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REVIEW

The role of telehealth in autism spectrum disorder management: a scoping review

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Running title: Doka et al. ASD and telehealth

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ABSTRACT

Aim: To map and summarise evidence on the role, benefits and challenges of telehealth in autism spectrum disorder (ASD) management, including assessment and intervention.

Methods: This scoping review searched PubMed and Scopus for English-language studies published from 2015 to 2025; the search was last updated on 14 April 2026. Nine studies met the eligibility criteria, comprising randomised controlled trials and observational, mixed-methods, descriptive, pilot, and qualitative studies.

Results: Available findings suggest that telehealth-based assessment may achieve high diagnostic concordance with in-person evaluation, and that telehealth-delivered interventions may yield similar outcomes in selected domains. Several studies reported high caregiver and clinician satisfaction. Key challenges included technological access barriers, variability in caregiver engagement, and concerns regarding reliability and equity in under-resourced settings.

Conclusion: Telehealth may be a valuable complement to, rather than a replacement for, in-person care. Future primary studies should use rigorous designs and standardised outcome measures and should prioritise linguistically diverse and low-resource populations; future evidence syntheses should include formal risk-of-bias assessment.

Keywords: autism spectrum disorder; caregivers; COVID-19; remote consultation; telemedicine

INTRODUCTION

Autism spectrum disorder (ASD) is a complex neurodevelopmental condition characterised by persistent deficits in social communication and interaction, alongside restricted and repetitive patterns of behaviour and interests (1). The clinical presentation varies considerably across individuals with respect to language development, cognitive ability, adaptive functioning, sensory features, and comorbid conditions, rendering ASD both a clinically challenging condition and a significant public health concern.

Recent epidemiological data underscore the growing prevalence of ASD. The World Health Organization (WHO) estimated that approximately 1 in 127 people worldwide had autism in 2021 (2), while surveillance data from the United States reported ASD in 1 in 31 children aged 8 years in 2022 (3). Because ASD is diagnosed behaviourally on the basis of developmental history and direct observation rather than laboratory markers, close collaboration with families is essential throughout the assessment process (4).

Given its complexity, ASD diagnosis and management require a multidisciplinary team (5). Early identification and timely intervention are essential for optimal developmental outcomes (6). Professional guidelines recommend developmental surveillance alongside autism-specific screening at 18 and 24 months (3). However, access to these services remains difficult for many families: geographical distance, specialist shortages, lengthy waiting lists, and economic constraints frequently delay or prevent assessment and treatment (7). These challenges were further amplified by the coronavirus disease 2019 (COVID-19) pandemic, which compelled health systems to adapt to remote approaches (7).

A notable response has been the rapid expansion of telehealth—the use of digital communication technologies to conduct assessments, parent counselling, and interventions for children with ASD remotely (8). This approach has attracted growing interest as a means of increasing access, reducing waiting times, and ensuring continuity of care (9). Studies

evaluating interventions delivered via digital platforms—particularly those involving parents as active facilitators—suggest that remote outcomes may be similar to in-person outcomes in selected domains (10).

Despite promising findings, the integration of telehealth into ASD services presents challenges, including variability in caregiver engagement (11), technological barriers (10), distracting home environments, and concerns about the reliability of remote methods (12). WHO emphasises equitable access to digital health and recognises digital health as an important component of modern health systems, particularly for populations with limited access to specialised services (13). Given the rapid growth of research on telehealth in ASD—particularly since the onset of the COVID-19 pandemic—updated evidence mapping is needed to consolidate the evidence base.

The present scoping review synthesises current evidence on the role, benefits, and challenges of telehealth in ASD management, encompassing both assessment and intervention, and aims to inform the development of accessible, effective, and sustainable services for children with ASD and their families.

MATERIAL AND METHODS

Material and study design

This scoping review was designed to provide a comprehensive overview of the role, benefits, and challenges of telehealth in ASD management, encompassing both assessment and intervention. The review was not prospectively registered; no formal risk-of-bias assessment or quantitative synthesis was conducted, consistent with the scoping review design.

Peer-reviewed journal articles published in English from January 2015 to December 2025 were eligible for inclusion. The population comprised children with ASD or suspected ASD, their caregivers, and professionals involved in ASD services; the concept was telehealth-based assessment or intervention; and the context included remotely delivered clinical or

home-based services. Studies were included if they (1) primarily examined the use of telehealth in ASD assessment and/or intervention and (2) reported outcomes related to feasibility, effectiveness, satisfaction, access, or implementation challenges. Studies were excluded if telehealth was not the primary focus within the context of ASD management or if the article did not address at least one specified outcome.

Methods

The literature search was initially conducted in January 2025 and last updated on 14 April 2026 using PubMed and Scopus. The updated search identified no additional eligible studies. The PubMed strategy was: (telehealth [MeSH] OR telemedicine [MeSH] OR telepractice OR remote delivery) AND (autistic disorder [MeSH] OR autism spectrum disorder [MeSH] OR ASD), with filters for publication years 2015–2025 and the English language. The Scopus strategy used TITLE-ABS-KEY fields: (telehealth OR telemedicine OR telepractice OR remote) AND (autism OR "autism spectrum disorder" OR ASD) AND PUBYEAR > 2014 AND PUBYEAR < 2026 AND LANGUAGE (English). All records were exported to Zotero for reference management and duplicate removal.

Study selection was conducted in two sequential stages: (1) title and abstract screening, followed by (2) full-text assessment; both stages were performed independently by three reviewers. Disagreements were resolved through structured discussion until consensus was reached. No formal inter-rater reliability statistic was computed, which is acknowledged as a limitation. The selection process is summarised in a Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA)-style flow diagram (Figure 1) (14).

For each included study, two reviewers independently extracted the following data: first author and year, country, study design, focus area (assessment or intervention), participant characteristics, study aims, telehealth modality, primary outcomes, and main findings. Extracted data were cross-checked for accuracy.

RESULTS

A total of 754 records were identified through PubMed (n = 354) and Scopus (n = 400). After removal of duplicates (n = 5), 749 records underwent title and abstract screening, of which 715 were excluded. Thirty-four reports were sought for retrieval; 22 could not be obtained due to inaccessibility through institutional subscriptions and absence of freely available versions. Twelve full-text reports were assessed for eligibility; three were excluded following full-text review. Nine studies met the inclusion criteria. The selection process is presented in Figure 1. The inability to retrieve 22 full-text reports is acknowledged as a potential source of retrieval bias, addressed in the discussion.

Most of the nine included studies were conducted in the United States.

The nine included studies used diverse research designs: two randomised controlled trials (RCTs) (15,16), three observational or mixed-methods studies (17-19), two descriptive studies (20,21), one pilot feasibility study (22), and one observational clinical study (23). Five studies focused on assessment and four on intervention (Table 1).

McNally Keehn et al. (23) conducted an observational clinical study of 335 children aged 14–78 months who underwent ASD tele-assessment using the Telehealth Assessment Protocol (TAP) as part of a standard clinical evaluation. TAP scores and other clinical characteristics were associated with diagnostic outcome, and the tool appeared useful in children aged ≥36 months with delayed language; further evaluation in controlled and real-world settings was recommended.

Wagner et al. (18) conducted a provider survey (n = 202) and analysed 204 clinical evaluations using the Telehealth Evaluation of Development for Infants, Toddlers and Preschoolers (TELE-ASD-PEDS) during the COVID-19 pandemic. Providers reported high comfort and satisfaction with the instrument. Challenges included distractions in the home environment and caregiver difficulties in adhering to structured prompting. Wagner et al. (19)

further reported that telehealth models improved access, particularly for individuals with clear symptom presentations; providers again reported high satisfaction with the TELE-ASD-PEDS instrument.

Corona et al. (15) conducted an RCT comparing TAP-based tele-assessment with in-person assessment in 144 toddlers aged 17–36 months. Diagnostic concordance between the two modalities was 92%. Caregivers and providers reported broad satisfaction. Limited access to technology or the internet was identified as a barrier disproportionately affecting families in under-resourced or rural communities.

Conner et al. (20) described caregiver involvement, child disengagement, and technology issues during tele-assessment in 13 school-age children with ASD. Both the presence and the level of active caregiver engagement influenced outcomes. Technology-related interruptions were infrequent (3.3%) and were mostly attributable to a single participant with poor connectivity.

Hao et al. (22) conducted a pilot study comparing parent-mediated teletherapy with in-person therapy in 105 parent–child pairs (40 via videoconference and 65 in person). Both modalities produced improvements in parental intervention fidelity and child language outcomes, with no statistically significant between-group differences. The study also highlighted flexibility of time and location as a potential advantage for rural families.

Johnsson et al. (17) explored practitioners' experiences of the rapid shift to teletherapy in Australia (141 therapists; 924 individuals with ASD). Effective teletherapy appeared to require ongoing practitioner training and support to adapt clinical practices, with regular updates needed to keep pace with technological advances.

Marino et al. (16) conducted a single-blind RCT in Italy evaluating a telehealth programme for social-pragmatic skills in 16 children with ASD. The experimental online group showed

no statistically significant differences from the matched in-person control group in communication, inferencing, social meaning, or Theory of Mind outcomes.

Karrim et al. (21) used a descriptive phenomenological qualitative design in South Africa, exploring six speech-language therapists' experiences of telerehabilitation for children with ASD during the COVID-19 pandemic. Benefits included caregiver satisfaction, cost-effectiveness, and improved rural access; challenges centred on caregiver digital competence and connectivity limitations.

DISCUSSION

This scoping review identified a small but growing body of evidence on the use of telehealth in autism spectrum disorder (ASD) assessment and intervention. The findings suggest that remote assessment may support diagnostic decision-making when standardised procedures and trained clinicians are available (15,18,19,24). However, the quality of assessment may also depend on the home environment and the way caregivers participate in the process. Active caregiver engagement, rather than mere presence, appears to influence assessment quality (20), highlighting the need for clear instructions and well-defined caregiver roles during remote evaluations.

For intervention, the available evidence suggests that telehealth-delivered programmes may produce outcomes comparable to in-person care in selected domains (16,22). Qualitative findings further support the feasibility and acceptability of remote intervention, although caregiver confidence, clinician adaptability, and the suitability of the home environment may affect its implementation (21). These findings should be interpreted cautiously because of the small samples and methodological limitations of the available studies.

A consistent theme was the potential of telehealth to reduce barriers related to geographical distance, waiting lists, and economic constraints. At the same time, families without reliable internet access, appropriate technology, or adequate digital skills may be disadvantaged.

Generalisability may also be limited for families facing economic barriers or requiring interpreter support (10). Telehealth may therefore improve access for some families while creating additional difficulties for others, particularly in rural and under-resourced settings. The methodological characteristics of the available literature should also be considered. Only a small proportion of the studies used randomised controlled designs, while the remainder used observational, mixed-methods, qualitative, descriptive, or pilot approaches. Small sample sizes may have limited statistical power and generalisability. In addition, several studies were conducted during the acute phase of the coronavirus disease 2019 (COVID-19) pandemic, and their findings may reflect crisis-driven adaptations rather than routine clinical practice. Provider surveys may also be affected by social desirability bias, while low response rates may reduce representativeness (18).

Across assessment and intervention, telehealth should not be regarded as a simple substitute for in-person care. Structured caregiver preparation, standardised protocols adapted for remote delivery, and ongoing professional training appear important for effective implementation. Caregiver education may improve caregiver practices and perceptions of child behaviour (25). Logistical convenience, reduced travel requirements, and a strong clinician–family relationship may also support engagement and satisfaction with remote services (10).

This scoping review has several limitations. The protocol was not prospectively registered, the search was restricted to English-language publications from two databases, and no formal risk-of-bias assessment was conducted. The inability to retrieve some full-text reports may have introduced retrieval bias. Methodological heterogeneity in study designs, participants, telehealth modalities, and outcome measures also prevented quantitative synthesis. The findings should therefore be interpreted as an overview of the available evidence rather than as definitive evidence of equivalence between telehealth and in-person care.

CONCLUSION

Available evidence suggests that telehealth may be a feasible and acceptable complement to in-person care for children with ASD, particularly where access is limited. It may support reliable remote assessment and selected interventions, but the small, heterogeneous evidence base does not establish equivalence. Technological barriers, caregiver engagement, and inequities remain important concerns. Further rigorous research should use standardised outcomes and include diverse, low-resource populations, alongside investment in clinician training and equitable digital infrastructure.

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Conflicts of interest: None to declare.

Author contributions (CRediT): Conceptualization—G.D.; methodology—V.G.; data curation—G.D. and V.G.; writing—original draft—G.D.; writing—review and editing—V.G., E.S., and B.E.; supervision—Y.A. and D.T.; project administration—G.D. All authors have read and agreed to the published version of the manuscript.

Data availability statement: No primary data were collected or generated for this study. All data supporting the findings of this review are available within the published literature cited herein.

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TABLES AND FIGURES

Table 1. Summary of included studies on telehealth in autism spectrum disorder (ASD)

Author (year)	Country	Design	Area	Participants	Aim(s)	Main findings
McNally Keehn et al. (2023) (23)	USA	Observational clinical study	A	n = 335; age 14–78 months	Examine associations between clinical characteristics and diagnostic outcome during standard TAP-based tele-assessment.	A definitive diagnostic decision was reached for most children; TAP scores and clinical characteristics were associated with diagnostic outcome; TAP appeared useful in children aged ≥36 months with delayed language.
Wagner et al. (2021) (18)	USA	Observational, mixed-methods	A	n = 202 providers; 204 evaluations; age 16–36 months	Assess tele-assessment use and provider comfort/satisfaction with TELE-ASD-PEDS.	High provider comfort/satisfaction; improved access for remote families. Challenges: home distractions and caregiver adherence.
Wagner et al. (2022) (19)	USA	Observational, mixed-methods	A	Providers and caregivers of children referred for ASD evaluation	Assess transition to telemedicine for ASD diagnosis during COVID-19.	Improved access, especially for clear symptom presentation; high satisfaction; home distractions noted.
Corona et al. (2024) (15)	USA	RCT	A	n = 144; age 17–36 months; 71% male	Compare TAP/TELE-ASD-PEDS tele-assessment with in-person assessment.	92% diagnostic concordance with in-person assessment; high satisfaction; technology/internet access was a barrier in under-resourced families.
Conner et al. (2022) (20)	USA	Descriptive quantitative	A	n = 13 children with ASD; mean age 7y 11m	Examine caregiver involvement, child disengagement and technology issues during tele-assessment.	Active caregiver engagement influenced outcomes; technology interruptions were rare (3.3%), mostly in one participant.
Hao et al. (2021) (22)	USA	Pilot study	I	n = 105 parent–child pairs; 40 online, 65 in-person	Compare parent-mediated teletherapy with in-person therapy.	Both groups improved; no statistically significant between-group differences were detected; teletherapy may improve rural access.
Johnsson et al. (2021) (17)	Australia	Mixed-methods	I	n = 141 practitioners; 924 individuals with ASD and/or caregivers	Explore practitioner perspectives on the COVID-19-driven shift to teletherapy.	ASD teletherapy required ongoing practitioner training/support and regular technology updates.
Marino et al. (2023) (16)	Italy	Single-blind RCT	I	n = 16 children with ASD (enrolled from initial 42)	Evaluate a telehealth programme for social-pragmatic skills versus in-person care.	No statistically significant between-group differences were detected in communication, inferencing, social meaning, or Theory of Mind.
Karrim et al. (2022) (21)	South Africa	Descriptive phenomenological qualitative	I	n = 6 speech-language therapists	Explore SLT experiences of telerehabilitation for children with ASD during COVID-19.	Telerehabilitation was feasible as an SLT alternative. Benefits: caregiver satisfaction, cost reduction and rural access. Challenges: digital competence and connectivity.

A, assessment; ASD, autism spectrum disorder; COVID-19, coronavirus disease 2019; I, intervention; n, number; RCT, randomised controlled trial; SLT, speech-language therapist; TAP, Telehealth Assessment Protocol; TELE-ASD-PEDS, Telehealth Evaluation of Development for Infants, Toddlers and Preschoolers; y, years; m, months.

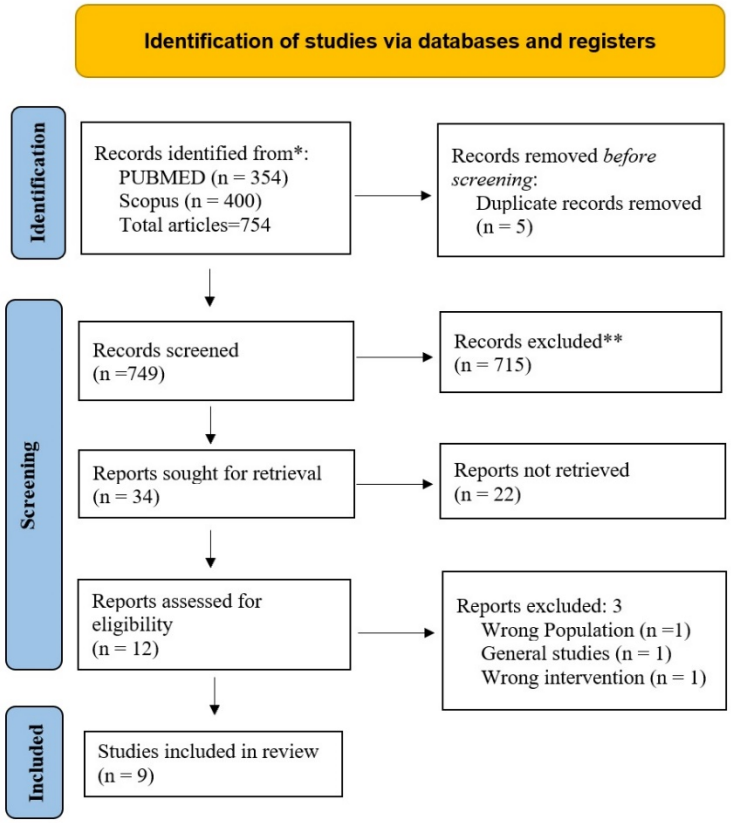

Figure 1. Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA)-style flow diagram of the study selection process