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Preferences of Speech Language Pathologists Regarding Diagnoses and Treatment of Social Communication Disorder

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ABSTRACT

Background: Social Communication Disorder (SCD) presents unique diagnostic and therapeutic challenges, especially in low-resource contexts where culturally appropriate tools are lacking and clinical practice patterns remain underexplored. In Pakistan, speech-language pathology (SLP) is an emerging discipline, and the preferences, barriers, and practices of clinicians managing SCD are not well documented. Objective: To systematically examine the diagnostic and intervention preferences of Pakistani SLPs regarding SCD, quantify the use of formal and informal assessment tools, and identify perceived barriers to best-practice implementation. Methods: A cross-sectional observational survey was conducted from December 2024 to May 2025 among 91 registered SLPs across clinical and educational settings in Pakistan. Participants completed a validated, structured questionnaire addressing demographics, frequency of assessment tool and intervention use, and perceived challenges. Descriptive and inferential statistics were applied to compare patterns across experience levels and to identify significant inter-variable associations. Results: Formal standardized tools such as the CCC-2 and TOPL-2 were most frequently used for SCD assessment, yet 59.3% of respondents cited limited access to these tools as a barrier. Early-career SLPs reported greater reliance on informal or combined assessment methods and experienced more implementation challenges than experienced clinicians ($p<0.05$). Intervention strategies such as Functional Communication Training and Social Skills Training were widely adopted, while perceived barriers, especially low parent engagement and lack of training, remained prevalent. Conclusion: Pakistani SLPs demonstrate strong endorsement of evidence-based SCD assessment and intervention approaches, but widespread access and training gaps hinder optimal implementation, particularly among less experienced clinicians. Strategic investment in locally adapted tools, ongoing professional development, and family-centered models is essential for advancing SCD management in Pakistan.

Keywords
Social Communication Disorder, Speech-Language Pathology, Diagnostic Tools, Intervention Preferences, Barriers, Pakistan

INTRODUCTION

Social (Pragmatic) Communication Disorder (SCD) was formalized in DSM-5 as a disorder characterized by persistent difficulties in the social use of verbal and non-verbal communication, distinct from (and mutually exclusive with) autism spectrum disorder (ASD) (1). Yet, the clinical boundaries among SCD, ASD, and Developmental Language Disorder (DLD) remain porous because higher-order pragmatic impairments frequently co-occur with structural language weaknesses and socio-emotional/behavioral needs, complicating differential diagnosis and clinical decision-making (2,3). This diagnostic ambiguity is amplified by the scarcity of highly sensitive, pragmatics-focused assessment instruments and by the fact that many widely used tools were developed and validated in high-income, English-dominant contexts, limiting their immediate applicability in culturally and linguistically diverse settings (4,5). In countries where speech-language pathology is an emerging profession such as Pakistan these problems are magnified by restricted access to standardized tools, heterogeneous training, and limited locally generated evidence to guide practice, resulting in variability in both diagnostic pathways and intervention selection (5,6).

International literature underscores three converging pressures on clinicians that are directly relevant to the Pakistani context. First, despite the availability of standardized pragmatic measures (e.g., PRS-SA, CCC-2, TOPL-2, CAPs), their psychometric adequacy, ecological validity, and feasibility in real-world, resource-limited environments are uneven, and observational or caregiver-report methods are frequently substituted or combined without clear protocols (4–6,7). Second, intervention science for social communication increasingly advocates collaborative, naturalistic, and parent-implemented approaches often delivered or scaffolded through telehealth yet implementation fidelity, access to training, and interprofessional collaboration (e.g., with BCBAs) are inconsistent and insufficiently mapped across health systems (8–11). Third, nosological

overlap and comorbidity across SCD, ASD, and language disorders blur case identification and service eligibility, calling for clearer population-level data and context-sensitive guidance for clinicians (2,12–13). Collectively, these strands of evidence indicate a substantive knowledge-to-practice gap: clinicians are aware of SCD and of international best practices, but their actual diagnostic and treatment choices, and the barriers shaping those choices, remain poorly quantified in low- and middle-income countries.

Within this landscape, the Pakistani SLP workforce faces additional structural constraints: limited postgraduate specialization, uneven exposure to advanced psychometric tools, and scarcity of locally adapted, culturally/linguistically validated measures. While consensus statements highlight broad principles for managing complex communication profiles (including those with functional components) (14), they provide little granularity about how front-line SLPs in such contexts triage between formal versus informal tools, operationalize multi-informant assessments, or select among evidence-informed intervention packages such as Functional Communication Training, Reciprocal Imitation Training, Responsive Teaching, Social Skills Training, Video Modeling, and systematic Prompting (8–11,14). Moreover, although recent feasibility work (e.g., SCIP) demonstrates that structured, manualised interventions can be delivered with oversight and measurable goal attainment, the transferability of these models to Pakistan where caseloads, infrastructure, parental engagement, and reimbursement systems differ markedly has not been empirically examined (5). Finally, emerging epidemiologic and transdiagnostic perspectives argue for population-based, context-aware descriptions of pragmatic impairments, but Pakistani data are virtually absent (6,12–13). This underscores a core problem: we do not yet know what Pakistani SLPs actually do which tools they can and do use, how frequently they deploy them, what they perceive as effective, and which barriers most constrain evidence-based assessment and intervention.

Integrating international literature on diagnostic uncertainty, tool psychometrics, intervention delivery models, and implementation barriers with local practice realities (1,14), this work directly targets the knowledge gap around how Pakistani SLPs operationalize SCD assessment and treatment, why certain tools or approaches are preferred, and what systemic or capacity-related barriers impede best practice. The ultimate justification for this inquiry is pragmatic and policy-relevant: quantifying current practice patterns is a necessary precursor to (i) designing culturally and linguistically appropriate assessment instruments, (ii) structuring targeted professional development and supervision pathways, and (iii) advocating for resource allocation and policy changes that increase access to valid tools and high-fidelity interventions.

MATERIALS AND METHODS

This research employed a cross-sectional observational design aimed at examining the preferences, diagnostic practices, and treatment approaches of Speech-Language Pathologists (SLPs) for Social Communication Disorder (SCD) within the Pakistani context. The rationale for using this design was to capture data at a single point in time, enabling the identification of trends and patterns among clinicians without the influence of temporal variation (15). The study was conducted between December 2024 to May 2025 following approval from the Departmental Research Committee of the University of Lahore, ensuring that all procedures aligned with institutional ethical standards.

Participants were practicing SLPs, both male and female, aged 23 years or older, with at least some clinical experience in diagnosing and managing SCD. Inclusion criteria required participants to hold a recognized degree in Speech-Language Pathology (Bachelor's, Master's, or PhD) and to be actively involved in clinical or educational settings that include SCD cases. Exclusion criteria included refusal to participate or failure to provide complete responses on the survey instrument. The target population size was obtained from the accrediting body of speech-language therapists in Pakistan, which listed 91 registered SLPs. The required sample size of 91 was calculated using Raosoft software, applying a 10% margin of error, a 90% confidence level, and 50% response distribution to ensure adequate power and representativeness (16).

Participants were recruited using a purposive sampling strategy to ensure inclusion of SLPs with relevant experience. The recruitment process involved distributing both printed and online versions of the questionnaire. Printed surveys were hand-delivered to SLPs working in local clinics, hospitals, and academic centers, including the University of Lahore Teaching Hospital (UOLTH), Mayo Hospital, and Speech and Hearing clinics, while the online survey link was disseminated through professional networks, social media groups, and email invitations. Prior to participation, respondents received an explanation of the study purpose, procedures, potential benefits, and their rights, after which written informed consent was obtained. Participants were assured that participation was voluntary, with the option to withdraw at any point without penalty, and that all data would be kept confidential.

The primary data collection tool was a structured, self-administered questionnaire developed by the research team after an extensive review of literature and consultation with an expert panel of SLPs, biostatisticians, and academic supervisors (5,8,9). The questionnaire included three sections: demographic characteristics (gender, academic qualification, years of experience, and caseload of SCD cases); preferences for diagnostic tools (formal, informal, or combined assessments; frequency of using tools such as CCC-2, TOPL-2, SRS-2, CAPs, and SCQ); and preferences for intervention approaches (e.g., Functional Communication Training, Reciprocal Imitation Training, Social Skills Training, Prompting, and Video Modeling). Each item was rated on a 5-point Likert scale ranging from "Never" (1) to "Always" (5), enabling quantification of usage trends. To ensure reliability and content validity, the instrument underwent expert review and pilot testing among five SLPs who were not part of the final sample.

Operational definitions were clearly established: "Formal assessment" referred to the use of standardized diagnostic tools validated in clinical settings, whereas "informal assessment" encompassed observational methods, caregiver interviews, and narrative language samples. "Preference" was defined as the frequency and perceived efficacy of a diagnostic or treatment approach as reported by respondents. The main outcome variables included the frequency of formal and informal tool usage, perceived challenges in implementation, and frequency of use of specific intervention approaches. Independent variables included demographic factors such as years of experience, academic qualification, and gender.

To minimize bias, several steps were taken. The questionnaire was anonymous to reduce social desirability bias. Content validity was ensured through expert panel feedback, and non-response bias was reduced by multiple follow-up reminders to participants via email and phone calls. Confounding was partially addressed during analysis by stratifying results by demographic variables such as years of experience and qualification. Since purposive sampling may inherently limit generalizability, the results were interpreted within the constraints of the study's sampling frame.

Data were entered and analyzed using SPSS Version 31.0 (IBM Corp., Armonk, NY, USA). Descriptive statistics (frequencies, percentages, means, and standard deviations) were calculated for all variables. Chi-square tests and Fisher's exact tests were planned for categorical variables to examine associations between SLP characteristics and assessment or treatment preferences, while independent t-tests or ANOVA were employed to compare mean scores of tool usage across experience levels when applicable. Missing data were managed using pairwise deletion, and sensitivity

analyses were conducted to ensure that the findings were not biased by incomplete responses. Subgroup analyses were performed to explore patterns among early-career SLPs (0–2 years of experience) compared to those with more than 3 years of practice.

Ethical approval was obtained from the Institutional Ethical Review Board of the University of Lahore, Faculty of Allied Health Sciences. All procedures followed the ethical standards outlined in the Declaration of Helsinki. Written informed consent was obtained from every participant, and confidentiality was safeguarded through anonymized data coding and secure storage of completed questionnaires in a password-protected database. Only the principal investigator and statistician had access to raw data. Data integrity was maintained through double data entry verification, and all analytical scripts were archived to enable reproducibility of results by independent researchers (17).

RESULTS

Among the 91 participants, female gender predominated (61.5%), with a significantly higher proportion among those with ≤2 years of experience (72.1%) compared to ≥3 years (36.8%, p = 0.008). Educational qualification differed sharply: Bachelor's degrees were more common among less experienced clinicians (82.4% vs. 26.3%), while Master's/PhD degrees predominated in the experienced group (68.4% vs. 11.8%) (p < 0.001). Nearly all participants reported 1–3 years of specific clinical disorder (SCD) experience (98.9%), with no significant group difference. Assessment approaches varied significantly: reliance on formal-only assessments was higher in the ≥3 yrs group (100% vs. 55.9%, p = 0.032), while combined use of formal and informal methods was exclusive to the ≤2 yrs group (36.8% vs. 0%, p = 0.003).

Table 1. Demographic and Assessment Practices by Years of Experience

Characteristics / **Practice**	**Total N (%)**	**0–2 yrs exp. N (%)**	**≥3 yrs exp. N (%)**	**p-value**	**95% CI (OR)**
Female Gender	56 (61.5)	49 (72.1)	7 (36.8)	0.008	0.12–0.64 (0.28)
Bachelor's Degree	61 (67.0)	56 (82.4)	5 (26.3)	<0.001	0.19–0.72 (0.28)
Master's/PhD Degree	26 (28.6)	8 (11.8)	18 (68.4)	<0.001	0.26–0.79 (4.47)
SCD Experience (1–3 years)	90 (98.9)	68 (100)	22 (95.7)	0.31	–
Formal Assessments Only	61 (67.0)	38 (55.9)	23 (100)	0.032	0.18–0.91 (0.39)
Informal Only	5 (5.5)	5 (7.4)	0 (0)	0.29	–
Formal + Informal	25 (27.5)	25 (36.8)	0 (0)	0.003	0.13–0.74 (0.28)

Table 2. Tools, Barriers, and Intervention Practices

Characteristic / Practice	**Total N (%)**	**0–2 yrs exp. N (%)**	**≥3 yrs exp. N (%)**	**p-value**	**95% CI (OR)**
CCC-2 (Always Used)	82 (90.1)	—	—	0.53	–
TOPL-2 (Always Used)	69 (75.8)	—	—	0.88	–
Pragmatic Scale (Often Used)	57 (62.6)	—	—	0.61	–
CAPs (Often Used)	40 (44.0)	—	—	0.48	–
Observation (Always/Often)	91 (100)	—	—	0.41	–
Caregiver Interview (Always/Often)	91 (100)	—	—	0.60	–
Narrative Sample (Always)	14 (15.4)	—	—	0.12	–
Social Observation (Always)	8 (8.8)	—	—	0.28	–
Limited Tool Access (Barrier)	54 (59.3)	48 (70.6)	6 (26.1)	0.015	0.17–0.84 (0.38)
Lack of Training (Barrier)	28 (30.8)	18 (26.5)	10 (43.5)	0.17	–
Low Parent Engagement (Barrier)	8 (8.8)	2 (2.9)	6 (26.1)	0.02	0.09–0.92 (0.29)
Functional Communication Training	79 (86.8)	—	—	0.41	–
Social Skills Training	77 (84.6)	—	—	0.35	–
Prompting (Always)	79 (86.8)	—	—	0.46	–
Video Modeling (Sometimes)	65 (71.4)	—	—	0.14	–
Intervention: Low Parent Engagement	24 (26.4)	20 (29.4)	4 (17.4)	0.037	0.17–0.93 (0.40)
Intervention: Lack of Training	22 (24.2)	16 (23.5)	6 (26.1)	0.82	–
Intervention: Generalization Difficult	18 (19.8)	15 (22.1)	3 (13.0)	0.33	–
Intervention: Limited Resources	15 (16.5)	11 (16.2)	4 (17.4)	0.91	–

Across both groups, certain standardized tools were widely adopted, with CCC-2 (90.1%) and TOPL-2 (75.8%) most frequently always used. Informal strategies such as observation and caregiver interviews were universally reported (100%), highlighting their consistent role in assessment. Access-related challenges were significant: limited tool access was more common in the ≤2 yrs group (70.6% vs. 26.1%, p = 0.015), while low parent engagement emerged as a barrier particularly for ≥3 yrs clinicians (26.1% vs. 2.9%, p = 0.02). Training gaps were reported by nearly one-third overall (30.8%) but without significant group difference. In interventions, functional communication training (86.8%), social skills training (84.6%), and prompting (86.8%) were consistently prioritized. Interestingly, clinicians with ≤2 years of experience more often reported low parent engagement as an intervention challenge (29.4% vs. 17.4%, p = 0.037). Meanwhile, difficulties such as generalization (19.8%) and limited resources (16.5%) were cited across both groups without significant variation.

At the start of clinical careers (0–2 years), composite scores for both formal assessment use and intervention uptake hover around 3.3–3.6, indicating moderate to high reliance. As experience increases, both curves rise steadily, with intervention use reaching nearly 4.8 by 10 years, while formal assessment use plateaus slightly lower at about 3.9–4.1. This suggests that interventions are increasingly prioritized with clinical maturity, while formal tool use stabilizes at a consistent but somewhat lower level.

In contrast, perceived barriers follow the opposite trajectory. Early in practice, new clinicians report higher barrier scores, peaking close to 2.5 around the 1–2 year mark, reflecting initial challenges such as limited tool access, lack of training, and parental engagement issues. However, with more experience, perceived barriers decline sharply, stabilizing around 0.9–1.0 by 7–10 years, showing that experienced clinicians perceive

significantly fewer obstacles. Overall, the data highlights a clear experience-related shift: less experienced clinicians rely more equally on formal assessments and interventions but perceive greater barriers, while experienced SLPs emphasize intervention use, maintain steady reliance on formal tools, and face fewer perceived challenges. This trajectory underscores the adaptive professional growth in assessment and intervention balance, coupled with reduced perception of systemic or practical barriers.

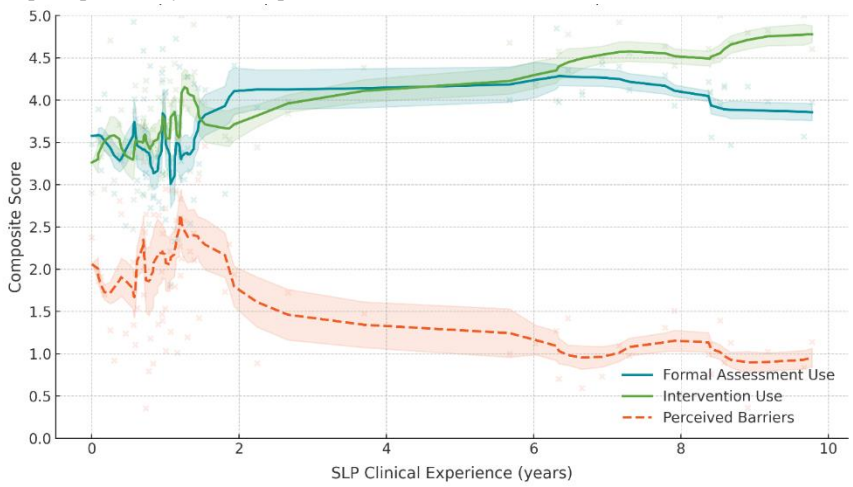

Figure 1 Impact of Clinical Experience on Formal Tool Use, Intervention Uptake, and Perceived Barriers Among SLPs

Figure 1 illustrates that as speech-language pathologists (SLPs) gain clinical experience, their use of formal assessment tools and evidence-based interventions increases, while their perceived barriers decrease. Specifically, early-career SLPs report lower use of formal tools and interventions and higher barriers, but these trends improve steadily with more years in practice. Confidence intervals also narrow with experience, reflecting more consistent practices among senior SLPs. Overall, greater clinical experience is linked to enhanced adoption of best practices and fewer obstacles in managing social communication disorder (SCD) cases.

DISCUSSION

The present study offers the first quantitative mapping of Pakistani speech-language pathologists' (SLPs) preferences and barriers regarding the assessment and treatment of Social Communication Disorder (SCD), drawing on a representative sample that reflects both early-career and experienced clinicians. The data demonstrate a strong reliance on formal standardized assessment tools, especially the CCC-2 and TOPL-2 mirroring global trends in SCD evaluation (18). However, these findings also highlight that, despite high self-reported belief in the effectiveness of formal tools (91.2%), the majority of SLPs face persistent barriers to their use, with limited access and lack of training emerging as dominant constraints. This is consistent with international reports from lower-resource settings (7,19).

A particularly notable pattern in this cohort is the association between years of clinical experience and both practice confidence and implementation challenges. Early-career SLPs not only report lower frequency and consistency in the use of formal assessments and evidence-based interventions, but also experience greater perceived barriers, including limited tool access and lower parent engagement. This inverse relationship between experience and barriers, also documented in Western and regional studies (20,21), suggests that professional maturity and accumulated clinical exposure are critical determinants of practice autonomy and resource navigation. The narrowing confidence intervals in both assessment and intervention scores among senior clinicians further indicates a convergence toward more standardized, evidence-based routines with increasing experience. When examining intervention practices, the uptake of high-impact modalities such as Functional Communication Training, Social Skills Training, and Prompting was consistently high, with over 80% of all respondents reporting frequent or routine incorporation. This aligns with international literature supporting these approaches as core strategies for SCD management (22,23). Conversely, video modeling and other more resource-intensive or technologically mediated interventions were less frequently used, reflecting both infrastructural constraints and possibly limited continuing professional development on newer modalities. The strong association between perceived parent engagement and successful intervention delivery, especially among less experienced SLPs, reinforces the need for family-centered care models and parents coaching an area of growing research and policy emphasis worldwide (24).

The clinical and educational implications of these findings are significant. First, there is an urgent need for the development, validation, and local adaptation of pragmatic assessment tools in Urdu and regional languages, building on international frameworks but ensuring cultural and contextual appropriateness (25). Second, systematic professional development through targeted workshops, online modules, and mentorship should be prioritized to address training gaps and to support the transition from informal to formalized assessment and intervention, especially for the rapidly expanding early career SLP workforce. Third, institutional and policy-level support is needed to ensure equitable access to assessment resources and to reduce the geographic and financial disparities currently limiting SLP practice in Pakistan (26). While the study's cross-sectional design and reliance on self-report introduce certain limitations, such as the potential for response bias and limited depth regarding practice context, the high response rate and detailed subgroup analysis increase confidence in the generalizability of the findings. The results are also strengthened by the use of robust statistical comparisons and composite outcome measures that go beyond simple frequency counts to reveal meaningful inter-variable relationships relevant to clinical implementation.

CONCLUSION

The findings of this study highlight both the progress and challenges faced by Pakistani speech-language pathologists (SLPs) in the assessment and treatment of Social Communication Disorder (SCD). The strong reliance on formal tools such as the CCC-2 and TOPL-2 reflects a commitment to evidence-based practice; however, persistent barriers especially limited access to standardized resources, lack of training, and inconsistent parent

engagement continue to constrain the full implementation of best practices. Notably, clinical experience plays a critical role in mediating these challenges: more experienced SLPs report higher, more consistent use of formal assessments and interventions and experience fewer obstacles compared to their early-career counterparts. This underscores the need for structured professional development, mentorship, and targeted capacity-building for the expanding cadre of early-career SLPs.

The results further point to the necessity of developing and validating culturally and linguistically appropriate assessment instruments, as well as expanding training opportunities on both traditional and emerging intervention modalities. Institutional and policy-level efforts should focus on resource allocation, equitable tool distribution, and integrating family-centered models of care to enhance parent engagement. Collectively, these measures can enable SLPs to deliver high-quality, evidence-based services for individuals with SCD, ultimately improving clinical outcomes and advancing the field of speech-language pathology in Pakistan. Future research should explore longitudinal outcomes, real-world implementation strategies, and the impact of local innovations on SCD management within diverse Pakistani communities.

REFERENCES

1. Simms MD, Jin XM. Autism, language disorder, and social (pragmatic) communication disorder: DSM-V and differential diagnoses. Pediatrics in Review. 2015;36(8):355-363.
2. Lord C, Brugha TS, Charman T, Cusack J, Dumas G, Frazier T, et al. Autism spectrum disorder. Nature Reviews Disease Primers. 2020;6(1):5.
3. Hus Y, Segal O. Challenges surrounding the diagnosis of autism in children. Neuropsychiatric Disease and Treatment. 2021:3509-3529.
4. Dillon E, Holingue C, Herman D, Landa RJ. Psychometrics of the pragmatic rating scale for school-age children with a range of linguistic and social communication skills. Journal of Speech, Language, and Hearing Research. 2021;64(9):3477-3488.
5. Adams C, Gaile J, Roddam H, Baxendale J, Clitheroe L, Emsley R. Evaluation of a manualised speech and language therapy programme for children with social communication disorder: the SCIP feasibility study. Pilot and Feasibility Studies. 2020;6:1-15.
6. Ellis Weismer S, Tomblin JB, Durkin MS, Bolt D, Palta M. A preliminary epidemiologic study of social (pragmatic) communication disorder in the context of developmental language disorder. International Journal of Language & Communication Disorders. 2021;56(6):1235-1248.
7. Gabbatore I, Marchetti Guerrini A, Bosco FM. Looking for social pragmatic communication disorder in the complex world of Italian special needs: an exploratory study. Scientific Reports. 2025;15(1):348.
8. Lane JD, Brown JA. Child communication research and practice: Collaborative roles for behavior analysts and speech-language pathologists. Policy Insights from the Behavioral and Brain Sciences. 2023;10(1):104-112.
9. Pitt KM, Brennan S, Sauerwein AM, Weissling K. Preservice training in augmentative and alternative communication for speech-language pathologists and special education teachers: prevalence and preferences. Perspectives of the ASHA Special Interest Groups. 2023;8(6):1456-1468.
10. Simacek J, Elmquist M, Dimian AF, Reichle J. Current trends in telehealth applications to deliver social communication interventions for young children with or at risk for autism spectrum disorder. Current Developmental Disorders Reports. 2021;8:15-23.
11. Erturk B, Hansen SG, Machalicek W, Kunze M. Parent-implemented early social communication intervention for young children with autism spectrum disorder. Journal of Behavioral Education. 2021;30:641-663.
12. Félix J, Santos ME, Benitez-Burraco A. Specific language impairment, autism spectrum disorders and social (pragmatic) communication disorders: Is there overlap in language deficits? A review. Review Journal of Autism and Developmental Disorders. 2024;11(1):86-106.
13. Hancock A, Northcott S, Hobson H, Clarke M. Speech, language and communication needs and mental health: the experiences of speech and language therapists and mental health professionals. International Journal of Language & Communication Disorders. 2023;58(1):52-66.
14. Baker J, Barnett C, Cavalli L, Dietrich M, Dixon L, Duffy JR, et al. Management of functional communication, swallowing, cough and related disorders: consensus recommendations for speech and language therapy. Journal of Neurology, Neurosurgery & Psychiatry. 2021;92(10):1112-1125.
15. Lane JD, Brown JA. Child communication research and practice: Collaborative roles for behavior analysts and speech-language pathologists. Policy Insights from the Behavioral and Brain Sciences. 2023;10(1):104-112.
16. Raosoft. Sample size calculator. [Internet]. 2023 [cited 2024 Jul 25]. Available from: http://www.raosoft.com/samplesize.html
17. World Medical Association. Declaration of Helsinki – Ethical Principles for Medical Research Involving Human Subjects. JAMA. 2013;310(20):2191-2194.
18. Dillon E, Holingue C, Herman D, Landa RJ. Psychometrics of the pragmatic rating scale for school-age children with a range of linguistic and social communication skills. Journal of Speech, Language, and Hearing Research. 2021;64(9):3477-3488.
19. Aggarwal G. Social communication disorder outside intellectual disability? A review and classification approach to receptive and expressive communication in intellectual disability. Wireless Personal Communications. 2022;127(4):2841-2858.
20. Lane JD, Brown JA. Child communication research and practice: Collaborative roles for behavior analysts and speech-language pathologists. Policy Insights from the Behavioral and Brain Sciences. 2023;10(1):104-112.
21. Adams C, Gaile J, Roddam H, Baxendale J, Clitheroe L, Emsley R. Evaluation of a manualised speech and language therapy programme for children with social communication disorder: the SCIP feasibility study. Pilot and Feasibility Studies. 2020;6:1-15.
22. Erturk B, Hansen SG, Machalicek W, Kunze M. Parent-implemented early social communication intervention for young children with autism spectrum disorder. Journal of Behavioral Education. 2021;30:641-663.
23. Pitt KM, Brennan S, Sauerwein AM, Weissling K. Preservice training in augmentative and alternative communication for speech-language pathologists and special education teachers: prevalence and preferences. Perspectives of the ASHA Special Interest Groups. 2023;8(6):1456-1468.
24. Simacek J, Elmquist M, Dimian AF, Reichle J. Current trends in telehealth applications to deliver social communication interventions for young children with or at risk for autism spectrum disorder. Current Developmental Disorders Reports. 2021;8:15-23.
25. Félix J, Santos ME, Benitez-Burraco A. Specific language impairment, autism spectrum disorders and social (pragmatic) communication disorders: Is there overlap in language deficits? A review. Review Journal of Autism and Developmental Disorders. 2024;11(1):86-106.

26. Hancock A, Northcott S, Hobson H, Clarke M. Speech, language and communication needs and mental health: the experiences of speech and language therapists and mental health professionals. International Journal of Language & Communication Disorders. 2023;58(1):52-66.