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Social validity assessment of instructional approaches for parents of children who require augmentative and alternative communication: a scoping review

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ABSTRACT

Training parents to support augmentative and alternative communication (AAC) implementation for children with severe communication disabilities is a critical component of family-centered intervention. Social validity ensures that training goals, procedures, and outcomes are acceptable and meaningful to stakeholders and is essential for achieving sustainable, long-term improvements. The findings indicate an increasing emphasis on social validity assessments since 2020. This review examined social validity assessment practices in parent-implemented AAC intervention training. Three theoretical and four practical components of social validity assessments were analyzed across 30 records reporting on 28 studies. Results demonstrate increased attention to social validity assessment since 2020. However, significant conceptual and methodological limitations persist. Theoretical frameworks underlying social validity assessments are frequently poorly conceptualized, with only half of the authors providing a clear rationale for their assessments. Definitions lack coherence across studies. Maintenance data and stakeholder perceptions were collected, and perspectives were predominantly gathered post-intervention and primarily from parents rather than children. These findings reveal shortcomings in current social validity assessment approaches. Therefore, rigorous theoretical grounding and methodological sophistication are needed to ensure social validity assessment transcends tokenistic inclusion, thus becoming a purposeful and integral component of intervention research.

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Communication is an interpersonal activity, therefore all participants have a role to play to ensure success (Teachman & Gibson, 2014). As augmentative and alternative communication (AAC) involves the use of less frequently used means and modes of communication that may not be intuitive to either the individual requiring AAC or their communication partners, both parties require support and instruction to facilitate optimal use (Kent-Walsh et al., 2015). Therefore, partner training has long been regarded as an essential component of improving the communication outcomes of persons in need of AAC (Biggs et al., 2019; Kent-Walsh et al., 2015; Shire & Jones, 2015).

Parents play a central role in implementing AAC interventions for young children as they are present in the contexts within which their children live, interact, learn, and play (Granlund et al., 2008). They can thus be regarded as primary communication partners for young children (Fäldt et al., 2020), although this may differ somewhat between cultures (Geiger & Alant, 2005; Morelli et al., 2018). When parents include language-enhancing strategies in daily routines and play activities, they offer children learning opportunities in their natural environment and daily routines, thereby allowing for authentic learning experiences and greater generalization of children's language skills (Bornman et al., 2020; Kaiser & Roberts, 2011; Roberts & Kaiser, 2012). Several studies aimed at training parents to implement AAC strategies with their children who require AAC have been developed and reported in the literature (Biggs et al., 2019; Kent-Walsh et al., 2015; Shire & Jones, 2015).

Social validity of AAC interventions has likewise been highlighted in the AAC literature (Bastable et al., 2021; Logan et al., 2017; Pierson et al., 2022). Wolf's Wolf (1978) seminal definition of social validity states that it concerns "the social significance of the intervention goals…, the social appropriateness of the intervention procedures…, and the social importance of the effects" (p. 207).

A recent scoping review conducted by Snodgrass et al. (2022) revealed that Wolf's definition is not uncontested and that various authors see overlaps between social validity and other constructs such as construct validity, ecological validity, and maintenance and generalization. The review also noted consensus among authors that social validity does not include behavior change that can be causally attributed directly to the intervention.

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Regardless of its exact definition, the importance of maximizing the social validity of educational and therapeutic interventions for children with disabilities has long been affirmed (Kazdin, 1977; Snodgrass et al., 2018; Wolf, 1978). After all, these interventions are designed to ultimately improve the lives of children, their families, and other stakeholders, and should therefore be perceived as such by them. Socially valid treatments are acceptable to stakeholders, perceived as important, and practical to implement in real-world situations (Snodgrass et al., 2018). They are therefore likely to be adopted in practice and lead to sustainable and meaningful change.

In the AAC field, a number of recent reviews have summarized the social validity of various AAC interventions. Logan et al. (2017) found that the social validity of aided AAC interventions for children with ASD was infrequently assessed in experimental studies. Bastable et al. (2021) reviewed 24 studies pertaining to AAC interventions for persons with autism spectrum disorder (ASD), and found that direct stakeholders' voices remain limited or absent in social validation of the intervention. Pierson et al. (2022) reviewed 86 studies on speech generating device interventions for individuals with ASD and/or intellectual disability. While they found that some subjective data regarding social validity of procedures was obtained in more than half of the studies prior to intervention, there was a dearth of social validity data (collected either before or after intervention) regarding the goals and outcomes of these interventions. Pierson et al. (2022) also noted an increasing trend in the collection of social validity data overall.

When parents are trained to support the implementation of AAC interventions for the benefit of their children who require AAC, it seems that the social validity of the intervention should be of high priority. Unless parents see the goals, procedures, and outcomes of the intervention as acceptable and meaningful, the training is unlikely to result in a long-term difference. This raises the question of how extensively social validity has been assessed in parent training studies in the AAC field. Social validity as a construct is multifaceted and complex, and many aspects may remain unique to a specific intervention situation (Snodgrass et al., 2018). Assessing the social validity of an intervention in a way that is defensible and valid is therefore not always an easy task. Various efforts have been made to generate frameworks, matrices, and guidelines for researchers and practitioners to guide their efforts in this respect (Ledford et al., 2016; Schlosser, 2003). To consolidate the vast literature compiled on this topic, Snodgrass et al. (2022) conducted a scoping review to outline the characteristics of a rigorous assessment of social validity. In this process, they developed seven key questions (three theoretical and four practical) aimed at describing the theoretical and practical components of social validity evaluations. These include three theoretical questions: the justification for assessing social validity (why), the epistemological considerations (what constitutes credible knowledge about social validity), and its definition (what defines social validity). The four practical questions concern who is involved in the evaluation, how it is conducted, when it is conducted, and what is done with the results (Snodgrass et al., 2022). These seven questions can be used as a guiding framework to describe the rigor and coherence with which researchers assess the social validity of their intervention.

Regarding the rationale, researchers should clearly state why social validity is considered. Often, social validity assessments appear to be added as an afterthought without clear justification – as if researchers are merely "ticking a box" or assuming that the reasons for including social validity are self-evident. However, as Snodgrass et al. (2022) point out, there are numerous reasons for this practice. Social validity assessments serve a formative role by guiding adaptations and adjustments to interventions prior to implementation. They also provide explanatory insights, as social validity results can clarify weak or absent primary effects. Additionally, the results may predict the ease and feasibility of scaling up interventions in practical settings.

Regarding epistemology, stakeholder perspectives have long been regarded as constituting an important and defensible data source for social validity (Schlosser, 2003; Wolf, 1978). Qualitative and quantitative methods may be used to obtain these perspectives, but care should be taken that rigor is maintained (e.g., using psychometrically valid rating scales, reducing participant effects). Another source of data is social or normative comparison whereby the post intervention performance of the target group is compared to that of another group considered as typical and/or normative (e.g., individuals without disabilities) (Schlosser, 2003). When working in the field of disability, however, such comparisons may be inappropriate or of limited value, as alternative rather than typical functioning may be the goal (Renner et al., 2003). Kennedy (2002) makes a strong case for using maintenance measures as a form of social validity assessment. Interventions may be perceived as highly useful and acceptable, but unless they are applied and maintained in everyday practice, such perceptions have limited value.

As mentioned earlier, the construct 'social validity' lacks a uniform definition. Wolf's Wolf (1978) original definition emphasized the social significance of intervention goals, the appropriateness of intervention procedures, and the importance of intervention outcomes. However, this definition is not consistently applied in social validity assessments, and there is no consensus on the boundaries and components of social validity. Consequently, it is unclear how social validity intersects with related constructs such as treatment acceptability and ecological validity.

The population involved in social validity assessments may include direct and indirect stakeholders. Parents and children are both direct stakeholders of AAC parent training and may be expected to be included in social validity assessments (Bastable et al., 2021). However, obtaining the child's perspective is not always easy (Nilsson et al., 2015). The methods used to evaluate social validity depend on the variables assessed, but typically include surveys and rating scales, although these may not fully capture stakeholders' experiences and perspectives. Regarding the timing, once-off measurements have been criticized as providing a limited representation. The increasing emphasis on person-centred care and stakeholder co-design of interventions (Thunberg et al., 2022) suggests that multiple and continuous assessment of social validity is required. Lastly, researchers should document and report on how the results of social validity evaluations of the intervention are applied, such as whether they prompt adjustments to the program for future iterations.

The purpose of this review is to describe the assessment of social validity in interventions designed to train parents in supporting AAC implementation for their children who require AAC. We used the seven components suggested by Snodgrass et al. (2022) to extract information about the theoretical and practical aspects of social validity assessments. In doing so, we aimed to offer a structured overview of the current state of the AAC field and to identify areas of strength and weakness that can be developed and enhanced in future studies.

Method

Protocol

A review protocol guided by the PRISMA guidelines for scoping reviews was initially developed (Tricco et al., 2016, 2018). This protocol specified the title of the review, the rationale and specific research questions, the search strategy for the identification of relevant studies, and the inclusion and exclusion criteria. The process for screening was specified. Finally, the data extraction strategy was clarified, and a data extraction table was created (Table 1).

Search strategy

The search strategy included electronic database searches, hand searches as well as forward and backward citation searches of included records. In consultation with a subject librarian, 12 electronic databases were identified and searched for peer-reviewed and grey literature: Academic Search Complete, Cumulative Index to Nursing and Allied Health Literature (CINAHL), MEDLINE, PsycINFO, Psych ARTICLES, Scopus, Education Resources Information Center (ERIC), Family and Social studies, Health Source: Nursing/Academic Edition, Africa wide, Humanities source, and Social Work abstracts. Search terms were trialed and refined in consultation with the experienced librarian to further enhance the effectiveness of the electronic search (Spencer & Eldredge, 2018) and then tested during pilot searches. The thesaurus and/or subject index of each database was used to generate unique search terms for each database.

Search terms pertained to the population of interest (parents of children who required or used AAC) and the intervention of interest (parent training programs focussed on AAC implementation). No limitations were placed on primary outcomes, and therefore no search terms pertaining to outcomes were included. Likewise, no keywords on the construct 'social validity' were included, because aspects of social validity such as maintenance or stakeholder experiences and perspectives may have been assessed without explicitly labeling them as social validity. The specific search terms per database and yields are provided in Supplemental Table 1. Database searches were conducted in October 2023 and searches were limited by date (January 1998 to October 2023) and language (English only). A hand search was conducted on the references included in a similar review that formed part of the first author's doctoral thesis.

Criteria for inclusion and exclusion

The following inclusion criteria were used to select eligible studies: (a) studies that report on parent training and provide detailed descriptions of the training protocol. When additional family members were trained, those studies were included, and, whenever possible, only the data related to parents as communication partners were analyzed. However, studies were excluded if the training targeted both parents and professionals. The term 'parent' was interpreted as the main caregiver and/or legal guardian and included kinship parents, adoptive parents, stepparents, foster parents, and in some cases grandparents (McWey et al., 2023); (b) studies that report on parent training that target AAC implementation (aided and/or unaided) by a parent with their child. Methods typically used for children who have a primary hearing impairment (such as total communication and sign language) were excluded; (c) studies that include children aged 0-18 years; and (d) studies that report on the results of social validity measurements. Social validity measures were broadly defined and included maintenance data, social comparisons, and stakeholders' perceptions of any aspect of the intervention and its effect on themselves or the child. All reviews and theory papers were excluded. No further limitations were placed on study designs.

Study selection

A total of 4,319 records were identified through the database searches, and exported from the EBSCOhost research platform via a Research Information Systems (RIS) link and uploaded onto Covidence[1], a cloud-based collaboration software platform to which researchers subscribe and that was specifically developed for rigorous systematic reviews (Kellermeyer et al., 2018). A total of 873 duplicates were removed. Hereafter an additional 7 records were added from hand searches. All three authors acted as reviewers and were involved in the study selection. A total of 3453 records were independently screened at title and abstract level on Covidence by two reviewers. Cohen's kappa showed good agreement between reviewers ($\kappa = .71$). Disagreements were discussed and resolved by consensus where possible. In cases here consensus could not be reached, a third reviewer arbitrated the decision. A total of 3402 records were excluded. The full text of the remaining 43 manuscripts were retrieved, and two reviewers independently assessed these studies, reaching an agreement of $\kappa = .57$ (moderate agreement). Disagreements were once again solved by consensus where possible, or arbitrated by a third reviewer. The reasons for excluding 13 records after full-text screening included: wrong intervention ($n = 3$); publication not peer-reviewed ($n = 1$); non-English full-text, although English abstract ($n = 1$); study does not report on primary data related to training outcomes ($n = 1$); study does not report on social validation ($n = 4$); no parents/caregivers were trained ($n = 3$). Subsequently, 30 records were included in this review. The process of study selection is detailed in Figure 1.

Table 1. Social validity evaluation of the studies.

	Theoretical questions			Practical questions			
Authors	Rationale (was it provided?)	Epistemology (defensible knowledge)	Definition (was it provided?)	Who provided input/was assessed?	How was it assessed?	When was it assessed?	Application of social validity assessment results
1. Alsayedhassan et al. (2020)	No	Subjective & objective	Yes	Parent and child	Observations; Questionnaire	Post intervention	Not Reported
2. Binger et al. (2008)	Yes	Subjective & objective	Yes	Parents and children	Video analysis; Questionnaire	Pre & post intervention	Not Reported
3. Bornman et al. (2001)	No	Objective	No	Parent and child	Observations	Post intervention	Not Reported
4. Bunning et al. (2014); Gona et al. (2014)	No	Subjective	No	Parents	Questionnaire; Interviews	Post intervention	Not Reported
5. Calculator (2016)	Yes	Subjective	Yes	Parents	Questionnaire	Pre & post intervention	Noted for future program modifications
6. Chaabane et al. (2009)	No	Subjective	Yes	Parents	Questionnaire	Post intervention	Not Reported
7. Dodge-Chin et al. (2022)	No	Subjective & objective	Yes	Parents	Video analysis; Questionnaire	Post intervention	Not Reported
8. Douglas et al. (2023)	Yes	Subjective & objective	Yes	Parent and child	Observations; Interviews	Pre & post intervention	Not Reported
9. Douglas et al. (2017)	No	Subjective & objective	Yes	Parents and child	Observations; Questionnaire	Post intervention	Noted for future training enhancements
10. Douglas (2021)	Yes	Subjective & objective	Yes	Parent, child and sibling	Observations; Interviews	Pre & post intervention	Important when considering sibling involvement and avoid overburdening them
11. Ferm et al. (2011)	Yes	Subjective	No	Parent	Survey; Interviews	Post intervention	Changes were made to training materials. The course was adapted for younger children; and those from culturally and linguistically diverse homes.
12. Hampton et al. (2020)[f]	No	Subjective & objective	Yes	Parent	Satisfaction Survey	Post intervention	Not Reported
13. Jonsson et al. (2011)	Partial	Subjective & objective	No	Parents	Questionnaire; Video analysis; Interviews	Post intervention	Incorporated into subsequent applications of the program
14. Kent-Walsh et al. (2010)	No	Subjective & objective	Yes	Parents and children	Observations; Video analysis	Pre & post intervention	Not Reported
15. Kolb et al. (2023)	Partially	Subjective & objective	Yes	Parent and child	Observations; Questionnaire	Post intervention	Not Reported
16. Korner et al. (2024)	No	Subjective	Yes	Parent	Questionnaire	Post intervention	Not Reported
17. Liao et al. (2022a, 2022b)	Partially	Subjective & objective	Yes	Parents and children	Observations; Questionnaire; Satisfaction survey	Post intervention	Not Reported
18. Park et al. (2011)	No	Subjective & objective	Yes	Parents and children	Questionnaire	Post intervention	Not Reported
19. Pierson et al. (2021)	No	Objective	Yes	Parents and child	Observations; Questionnaire	Mid & post intervention	Not Reported
20. Rensfeldt Flink et al. (2023)	Partially	Subjective & objective	No	Parents and children	Observations; Interviews	Pre & post intervention	Suggestions involving experiences and strengths should be acknowledged and built upon
21. Romski et al. (2011)[g]	Yes	Subjective	No	Parents	Questionnaire	Post intervention	Social validity should be assessed by a larger and more diverse sample of parents and should be compared to the social validity assessments of SLP-led interventions
22. Rosa-Lugo and Kent-Walsh (2008)	Yes	Subjective & objective	Yes	Parents, children and sibling	Video analysis; written comments	Pre & post intervention	Not Reported
23. Senner et al. (2019)	No	Subjective & objective	No	Parents	Observation; Questionnaire	Post intervention	Not Reported
24. Starble et al. (2005)	Yes	Subjective	No	Parents	Questionnaire	Post intervention	Approaches are to be co-developed with parents; parents should be comfortable with them.
25. Suberman and Cividini-Motta (2020)	Yes	Subjective	Yes	Parents	Questionnaire	Post intervention	Not Reported
26. Tait et al. (2004)	No	Objective	No	Parents and children	Observation	Post intervention	Not Reported
27. Timpe et al. (2021)	No	Subjective & objective	Yes	Parents and children	Questionnaire	Post intervention	Future studies to expand on intervention contexts
28. Treszl et al. (2022)	No	Subjective & objective	Yes	Parents and child	Questionnaire	Post intervention	Confirmed that tele practice is acceptable

Data extraction

Data extraction was carried out using a custom-designed Microsoft Excel ® document. The data extraction pertaining to social validity assessments was guided by the seven questions posed by Snodgrass et al. (2022) and related to the rationale for assessing social validity (why social validity was included); epistemology (what constitutes defensible knowledge about social validity); the definition (what constitutes social validity); participants (who is involved in assessing the social validity); method (how the social validity assessment is conducted); time (when the social validity is assessed) and finally outcome (what was done with the results following the social validity evaluation). Furthermore, any data pertaining to indications of cultural and/or linguistic considerations as well as measures taken to enhance social validity was also extracted.

The first and second author then piloted the data extraction tool and the process by independently extracting data from the first 10 studies and then held a meeting to compare the extraction. Discrepancies were discussed and resolved, and the data extraction table was jointly amended. Data from the 30 records was then extracted by the first or second author using the revised data extraction document. The second author checked all data extractions conducted by the first author, whereas the third author checked all data extracted by the second author. Overall, there was an agreement of 93% between the first author's extraction as verified by the second author, whereas the third author agreed with the data extraction of the second author 91% of the time, pointing to high inter-rater agreement between the three authors.

Descriptive information about each study was extracted (e.g., authors, year of publication, design, and country in which the study was conducted). In two instances, the same study was reported in multiple articles (i.e., Liao et al., 2022a, 2022b; as well as Bunning et al., 2014; and Gona et al., 2014). In these instances, data from these articles was consolidated during extraction where feasible, aiming to prevent redundancy and to offer a comprehensive description of the intervention. A summary of the descriptive information extracted information is presented in Supplemental Tables S2 and S3.

Results

Descriptive information

Of the 30 records included (reporting on 28 studies), six studies were published between 2001 and 2009; ten between 2010 and 2019 and fourteen between 2020 and 2023. Of the 28 studies, 19 were conducted in the USA, three were conducted in Sweden, two in Australia and one each in Kenya (Bunning et al., 2014; Gona et al., 2014), Saudi Arabia (Van der Meer & der Meer, 2015) Canada (Treszl et al., 2022), and South Africa (Bornman et al., 2001).

The study designs included three quantitative experimental group designs, namely a pretest-posttest design and two randomized control trials. Fourteen records reported on studies employing SCEDs. Eight mixed-method studies were included; three of these combined a focus group and a SCED. One case study, one case report, and one AB design were also included. The descriptive information of each of the included studies is provided in Supplemental Table S2.

Assessment of social validity

Authors of all the articles included in the review reported one or more evaluations that could be considered assessments of social validity, although they did not always use this term. Given the current lack of conceptual clarity surrounding the construct 'social validity', this review also included articles that did not explicitly discuss assessing social validity but reported on the maintenance of trained behaviors, parent perceptions or parent satisfaction. This decision was made in line with a broad perception of social validity to include as many articles as possible. Authors pertinently referred to the assessment of social validity in 20 of the 28 studies.

Why (rationale)

A rationale for evaluating the social validity of the intervention was pertinently provided in 10 studies, while four studies provided a partial or implied rationale. The rationale most frequently provided was that treatment effectiveness and efficacy would be improved if the treatment was found to be socially valid (reported in six studies). The importance of acceptability and buy-in was mentioned in three studies, while the importance of contextualizing and individualizing the intervention to the participants was mentioned in three studies. Cultural appropriateness was also mentioned as a rationale in two studies. A total of 14 studies did not provide a rationale for evaluating social validity.

Epistemology: what constitutes defensible knowledge about social validity

The authors preempted this data to an extent by including research that did not specifically mention evaluating social validity, nonetheless, it should be noted that maintenance data was mentioned in twenty studies. Data on stakeholder perspectives (most often parents' perspectives) was collected in 26 of the 28 included studies. None of the studies collected data on normative comparisons.

What is social validity?

There was no uniformity in the way social validity was conceptualized across the articles. A wide variety of constructs and components were mentioned, lacking clear boundaries and definitions. According to Wolf's Wolf (1978) original definition, goals, procedures, and outcomes were specified. Similarly, the components of social validity identified in the included studies were categorized based on whether they pertained to goals, procedures or outcomes. None of the components are related exclusively to goals. Some components seemed to be overarching components that authors had either not clearly related to the three aspects or that were related to all three aspects.

Overarching components. Acceptability was mentioned in six studies, and of these, five pertinently mentioned that acceptability was related to goals, procedures and outcomes, with two articles pertinently referring to Wolf's Wolf (1978) definition. Satisfaction was explicitly mentioned three times. In one study, it was related to both the outcomes and the procedures used. Another study spoke about the degree to

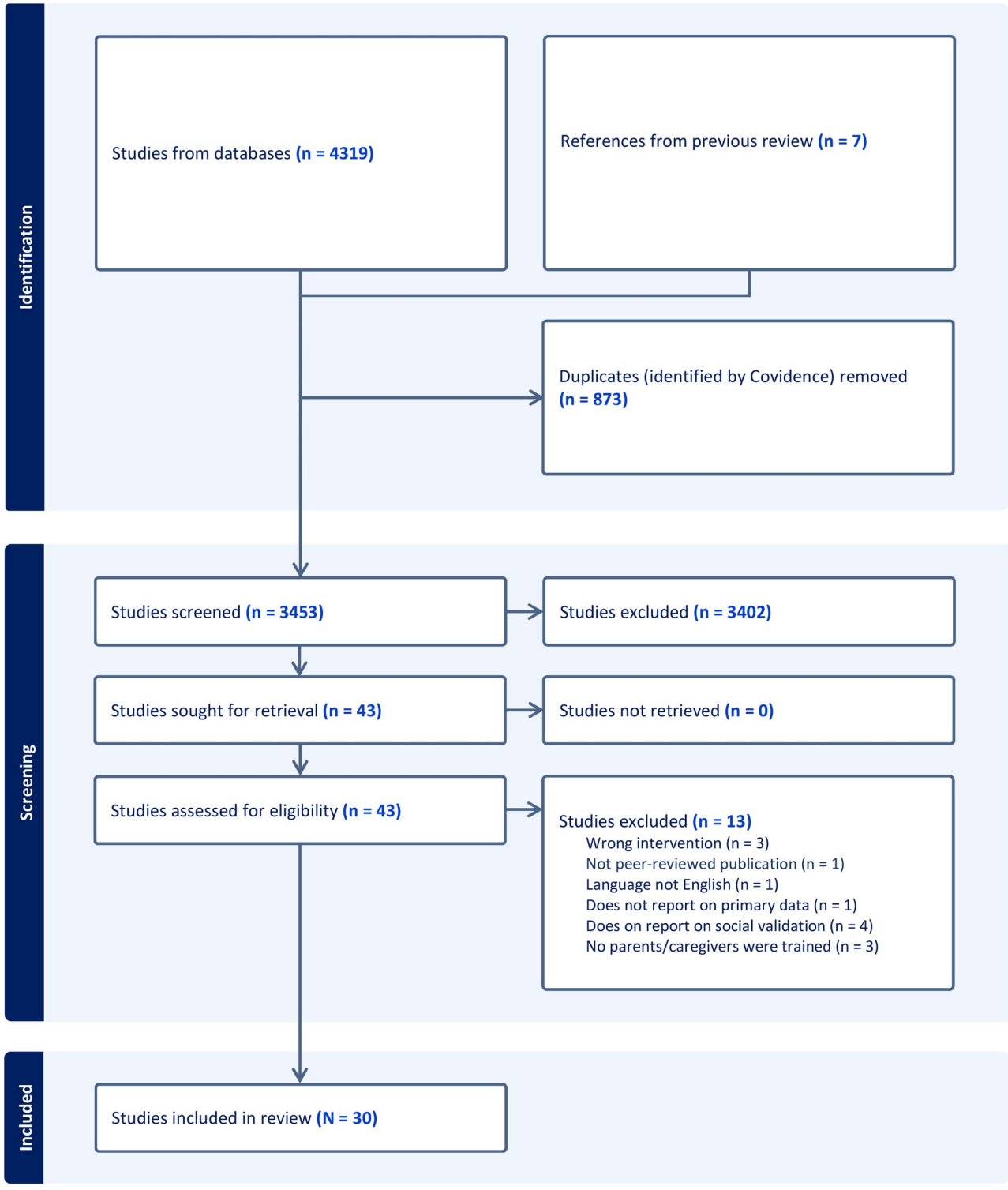

Figure 1. PRISMA flowchart outlining study selection process.

which parents were "happy with the results" (Chaabane, p. 675) which may also have been construed as satisfaction. Other overarching constructs were appropriateness ($n = 2$), cultural validity ($n = 2$), and value/worth ($n = 2$). In four studies, parents were asked about future implementation, including their views on sustained use, generalization to other situations and communication partners, and the likelihood of recommending the intervention to others. Additionally, changes required as well as aspects parents liked and disliked by parents were also reported in a total of three studies.

Components related to outcomes. The most frequent components mentioned were effectiveness ($n = 11$), closely followed by benefit ($n = 10$). Unwanted side effects were also mentioned twice, while gains, perceived outcomes and future effectiveness were each mentioned once.

Components related to the intervention procedures. Intervention procedures encompassed both the actual communication strategies that parents were taught to implement with their children and the parent training (e.g., logistics, methods used,

etc.) itself. Feasibility and various aspects that may be related to it were evaluated in seven studies. Of these, three mentioned the ease of use or ease of implementation, and two mentioned time needed to implement. Disruptiveness, cost effectiveness and the degree to which implementation was manageable and realistic were other aspects related to feasibility. Enjoyment and degree of comfort with the intervention were also noted in one study each. The training logistics (instructional time, method of engaging online, tech problems, and ease of understanding instructions) were mentioned in four studies.

When, who, how; what was done with the results, limitations

Assessment before or during intervention. In seven studies, the social validity of the intervention was assessed before the intervention was conducted. All assessments pertained to stakeholder perspectives. Focus groups and interviews were used in three studies each, while a quantitative self-developed questionnaire was used in one study. Parents were involved in these assessments in six of the seven studies, while cultural experts were mentioned in three studies and speech-language pathologists in two studies. In one study (Pierson et al., 2022), the social validity of the intervention was assessed midway through the intervention, using a quantitative questionnaire (adapted from a published questionnaire) that was completed by participating parents. The outcomes of the assessments reported in these eight studies indicate that changes were needed in three studies, and these changes were reported to have been made prior to intervention. No changes were needed in four studies, while it was not clear if changes were needed in one study. Regarding the actions taken based on the results of these latter five studies, these were reported only in one case, where no changes were made. In the other four studies, it was not pertinently stated what was done with the results of the social validity assessments.

Assessments post intervention. Assessments of social validity post intervention was conducted for all 28 studies. In 20 studies, maintenance was assessed, while stakeholder perspectives were assessed in 25 studies. In the 20 studies that assessed maintenance, the time frame within which this was assessed ranged from one week to one year. A total of seven studies assessed maintenance within a time frame of four weeks or less post intervention, while the remaining 13 studies assessed maintenance within a time that exceeded four weeks post-intervention. The number of sessions during which maintenance was assessed, ranged from one to nine. All studies used observations of behavior (either live or video recorded) to assess maintenance. One study additionally used logbooks kept by parents for up to 59 days after the intervention had been introduced, to assess maintenance (Jonsson et al., 2011). The child's behavior was assessed in 17 studies. In 12 studies, it was reported that behavior changes were maintained. In two studies, results were variable, whereas no clear differences between baseline and maintenance phase behavior patterns were reported in three studies. Parent behavior was evaluated in 20 studies and in 19 of these, the effects were reported to have been maintained. One study reported that no change to baseline behavior was noted one year after intervention (Rensfeldt Flink et al., 2023).

Stakeholder perceptions of social validity were assessed in 25 of 28 studies. In 24 of these, the perceptions of parents who participated in the studies were solicited while the perceptions of the children who participated were solicited in only three studies. In two studies, the spouses of the participating parents evaluated the social validity, and in one of these studies, an adolescent sibling also did so. Quantitative measures in the form of scales and questionnaires were used in 22 studies. Of the instruments used, 15 were self-developed, while adaptations of previous instruments were reported in four studies, and the use of unadapted published instruments was reported in three studies. A total of eight studies used qualitative measures. Interviews were mentioned in six studies, while the use of open-ended questions as part of the primarily quantitative questionnaires was reported in three studies.

Stakeholder perceptions were generally positive across studies. In 16 studies, only positive perceptions were reported, including high satisfaction, intention to continue using the intervention and willingness to recommend it to other parents. In nine studies, stakeholders offered some critique or noted challenges and suggestions for improvements. These pertained to program logistics (such as the length of training time it took), goals (e.g., targeting too many gestures), materials used (e.g., need to individualize communication boards), and child progress (limited or slow).

Across all the studies that assessed social validity post intervention, 16 studies contained no specific discussion regarding what was done with the social validity assessment results. Five studies alluded to changes that would be or had already been made to subsequent iterations of the parent training program, based on parent feedback. In two studies, the authors merely reiterated that the results underlined the importance of social validity assessments. In one study, the authors suggested that the assessment results confirmed that telepractice is acceptable to parents (Treszl et al., 2022), while the authors of another study (Romski et al., 2011) suggested that social validity assessment should be conducted with a larger and more diverse sample of parents, and also compared to parents' perceptions of speech-language pathologist-implemented interventions.

Limitations of social validity assessments. Across all studies, limitations of the social desirability assessments were acknowledged in 16 studies. In six studies, it was mentioned that maintenance was either not assessed or only assessed in a limited way. Social desirability effects and participant reactivity was mentioned in five instances. In two studies each, authors cautioned that the social validity assessments lacked rigor, were limited to only a proportion of the participants involved, and could not be generalized to parents outside the study who may have had more constraints that would have made interventions more difficult for them to implement (e.g., single parent households). The subjectivity of the assessment and the fact that social validity was only assessed once rather than multiple times was mentioned in one study each.

Discussion

Social validation of AAC intervention has been encouraged in the literature for over two decades (Schlosser, 1999) to ensure the social significance of the intervention's goals, outcomes

and procedures. Snodgrass et al. (2022) developed a framework for attempting to describe the rigor of social validity assessments. In that framework, they highlight various components that need to be fully described and justified to ensure rigor in the assessment. These include three theoretical components, namely the provision of a rationale, epistemology, and definition of social validity. Additionally, four practical components must also be considered, namely the participants involved in such assessments, the assessment methods employed, the timing of assessments, and the actions implemented based on the results.

In only half of the studies included, authors justified the evaluation of social validity, and in approximately one third of the studies a fully articulated rationale was provided. The World Health Organization (WHO) highlighted that social validation can be done to ensure the acceptability, effectiveness, and sustainability of the intervention. Other authors (e.g., Ogilvie & McCrudden, 2017), have equated social validity with acceptability, highlighting the importance of this aspect. In the reviewed studies, authors also referred to effectiveness and acceptability when giving a rationale for evaluating social validity. Sustainability was not pertinently mentioned. Instead, some authors referred to the importance of contextualizing and individualizing the intervention (Binger et al., 2008; Bunning et al., 2014; Kolb et al., 2023; Liao et al., 2022b). The fact that half of the studies did not provide a rationale for evaluating social validity seems to strengthen the impression that for many authors this aspect seems to be more of an afterthought rather than an integral and well-conceptualized component of their study (Snodgrass et al., 2018).

Stakeholder perspectives were most often collected in an attempt to obtain data on social validity – in line with the long-standing perspective that this is an important and defensible data source of data for this purpose (Schlosser, 2003; Wolf, 1978). Maintenance data was also frequently collected, confirming that interventions that are not maintained are likely not regarded as socially valid (Kennedy, 2002). None of the studies collected normative comparison data, confirming that such comparisons may not be appropriate or helpful in the field of AAC where alternative methods of communication and interaction rather than typical functioning may be the aim (Renner et al., 2003).

There was no uniformity in the way social validity was defined or conceptualized in the reviewed studies. Snodgrass et al. (2018) came to the same conclusion after reviewing social validity measurements in single case research related to special education. In an eloquent essay, Tractinsky (2018) argued that the construct 'usability' in the field of human-computer interface design serves as an umbrella construct without clear conceptual boundaries. This ambiguity has resulted in conceptual confusion and, importantly, discrepancies between actual measurements and the conceptual framework of the concept. The same may be said for the construct of social validity. Components such as acceptability, effectiveness, satisfaction, and appropriateness are mentioned as possible components of this construct, yet, at present there is no uniform understanding regarding how these components relate to each other or how they should be measured. It seems that the conceptualization of social validity is far from clear, and that more conceptual clarity is needed if this construct is to be appropriately measured. The lack of conceptual coherence is also reflected in the measurement tools used. Specifically, stakeholder perspectives were most often measured by self-developed questionnaires, with little indication of rigor in the development (e.g., no mention was made of strategies to ensure content or construct validity or reliability).

Regarding the practical aspects of measuring social validity, this was done before the intervention in seven studies, midway through the intervention in one study, and after the intervention for all 28 studies. Regardless of the time point at which social validity was measured, most studies did not report what was done with the results. According to Schlosser (2003) social validation should be treated as an interactive process at all phases of the intervention. This should be done starting from the intervention development stage, continuing during and after the intervention, as it will furnish the researcher with information necessary for implementing changes across all the stages (Ogilvie & McCrudden, 2017; Schlosser, 2003). The participants should continue with the evaluation process to ensure common goals, procedures, and outcomes of the intervention (Kemmerer et al., 2023). In doing so, this ensures that the stakeholder voices, goals and values are taken into consideration and this brings about positive outcomes of the intervention (Bastable et al., 2021; Snodgrass et al., 2022). The prevailing practice of only measuring social validity after the intervention does little to change the power relationships between the interventionist/researcher and the parent, leaving the control over the intervention firmly in the hands of the professionals. Truly participatory and inclusive research would require continuous measurement of social validity and a clear indication of how the results influenced the development and application of the intervention (Dada et al., 2023; Smits et al., 2020).

The use of both quantitative and qualitative methods to assess social validity is largely advantageous, as this combined approach can increase the rigor (Kemmerer et al., 2023; Ogilvie & McCrudden, 2017). When quantitative and qualitative results complement and confirm each other, bias can be reduced, and the validity and trustworthiness of the results can be increased. However, when the construct remains poorly defined, the integration of qualitative and quantitative data becomes difficult to achieve, as a central organizing framework remains elusive.

Additionally, it is noteworthy that parents were frequently involved in social validity assessments, which encompassed evaluation of behavior maintenance and stakeholder perspectives. While child behavior (maintenance) was assessed in 17 studies, the child's perspective was only sought in three studies, although preference assessments were conducted in some of the studies (e.g., Sigafoos et al., 2004). Respecting and supporting children's agency in decision-making regarding matters that pertain to them is a right that is highlighted in Article 12 of the Convention on the Rights of the Child (United Nations, 1989). Thus, the significance of including the child's voice in research cannot be stressed enough. Seeking children's perspectives is not always easy, especially if these

children have communication difficulties (Bastable et al., 2021; Nilsson et al., 2015). Factors such as age, cognitive capacity, the context of the research, and cultural issues need to be considered when including the voice of the child, due to the influence these factors have on decision-making. Adults should be mindful of assuming that children are unable to accept agency and communicate their preferences and perspectives on interventions (Nilsson et al., 2015). Because children should be beneficiaries of parent-implemented intervention programs, research should explore novel ways in which their opinions and perspectives can be sought (Thunberg et al., 2022).

The limitations of the social validity assessments were acknowledged in just over half of the studies included in the review. While it is customary to acknowledge the limitations of empirical work in a publication, it seems that it is not yet common practice to acknowledge that assessments of social validity also typically have limitations. A common limitation when soliciting stakeholder perspectives about intervention is a tendency to answer questions in a socially desirable way (the so called Hawthorne effect), especially if the questions are posed by the interventionist who conducted the study and if participants cannot be afforded anonymity when responding (McMillan & Schumacher, 2014). In relationships between parents of children with disability and rehabilitation professionals, power is often perceived to remain with the professional (Brett, 2002). Participants may not feel free to criticize the intervention programs offered by these professionals. In addition, they may feel obligated or indebted to interventionists who provide them with services that are typically free of charge when provided as part of a research project.

Implications

This review described and summarized studies that reported on the assessment of social validity in interventions where parents of children who require AAC were trained to implement AAC. It is encouraging to see that parents of children spanning various ages and diagnoses, with and without prior AAC experience, have been trained to implement diverse AAC strategies in everyday settings, with generally sustained training effects, It was likewise encouraging that training was generally perceived positively by parents. At the same time, it is evident that the social validity of parent training programs is often not rigorously assessed. A rationale for social validity assessment was often lacking, as was a clear definition of the concept. This furthermore resulted in a lack of theoretical justification regarding the variables or constructs that were assessed to ensure that interventions were socially valid. The fact that assessments took place primarily after the training was implemented meant that stakeholders had little opportunity to provide formative feedback and to act as co-designers and developers of the training. Also, as alluded to earlier, children were often not included as participants in social validity assessments.

Like Snodgrass et al. (2022), we would urge researchers conducting AAC intervention studies to plan for the rigorous assessment of social validity as an integral part of the study. Researchers should clearly articulate their theoretical position and align the methodology they follow in their assessment accordingly. While social validity assessments do not need to be uniform across studies, the methods researchers opt to use should be defensible. The use of both quantitative and qualitative methods in assessing social validity may have potential in this regard, as methodological triangulation can strengthen rigor.

Furthermore, researchers should find ways of including persons in need of AAC (including children) in social validity assessments. Picture-based rating scales and choice boards have been used successfully to obtain the opinions and perspectives of persons in need of communication support, including children using AAC (Douglas et al., 2023; Mbanda et al., 2021). Although it may not always be easy to obtain their views, persons using AAC are the main stakeholders in an intervention, and their active involvement in intervention decisions is as much a moral obligation as it is integral to the effectiveness and sustainability of the intervention (Smits et al., 2020).

Limitations and future directions

Despite efforts to make the review broad and inclusive, some important literature may have been omitted. The exclusion of studies not published in English, for example, impacts the breadth of this review. Our search terms may have led to the exclusion of certain studies. Some studies did not provide details on variables that were part of the data extraction, which influenced the reporting of results for descriptive variables, such as age and number of participants; and also for the components of social validity such as a rationale and definition.

The clarification of the construct 'social validity' and its components may be a helpful undertaking in future studies. Clear definitions of possible components such as acceptability, satisfaction, and appropriateness are needed, as are models that describe how these components relate to each other. As recommended by Pierson et al. (2022) and Snodgrass et al. (2022), direction may be obtained from implementation research and program evaluation research, where similar components are often defined and evaluated (Binger et al., 2022; Proctor et al., 2011).

Conclusion

When AAC interventions align with parents' and families' priorities, needs, and preferences, as well as their lifestyle and cultural context, they tend to be sustained. Studies on AAC system abandonment and decision-making highlight the importance of client and family perspectives. Positive initial results encourage parents to continue using therapy-taught strategies across different contexts, whereas negative feelings can lead to rejection of AAC systems. Social validity assessment in AAC interventions has increased, but further research is needed to clarify its conceptualization and develop justified assessment methods. Without a clear rationale and

implementation strategy, social validity assessment risks being superficial. Researchers should also explore meaningful ways to incorporate the perspectives of AAC users themselves, as they are the primary beneficiaries.

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