD as a QOL measure for people with ID *Methods:* • 33 adults with mild-to-moderate ID completed three QOL measures: Mini_MANS_LD, EQ-5D-LD (Beta) and the PWI-ID • All measures were adapted with photo symbols and colour-coded smiley faces. Scripts were developed to ensure consistent clarification of problematic concepts and the 5-point response scale during administration • Repeat assessment after 3 months	• Acceptable psychometric properties, including significant correlation with the PWI-ID, suggesting moderate congruent validity and acceptable internal consistency • Significant correlation with the adapted EQ-5D-LD Beta's overall single health state score • Administrators rated the Mini-MANS-LD as easier to administer and more acceptable to service users than the PWI-ID • No significant difference in the Mini-MANS-LD scores between the two assessments	• Visual content developed with input from speech therapists and people with ID • 5-Point response scale presented in two stages if needed, breaking it down into a 3-point scale initially • Designed to be used with the EQ-5D-LD, completing both measures took on average 12 min

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Development and/or validation of studies

Author(s), year, country	Population	Name of tool or approach used	Condition	Key features of tool (including response format)	Aims of the study and methodology	Study findings related to the acceptability/performance/ validity of the tool/approach	Key considerations for design/development/ implementation
Roysircar et al., 2019, Haiti[44]	Children and adolescents (3–14 years)	House Tree Person Test (HTP) *(adaptation of an existing tool or approach)*	Resilience and vulnerability (trauma)	*Key features:* • Projective test that involves freehand drawings of a house, a tree and a person to capture resilience and vulnerability • Due to the neutrality and familiarity of a 'house', a 'tree' and a 'person', individuals are believed to project their feelings and psychological state onto the prototypical images • Culturally adapted from the original HTP test *Response format:* • Freehand drawings of a house, person and tree. Objectively scored with a scoring key	*Aim of the study:* • To examine the validity of the adapted HTP test and its dimensionality (in the context of assessing children's adjustment to the 2010 earthquake in Haiti) *Methods:* • *N* = 88 children were assessed in small groups • Quantitative scoring of the HTP involved dichotomous scoring (1 or 0 if a specific test criterion was present in the drawing or not), with scores summed in resilience and vulnerability indices • Additional measures: Hare Area Specific Self-Esteem Scale (HSS), Child Report of Posttraumatic Symptoms (CROPS) and Child Self-Concept Scale (SCS)	• An exploratory factor analysis of HTP scores indicating three factors: HTP Resilience-Vulnerability Integrated, House Feeling Safe and Person Feeling Unloved • The three dimensions of the HTP scores had strong internal consistency reliabilities • HSS and SCS correlated significantly, suggesting convergent validity for the two measures. HTP Resilience-Vulnerability Integrated correlated positively with the SCS and negatively with CROPS • HSS did not correlate with the three HTP dimensions, suggesting discriminant validity for self-esteem and the culturally adapted HTP test	• Children were reassured that there is no right or wrong house/tree/person when drawing • Children were reassured that that their drawings and answers would not be shown to their parents or friends • 15 min were allotted for each drawing

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Development and/or validation of studies

Author(s), year, country	Population	Name of tool or approach used	Condition	Key features of tool (including response format)	Aims of the study and methodology	Study findings related to the acceptability/performance/ validity of the tool/approach	Key considerations for design/development/ implementation
Simpson et al., 2021, Australia[48]	Autistic children (5–8 years)	Computer-Assisted Interview (CAI) *(new tool or approach)*	Anxiety	*Key features:* • Novel approach to interviewing children about their anxiety, including visuals to provide context • Delivered by PowerPoint presentation, including (a) an assent slide with traffic light symbols; (b) the response slide containing 15 images of possible responses; (c) three situation slides covering 12 anxiety situations; (d) a question mark slide so children can identify other anxiety provoking situations; (e) a feedback slide so children can rate the activity; and (f) a thank you slide *Response format:* • Verbally and by pointing	*Aim of the study:* • To utilise a CAI procedure incorporating visual prompts to elicit the viewpoints of children about their experiences of anxiety *Methods:* *Interview protocol development:* • Collaboratively by a research team including a research consultant (an adult on the autism spectrum) • 12 anxiety situations identified from parent/ teacher-reported questionnaires for young children with autism • 14 options for possible child responses were selected based on parent descriptions of anxiety presentations in previous qualitative research, with additional 'I do something else' option to allow for alternative responses *Testing:* • Ten children diagnosed on the autism spectrum, aged 5–8 years, completed the interview • Directed content analysis was used to explore the interview data (using pre-determined codes)	• A wide range of situations that trigger anxiety, and responses to anxiety, were reported across the participant group • Presenting children with a range of situations prompted them to consider their own levels of anxiety in specific situations rather than on a broader scale • But, identifying pictorial representations of internal states (the responses) was challenging, and high number of response options may have been overwhelming for some • Use of a CAI may be an effective method to support self-report of anxiety-related experiences for young children with autism	• Information gathered from parents about the words their child might use to express anxiety, so familiar language could be used in the interview • Choice; Children could choose to complete online or in person and with or without parent and could respond verbally or by pointing • The visuals and flexibility of the computer interface supported participation, with positive feedback from children (collected with smileyometer at end of interview) • Average interview time: 20 min

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Development and/or validation of studies

Author(s), year, country	Population	Name of tool or approach used	Condition	Key features of tool (including response format)	Aims of the study and methodology	Study findings related to the acceptability/performance/ validity of the tool/approach	Key considerations for design/development/ implementation
Valla et al., 1994, Canada[45]	Children (6–11 years)	Dominic *(new tool or approach)*	Mental health	*Key features*: • Cartoon-based notebook questionnaire, consisting of 99 drawings of a child called Dominic, depicting situations corresponding to criteria of seven DSM-III-R diagnoses of mental health disorders • Images used to help children convey feelings they may otherwise be reluctant to acknowledge verbally *Response format:* • Children are asked if they act/feel/think/are like Dominic. Yes/no response recorded	*Aim of the study*: • To develop and test the validity and reliability of a pictorial instrument to assess mental health disorders in 6- to 11-year-old children *Methods:* • Comprehension checks for all drawings with $n = 150$ primary school children • 62 children from the general population and 42 clinically referred children completed the final Dominic version twice within a week • Validity was examined by comparing general population and outpatient samples (combining clinical referral with parent assessment) and against clinical judgement from child psychologists	• 159 drawings were retained after the initial comprehension check, with 99 retained in the final version. Eliminations were due to a lack of discriminative power or to shorten administration time • Acceptable test-retest reliability • Internal consistency ranged from acceptable to very good • Clinically referred and non-referred children samples show significant differences • Good criterion validity against clinical judgement	• Administration time: 15–20 min • Neutral introductory picture shown first to verify understanding • Gender of depicted child kept ambiguous • Random order of pictures and intermixing pictures displaying abnormal behaviours with a small number of pictures depicting normal situations helped diminish biased identification with an abnormal hero. Also avoids child being bombarded with negative questions
Valla et al., 1997, Canada[46]	Children (6–11 years)	Dominic-R *(adaptation of an existing tool or approach)*	Mental health	*Key features*: • Pictorial questionnaire, based on the original Dominic (see Valla et al.[45] above), with specific verbal questions introduced to offer an auditory symptom description to reduce uncertainty around how children interpret the presented drawings	*Aim of the study*: • To test the reliability of the Dominic-R, a questionnaire combining visual and auditory stimuli	• Most symptoms yielded fair to excellent kappas and symptoms with low kappas were associated with low base-rates	• Inside the Dominic-R booklet, sentences are printed at the top and bottom of the pictures. Interviewer seated in front of the child can read them aloud while looking at the upside-down pictures, while the child who hears the sentence can read it at the bottom of the picture they are viewing

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Development and/or validation of studies

Author(s), year, country	Population	Name of tool or approach used	Condition	Key features of tool (including response format)	Aims of the study and methodology	Study findings related to the acceptability/performance/ validity of the tool/approach	Key considerations for design/development/ implementation
				Response format: • Children are asked if they act/feel/think/are like Dominic. Yes/no response recorded	*Methods:* • $n = 340$ community children aged 6–11 years were individually assessed with the Dominic-R and re-tested 7–12 days later.	• ICC compared favourably with those obtained with other measures in different samples • ICC values observed with the Dominic-R appeared increased compared to the original Dominic (see Valla et al.[45]), suggesting a beneficial effect of combining the drawings with additional verbal input	• Dominic character may be interpreted as a boy or a girl, allowing assessment of both genders • As per original tool, symptoms are randomly mixed and normal situations are intermixed with SDM-III-R abnormal behaviours
Valla et al., 2002, France[47]	Children (6–11 years)	Dominic Interactive *(adaptation of an existing tool or approach)*	Mental health	*Key features*: • A computerised, interactive adaptation of the Dominic questionnaire (see Valla et al.[45,46]), reflecting the emotional and behavioural content of DSM-IV symptomatology • Voice-over describing the symptoms asks child whether they feel or do what Dominic is feeling/ doing • Blend of pictures, sound and child-computer interaction fosters active involvement and multimedia presentation engages attention *Response format:* • Child responds by clicking on 'yes' or 'no' boxes with the mouse	*Aim of the study*: • To study the appropriateness of the Dominic Interactive for use with French children, including the appropriateness of cut-off points (as originally developed in the United States). *Methods:* • CD-ROM-based Dominic Interactive was completed by $n = 253$ community children, and by $n = 150$ children from in- and outpatient clinics • Clinical judgements obtained for the clinical sample	• Prevalence estimates differed significantly between the community and clinical sample for every diagnosis (based on the previously determined cut-off points) • For referred children with and without a specific clinical diagnosis, significant differences between corresponding Dominic Interactive scores were found for every diagnosis • These findings are in line with findings from US samples	• According to gender, Dominic is either depicted as a boy or a girl • Introductory pictures show children how to use the software • Child-computer interactions may induce more spontaneous and less socially desirable responses than adult interviewer interactions • Quick administration time: 10–15 min • Good parental acceptability of the instrument and positive clinician feedback • Children enjoyed the computer activity and could report fears, etc. they may otherwise have been too ashamed to talk about

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Table 2. (continued)

Observational studies

Author(s), year, country	Population	Name of tool or approach	Condition	Key features of tool (including response format)	Aims of the study and methodology	Study results (relating to effectiveness of tool or approach)	Key considerations for design/implementation of tools/approaches
Klingman, 2010, Israel[49]	Fourth-grade children (average age: 9 years)	Bar-Ilan Picture Test for Children *Adaptation of an existing tool or approach*	Coping, collective grief and trauma	*Key features:* • Situation-specific adaptation of the Bar-Ilan Picture Test for Children • Semi-projective instrument: open-ended questions relating to pictures of children, parents and teachers in natural settings (e.g. in school, at home). Children asked about what they think the people, example are doing/talking about/feeling • Pictures designed to elicit children's perceptions, attitudes, anxieties and fears about roles and facets of home, school and social networks *Response format:* • Not specified	*Aim of the study:* • To investigate children's affective reactions and coping in response to the assassination of the Israeli Prime Minister in 1995 *Methods:* • Test was group-administered to a total of $n = 229$ fourth-grade children in classrooms on the second day after the assassination • Responses coded using 21 pre-determined coding categories. 19 of the categories were divided into five factors ('Perceived Social Support', 'Emotional Expressiveness', 'Perceived Parents' Anxiety', 'Coping and Adaptation' and 'Optimism'). For each category, judges rated each child on a 4-point scale from 1 = very low to 4 = very high • Each child was also rated for anxiety on a 3-point scale and the number of statements indicating bereavement was determined	*Test properties:* • Mean across judges agreement was high • Internal consistency for the five factors ranged from acceptable to very good	• Six (of the original test's nine) pictures were used for this study • Separate test versions for boys and girls • Judges received intensive training in the scoring procedures • Projective procedures appear to engage children's interests, ensure cooperation and high levels of motivation and minimise evaluative anxiety

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Table 2. (continued)

Observational studies

Author(s), year, country	Population	Name of tool or approach	Condition	Key features of tool (including response format)	Aims of the study and methodology	Study results (relating to effectiveness of tool or approach)	Key considerations for design/implementation of tools/approaches
Seo et al., 2021, South Korea[50]	Children and adolescents with psychiatric disorders (6–18 years; average age of child participants: 9.5 years)	COVID-19 Visual Analogue Scale for Emotion (C-VASE) *(new tool or approach)*	Emotional states	*Key features:* • C-VASE evaluates individuals' global emotional state and six specific emotional states (e.g. afraid, confused, sad) • For the specific emotional states, a face picture depicting each emotion is shown next to the response scale *Response format:* • Global emotional state: rated on a scale from 0 (most active state) to 100 (completely exhausted state), with reference points divided into 10 units • Specific emotional states: rated on a horizontal line using a 7-point Likert scale, ranging from 'not feeling at all' to 'moderate feeling' to 'severe feeling'	*Aim of the study* • To investigate changes in interpersonal relationships, behavioural patterns, and emotional states of children and adolescents with psychiatric disorders and their caregivers immediately after the COVID-19 outbreak in 2019. *Methods:* • $N = 147$ paediatric psychiatric patients and $n = 147$ caregivers completed the Survey for Outing and Time Usage for Child, Adolescent and Parents (SOT-CAP) and the C-VASE during outpatient visits. Ratings were obtained for before and after the outbreak of the pandemic	• C-VASE ratings captured significant before/after changes and group differences in the reported emotional states, including differentiating between participants with externalising versus internalising disorders • Good levels for reliability found for both the global emotional state and the specific emotional states	• Interviewer guided the child to mark the most appropriate place for their condition if they could not understand the written question • Possibility of a recall bias as evaluation of the variables was dependent on the children's recollection
Walker, 1988, USA[51]	Families of children with cancer, including siblings (7–11 years)	Interview with puppet play, family drawings, cartoon storytelling used to facilitate communication *(adaptation of an existing tool or approach)*	Stress and coping	*Key features:* • Interviews with puppet play, family drawings, cartoon storytelling and sentence completion test used to enhance communication regarding coping efforts *Response format:* • Verbal	*Aim of the study:* • To identify and describe cognitive and behavioural coping strategies used by siblings of paediatric oncology patients *Methods:* • Parent data were obtained from an interview and a questionnaire • Sibling data were obtained through two interviews, using puppet play and kinetic family drawings in interview 1 and a cartoon storytelling and a sentence completion task in interview 2 to enhance communication. A limited number of direct questions were also included • Interviews were analysed using content analysis	• Majority of children responded well to drawing pictures, playing with puppets and quickly began talking about what life had been like for them since sibling's diagnosis	• Puppet play, drawings and cartoon storytelling are projective techniques that allowed children to discuss experiences in third person (e.g. puppet play: if the puppet's brother was sick, the interviewer would ask what puppet was feeling and what it might do; cartoon storytelling: a mouse comes home from school and finds nobody home; children being asked how the animal might feel and do about the situation) • Puppet play and drawings helped tailor interviews to verbal ability, needs and developmental level

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Table 2. (continued)

Intervention studies

Author(s), year, country	Population	Name of tool or approach	Condition	Key features of tool (including response format)	Aims of the study and methodology	Study results (relating to effectiveness of tool or approach)	Key considerations for design/implementation of tools/approaches
Lake and MacHale, 2021, Ireland[52]	Young adults with IDs (18–22 years)	• Visual Stress Measure *(New approach or tool)*	Mental health and stress	*Key features:* • Visual stress measure: smiley faces depicting stress level with verbal explanations (ranging from 'Feeling great!' to 'I need some help!'). • Also used CORE-LD: see Brooks et al.[36] *Response format:* • Visual stress measure: 5-point Visual Analogue Scale with smiley faces	*Aim of the study:* • To evaluate the effectiveness of a MBSR group intervention *Methods:* • $N = 7$ participants with mild IDs participated in an 8-week MBSR group • Pre- and post-intervention measures obtained: CORE-LD and a self-esteem scale • Visual stress measure was used to monitor weekly stress levels	• Pre- versus post-intervention CORE-LD scores showed significantly improved overall well-being (trend for improved self-esteem but not significant) • Visual stress measurements indicated large improvements in stress levels for participants reporting high stress levels at start of intervention	• Visual stress scale was also used to facilitate group discussion: participants were invited to share stressful situations they had experienced during the week and what mindfulness exercises they had practiced in response to these situations
Vishwanatha and Hirisave, 2008, India[53]	Children (9–12 years)	• Narrative approach *(adaptation of an existing tool or approach)*	Mental health	*Key features:* • Narrative approach: Therapeutic approach that emphasises externalisation, acknowledgment of a new self-description and re-authoring a new narrative, influencing questions, art and play metaphors and written texts • Study also used PICA: see Ernst et al.[37] *Response format:* • Not specified	*Aim of the study:* • To examine the feasibility of using the narrative approach for managing childhood mental health problems *Method:* • 10 school children with the highest scores on Strength and Difficulties Questionnaire were selected for the study. 5 were assigned to the experimental group ($n = 5$) and received a 10-session intervention based on the narrative approach. 5 were assigned to the control group • Pre- and post-intervention measures obtained: SDQ (Stengths and Difficulties Questionnaire), PICA (see Ernst et al.[37]), Children's Global Assessment Scale and an open interview	• Child problem behaviours reduced post-intervention (both on teacher and self-report), suggesting that the narrative approach may be useful for addressing the mental health needs in this age group	• Dolls, puppets, artwork, drama, stories and letters were used to introduce narrative therapy concepts to children • Art and play metaphors were used depending on developmental stage and individual preference. Influencing questions used to strengthen the non-dominant story

HADS: Hospital Anxiety and Depression Scale; CoRG: Collaborative Research Group; ID: intellectual disabilities; PSC: Paediatric Symptom Checklist; CBCL: Child Behaviour Checklist; ICC: interclass correlations; MBSR: mindfulness-based stress reduction; PWI-ID: Personal Wellbeing Index–Intellectual Disability.

Table 3. Semi-projective techniques exploring grief and coping with family illness.

The sand tray approach was used in a research interview involving open-ended questions exploring child grief and bereavement (e.g. 'Tell me a story about what you remember from when your parent had been ill or died') to which children could respond in first or third person or switch to talking about a fictive character or friend using the sand tray.[14]
An illustrated open-ended questionnaire was used to assess coping and collective trauma and grief in Israeli schoolchildren following the assassination of their prime minister. Open-ended questions relating to six specific scenario-based pictures (e.g. children in a typical classroom, playground, at home) were used: 'What are they doing? What are they talking about? What are they saying? How do they feel?'[49]
Puppet play, family drawings and cartoon storytelling were used in an interview approach where projective play allowed children to discuss their experiences of coping with their sibling's illness in the third person (e.g. puppet play: if the puppet's brother was sick, the interviewer would ask what the puppet was feeling and what he might do about those feelings; cartoon storytelling where a mouse comes home from school and finds nobody home; children were then asked how the animal might feel and what the animal might do about the situation).[51]

in five studies. These usually used a small number of 'open-ended' questions to elicit responses,[44,49] with sand trays, pictures, drawing and puppetry also used to qualitatively explore views and experiences.[14,49,51,53] The semi-projective approaches were considered to be a less confrontational and direct way of dealing with sensitive topics,[14] to engage children's interest, cooperation and motivation, whilst minimising anxiety.[49] More detailed examples of these approaches are provided in Table 3.

Visual representations and imagery

All 22 articles reported on the way in which imagery was used in the measure (or administration of it) and why. Imagery was commonly used to support understanding and give context to the question,[13,37,48,49] to act as a tangible visual aid,[14,38,51] to provide a resource for communicating a response,[34,37,43,48] to give an accessible way to deliver the question itself[37,40,41,45] and to complement other modes of communication, such as questions being read aloud, which were used to help reduce ambiguity in the images that the children were focusing on.[46,47]

Different approaches were used to develop the imagery. In two studies, children were asked to interpret and explain preliminary selections of pictures, with their comments used to inform modifications or the removal of images.[37,45] Other approaches included consultation with colleagues who were familiar with a specific, longer version of the tool,[36] collaborative exercises between children, professionals and a cartoonist to create the pictures,[13] and a collaboration between a professional illustrator and adults with LD.[38]

Pictures/symbols in cartoon form were most commonly used to illustrate questions, ,[13,35–37,39–42,45–47,49] with photographs used in three measures.[34,43,48] Examples included pictures depicting children expressing possible responses to a scenario (e.g. crying, hiding),[48] adults portrayed in different scenarios which were illustrative of the question and response options,[43] and variations of a face changing from sad to happy.[34] Additional mediums were also sometimes used to support the visuals such as computer assisted/video approaches[34,39,47,48] and sign language.[38] Tangible mediums of sand trays/sand tray figures[14] and puppetry[51] were used in interview-style approaches to support children telling stories via an entity separate from themselves (i.e. the puppet or figure). One therapeutic approach also used dolls and puppets to introduce therapeutic concepts to children.[53] Drawing was also used in the one wholly projective measure that was included. This required responses to be given in the form of freehand drawings of a house, a tree and a person which were then quantitatively scored using a scoring key.[44]

Imagery took various forms including cartoons of people that were to some degree relatable (cultural, gender, ethnicity, etc.),[13,35–37,49] cartoons that were intentionally 'gender ambiguous'[45,46] or could be changed to match gender,[39,47,49] or symbolic representations such as smileys and tick/cross options.[36,43]

Response options

A variety of response options were used in the measures. These included choices of simple, binary 'Yes/No' answers,[35,37,39,45–47] selections of pictures which represented different response options,[42,48] Visual Analogue Scales that require the user to choose a point on a visual scale[13,36–38,40,41,43,50,52] and open-ended responses (requiring evaluation via thematic analysis[14] or content analysis[48,51]). Rating scales were also commonly used,[13,36–38,40,41,43,52] mostly comprising 3 or 5 points, with the exception of one 7-point scale.[50] Following community consultation, it was notable that one adapted measure moved from a 5 to 3 point scale, to ensure feasibility and accessibility for the target LD population.[36]

Across the measures there were multiple images or objects used to help users understand and communicate their response. These ranged from object representations, for example, beakers depicting frequency of feelings (an empty beaker representing 'not at all', half-full beaker for 'sometimes' and a full beaker for 'a lot'),[36] and cartoon characters depicting three different frequencies of a symptom ('never', 'sometimes', 'often'),[41] or arms shown at

different widths to represent 'how much'.[37] The European Health Interview Surveys–Quality of Life (EUROHIS-QOL BSL) incorporated an additional experimental approach in the form of a 'light response' (an animated lightbulb) that could be adjusted (in brightness) to communicate the users perceptions of their QOL.[38] Smiley faces[38] and situation-specific questions that incorporated a choice of responses/behaviours in picture form were also used.[42,48] The tangible mediums of sand trays and drawing represented alternative forms of response, alongside the talk of participants.[14,44]

Psychometric properties, utility and feasibility

Most of the included studies evaluated at least some of the psychometric properties of the measures. This commonly included establishing test-retest reliability[13,35,36,38,40–42,45,46] and/or internal consistency[13,34–37,39,42–45,49] with most findings within the range of acceptable to very good. A small number of studies carried out either exploratory[13,44] or confirmatory[39] factor analyses to examine the underlying factor structure of measures. For some measures, convergent validity was confirmed through correlation with related instruments[34,38,43] while criterion validity against clinical judgement was also demonstrated.[45] The ability to discriminate between community and clinical samples when comparing example mean scores or prevalence estimates[13,40,45,47] was also tested for some measures, with two studies reporting data on the sensitivity and specificity of measures based on suggested cut-off points.[13,41]

Two studies directly compared the psychometric properties of a measure's pictorial adaptation with the original tool, confirming equivalence/comparability.[40,41] A further three studies explored correlations between self-report measures and proxy measures from others. Two studies found poor agreement between pictorial self-report tools and proxy measures obtained from parents and/or teachers,[35,42] while a third study reported mixed results for the agreement between the adapted sign language based self-report tool and proxy measures from professional carers.[38] A fourth qualitative study also found high levels of disagreement between child- and parent-identified coping strategies.[51] Four studies demonstrated measures' ability to detect change over time, such as pre- versus post-intervention[36,37,52,53] or current versus retrospective ratings.[50]

Qualitative evaluations provided evidence for the utility and feasibility of the measure(s) in practice. Visuals were seen to provide helpful context and aid participants' understandings of questions,[41,48] as well as aiding information processing and engagement.[14,35,37,45,48] Projective or semi-projective techniques were also seen as enabling the participant to speak about their experience in the third person (through the character).[44,49,51] Feedback from parents/clinicians anecdotally indicated the acceptability of measures, including the relatability of the imagery used (incorporation of different genders, ethnicities and cultures).[13,35,39,47] Other findings relating to implementation included the potential need for repeated administration of a measure to familiarise the user with the process, aiding cognitive ability and the potential for engagement (for adults with LD).[38]

Limitations relating to accessibility were noted in three studies; firstly in relation to children needing greater support and direction than is possible in the intended group setting (e.g. very young children and those with autism).[13] Secondly where younger children (under 5 years) may not possess the ability to comply with the verbal instructions on the questionnaire,[37] or thirdly and similarly have the degree of verbal ability needed to engage with the interview process and not become engrossed in the play element of the sand trays.[14]

Discussion

This scoping review has mapped the evidence for clinical and research tools or interviews which use non-verbal methods to communicate with young children or people with additional learning or communication needs, for the purposes of assessing or supporting their grief, mental health or well-being. While the review confirms the absence of accessible (non-verbal) child grief tools, 21 relevant measures or approaches were identified across predominantly mental health conditions, populations and settings. By systematically mapping and describing the methodological features of these tools and approaches, this review has provided a helpful evidence base for the design and development of our own accessible grief tool. The review findings will therefore also be useful for researchers planning similar endeavours, or for those interested in selecting suitable measures in these fields of research or clinical practice.

The key features of the different tools and approaches that we identified were categorised into four main themes which represent the different options and considerations available to researchers and clinicians interested in developing or selecting appropriate tools. These included; the collaborative processes involved in the development and adaptation of pictorial measures; the simplification of language, question and questionnaire structure (e.g. using direct or indirect questions); ways of incorporating visual representation, imagery and other mediums for facilitating understanding, identification and expression (including being relatable to specific or diverse groups of participants); and selecting accessible verbal and visual response options (e.g. using visual scales, binary responses or three point frequency/quantity scales).

This synthesis demonstrates the diverse ways that visual and other mediums can be used to support the delivery of an assessment tool or interview-style conversation, whilst also enabling more accessible response options. The positive evaluation results that were reported indicate the acceptability and effectiveness of these approaches for engaging with children and adults with learning or

communication challenges when exploring sensitive topics such as grief and mental health, which can in themselves be difficult for children to discuss.[6,14] They are also consistent with previous research and theory which has described the benefits of alternative non-verbal, projective/semi-projective approaches such as illustrated stories, art therapy and play therapy for supporting children experiencing bereavement, trauma or mental health problems,[8,10,16–19] demonstrating how these traditionally non-directive therapeutic approaches can also be applied in more directive ways, incorporating verbal instructions, questioning and methods of analysis. The benefits of the collaborative approaches used to develop the images and question items in many of these studies[13,36–38,40,42,43,45,48] also support the growing emphasis on community co-production and patient and public involvement in research, particularly when working with children or minoritised communities, whose perspectives, understandings and interpretations may significantly differ from those of research and clinical teams.[54,55]

Given our specific interest in grief, and the recognised importance of using validated assessment tools for determining level of need and appropriate intervention,[1,6] the absence of accessible, structured child grief tools is notable, and consistent with other recent review findings which identified only fully verbal/written examples of child grief tools.[11,12] Of the two grief related approaches that were included, one was focused on qualitatively exploring coping and collective grief and trauma following the assassination of the Israeli prime minister,[49] while the other used sand trays as part of a semi-structured interview to explore child grief experiences.[14] Although very different from each other (and the predominantly mental health tools considered in the review), both studies suggest the value of using visual imagery or sand tray figures to depict different social scenarios, combined with open-ended questions which encourage children to tell or show their story or feelings. Interestingly, both also provided the option of responding in the third or first person (i.e. speaking about themselves or projecting their thoughts onto the character in the picture or sand tray), with the benefits of these semi-projective approaches similarly described in the wider literature.[8,10,16,17] Therefore, although the evidence for grief-specific tools is lacking, the common features of these approaches, alongside those from the majority 'questionnaire' based approaches used in mental health assessments, can provide a helpful and important steer to this underdeveloped area of research.

Limitations of this scoping review and implications for further research

The articles in this scoping review varied in their purpose, ranging from development and/or validation studies to observation and intervention studies. They focused on multiple areas of mental health and well-being and incorporated different styles of delivery and evaluation. This resulted in some inconsistencies in the detail available across the papers with notable gaps in some study reports. For example, very few studies validated new measures against other established measures or compared scores in community versus clinical samples, highlighting that some measures may benefit from more comprehensive and rigorous testing. However, as this was a scoping review focused primarily on mapping and describing available tools, we did not conduct a rigorous appraisal of the quality of the evidence for included measures, which limits the conclusions that can be drawn on their effectiveness. Future systematic reviews are needed to establish the effectiveness of these measures by appraising study quality and their psychometric properties, using recommended tools such as COSMIN checklists.[56,57] In doing so, however, it will also be important to critically consider whether all components of these check lists can be reasonably applied to research developing these more accessible measures and whether any modifications of the checklists might also be needed going forwards. If possible, future reviews should also include book chapters and studies published in languages other than English. Due to resource constraints, this was not possible in this review but would likely have increased the yield of relevant approaches and studies for consideration.

Limitations in the utility and feasibility of measures were inconsistently reported across the included studies. Study limitations that were identified included lack of agreement between non-verbal self-report measures and proxy-report measures (obtained from parents)[35,42] and the inappropriateness of tools or approaches for very young children.[13,14,37] The older age ranges used in some of the other measures included in this review might also mean that they are not appropriate for those with the most limited verbal abilities. More research on the best methodological approaches for working with these specific populations clinically and in research would therefore be helpful, and could address the noted absence of research with bereaved young children and people with SEN.[6,58]

Finally, although the articles included are relevant to our field of interest, the absence of any validated grief measure or tool incorporating non-verbal communication methods strongly affirms the need for such tools, including the pictorial version of the Children's Attitude to Grief Scale which we are currently developing. While there is a tradition of using creative methods in bereavement support (e.g. see archives of https://www.bereavementjournal.org/index.php/bcj), the absence of empirical data for these approaches meant that they could not be included in this review. These review findings therefore also point strongly to the need for greater evaluation and reporting of 'non-verbal' approaches which are being used to assess and support bereaved children and adults with additional needs.

Conclusion

The range of approaches covered in the review shows that there is likely 'no one size fits all' approach for engaging with young children and those with limited verbal abilities in research and practice. However, the common features, benefits and limitations that have been identified in the development, design and implementation of these tools or approaches provide helpful pointers for researchers or clinicians considering designing or selecting such measures for use in their research or practice. A context/condition/person centred approach in the development of measures (both novel and adapted versions) is essential, with the benefits of collaboration with children, parents and professionals well demonstrated across the studies. While all of the measures and approaches included in this review required some level of verbal interaction or instruction, they showed themselves to be accessible to diverse groups of people with more limited verbal communication, and who therefore seem likely to benefit from these hybrid (verbal and non-verbal) approaches. This review accordingly provides an encouraging foundation for further developments in this field.

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ORCID iDs

Noreen Hopewell-Kelly https://orcid.org/0000-0002-0699-0178
Silvia Goss https://orcid.org/0000-0002-9728-5756
Timothy Pickles https://orcid.org/0000-0001-7743-0234
Lucy Selman https://orcid.org/0000-0001-5747-2699
Emily Harrop https://orcid.org/0000-0003-2820-0023

Ethical considerations

All papers included in the review reported on appropriate ethical clearance in their work. No further ethical considerations were required.

Author contributions

Noreen Hopewell-Kelly: Conceptualisation; Data curation; Formal analysis; Investigation; Methodology; Project administration; Validation; Visualisation; Writing – original draft; Writing – review & editing.
Silvia Goss: Conceptualisation; Data curation; Formal analysis; Investigation; Methodology; Project administration; Validation; Writing – original draft; Writing – review & editing.
Mala Mann: Formal analysis; Investigation; Methodology; Software; Supervision; Visualisation; Writing – original draft; Writing – review & editing.
Linda Machin: Conceptualisation; Funding acquisition; Methodology; Writing – review & editing.
Timothy Pickles: Conceptualisation; Funding acquisition; Methodology; Writing – review & editing.
Freya Field: Conceptualisation; Methodology; Writing – review & editing.
Letizia Perna: Conceptualisation; Funding acquisition; Methodology; Writing – review & editing.
Lucy Selman: Conceptualisation; Funding acquisition; Methodology; Writing – review & editing.
Emily Harrop: Conceptualisation; Data curation; Formal analysis; Funding acquisition; Investigation; Methodology; Visualisation; Writing – original draft; Writing – review & editing.

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Data availability statement

All papers included in the review are referenced. The protocol for the review was registered on The Science Framework platform on 9 May 2024 and can be accessed at https://doi.org/10.17605/OSF.IO/UB7ZC.

Supplemental material

Supplemental material for this article is available online.

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Appendix

Table A1. Completed (PRISMA-ScR) checklist.

Section	Item	PRISMA-ScR checklist item	Reported on page #
Title			
Title	1	Identify the report as a scoping review.	Page 1
Abstract			
Structured summary	2	Provide a structured summary that includes (as applicable): background, objectives, eligibility criteria, sources of evidence, charting methods, results and conclusions that relate to the review questions and objectives	See Abstract on Pages 1 and 2
Introduction			
Rationale	3	Describe the rationale for the review in the context of what is already known. Explain why the review questions/ objectives lend themselves to a scoping review approach	Pages 2 and 3
Objectives	4	Provide an explicit statement of the questions and objectives being addressed with reference to their key elements (e.g. population or participants, concepts and context) or other relevant key elements used to conceptualise the review questions and/or objectives	Pages 3–5
Methods			
Protocol and registration	5	Indicate whether a review protocol exists; state if and where it can be accessed (e.g. a Web address); and if available, provide registration information, including the registration number	Page 3
Eligibility criteria	6	Specify characteristics of the sources of evidence used as eligibility criteria (e.g. years considered, language and publication status), and provide a rationale	Page 6
Information sources	7	Describe all information sources in the search (e.g. databases with dates of coverage and contact with authors to identify additional sources), as well as the date the most recent search was executed	Page 5
Search	8	Present the full electronic search strategy for at least one database, including any limits used, such that it could be repeated	Table A2, referenced on Page 5
Selection of sources of evidence	9	State the process for selecting sources of evidence (i.e. screening and eligibility) included in the scoping review	Page 6
Data charting process	10	Describe the methods of charting data from the included sources of evidence (e.g. calibrated forms or forms that have been tested by the team before their use, and whether data charting was done independently or in duplicate) and any processes for obtaining and confirming data from investigators	Page 8 and Table A3
Data items	11	List and define all variables for which data were sought and any assumptions and simplifications made	Table A3 – data extraction template
Critical appraisal of individual sources of evidence	12	If done, provide a rationale for conducting a critical appraisal of included sources of evidence; describe the methods used and how this information was used in any data synthesis (if appropriate)	Not required for scoping review
Summary measures	13	Not applicable for scoping reviews	Not applicable
Synthesis of results	14	Describe the methods of handling and summarising the data that were charted	Page 8
Risk of bias across studies	15	Not applicable for scoping reviews	Not applicable
Additional analyses	16	Not applicable for scoping reviews	Not applicable

(continued)

Table A1. (Continued)

Section	Item	PRISMA-ScR checklist item	Reported on page #
Results			
Selection of sources of evidence	17	Give numbers of sources of evidence screened, assessed for eligibility and included in the review, with reasons for exclusions at each stage, ideally using a flow diagram	PRISMA diagram Page 7
Characteristics of sources of evidence	18	For each source of evidence, present characteristics for which data were charted and provide the citations	Table 2 (Pages 10–24)
Critical appraisal within sources of evidence	19	If done, present data on critical appraisal of included sources of evidence (see item 12)	Not required for scoping review
Results of individual sources of evidence	20	For each included source of evidence, present the relevant data that were charted that relate to the review questions and objectives	Table 2 (Pages 10–24)
Synthesis of results	21	Summarise and/or present the charting results as they relate to the review questions and objectives	Pages 25–28
Risk of bias across studies	22	Not applicable for scoping reviews	Not applicable
Additional analyses	23	Not applicable for scoping reviews	Not applicable
Discussion			
Summary of evidence	24	Summarise the main results (including an overview of concepts, themes and types of evidence available), link to the review questions and objectives, and consider the relevance to key groups	Pages 29 and 30
Limitations	25	Discuss the limitations of the scoping review process	Pages 30 and 31
Conclusions	26	Provide a general interpretation of the results with respect to the review questions and objectives, as well as potential implications and/or next steps	Page 31
Funding			
Funding	27	Describe sources of funding for the included sources of evidence, as well as sources of funding for the scoping review. Describe the role of the funders of the scoping review	Sources of funding for the included studies were not extracted. Funding sources for the wider CAG study which included this scoping review are stated on Page 32

Source: Tricco et al.[23]
CAG: Children's Attitude to Grief; PRISMA-ScR: Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews.

Table A2. Search strategy.

Database: Ovid MEDLINE(R) ALL <1946 to December 07, 2023>
Search Strategy:

1 Child/ (1937944)
2 (Children or child or 'young people' or 'pre-school' or 'toddler or p?ediatric or young person or young boy or young girl* or school* aged children' or student* or 'elementary school' or 'primary school' or academy).mp. (3083309)
3 1 or 2 (3083309)
4 (SEN or 'special educational need*' or 'intellectual disabilit*' or 'learning disabilt*' or 'developmental disabilit*' or 'specific learning difficult*' or 'learning difficult*' or 'speech and language impairment' or 'language impairment' or 'communication difficult*' or 'language barriers' or 'Communication barriers' or 'Limited language proficiency').mp. (118946)
5 3 or 4 (3141846)
6 ((Nonverbal or non-verbal or non verbal) adj Communication).tw. (1923)
7 ((picture* or 'Picture based' or Visual or Symbol or Pictorial or Pictogram or Smiley or play) adj3 (tool* or approach* or assessment* or scale or screening or measure* or interview* or questionnaire* or inventor*)).tw. (106198)
8 ('facial expression*' or 'expressive therap*').tw. (11145)
9 Multi sensory storytelling.tw. (3)
10 'Emotions Questionnaires'.tw. (4)
11 (Emoticons or emoji).tw. (253)
12 or/6-11 (119244)
13 Bereavement/ (6776)
14 Grief/ (10290)
15 ((mental or psychological or emotional) adj3 (health or wellbeing or therapy or therapies or counselling or support)).tw. (270646)
16 (Cope or coping or resilien* or 'quality of life QOL' or wellbeing).tw. (236585)
17 (bereave* or grief or griev* or mourn*).tw. (19424)
18 or/13-17 (492463)
19 5 and 12 and 18 (534)
20 limit 19 to english language (524)

PICO/PECO	
Population	Children/young people and those with SEN
Intervention/explore	Non-verbal methods
Comparison	None
Outcome	Bereavement, grief and mental health needs

Table A3. Data extraction template used to extract information from included studies to answer the scoping review's questions.

Domain	Extracted information
Study characteristics	First author last name
	Year of publication
	Country in which study was conducted
	Title of publication
	DOI of publication
	Study type
	Aim of study and methodology
Population characteristics	Population
	Age range
Characteristics of non-verbal tool/approach	Condition (e.g. grief, mental health, wellbeing)
	Name of tool/approach
	Type of tool/approach
	Description of tool/approach
Key findings	Key evaluation findings (e.g. psychometric properties of tool/approach, including utility/feasibility)
	Key findings in relation to development/design/implementation of tool/approach