Jurnal EVOLUSI

BEHAVIORAL ANALYSIS OF NON-VERBAL COMMUNICATION IN CHILDREN WITH AUTISTIC SPECTRUM DISORDER (ASD)

Nur Alesya Balqis Sulaiman[1], A'ina Athirah Ahmad Sabri[2]

[1&2] *Faculty of Education, Social Science and Humanities, Universiti Poly-Tech Malaysia, Malaysia*

Corresponding Author: *athirah@uptm.edu.my*

ABSTRACT

This study examined the non-verbal communication strategies used by autistic children in classroom settings, focusing on gestures, facial expressions, and body movements. Many autistic children experience difficulties with verbal communication, making non-verbal cues essential for expressing emotions, needs, and intentions. However, these cues are often subtle, repetitive, or inconsistent, which creates challenges for teachers and caregivers to interpret them effectively. This research aims to understand how these children communicate non-verbally and the difficulties educators face in recognising these behaviours. Data were collected through classroom observations and interviews with experienced special education teachers. The findings revealed that while autistic children commonly use non-verbal communication, the lack of consistency and clarity in these cues often hinders effective interaction. The study highlights the need for better training and support for teachers to enhance their understanding and interpretation of non-verbal behaviours. It contributes to improving inclusive education and communication strategies for autistic children.

Keywords: Qualitative Study, Non-Verbal Autism Spectrum Disorder (ASD), Pusat Pendidikan Khas Integrasi (PPKI)

INTRODUCTION

Children with Autistic Spectrum Disorder (ASD) often face significant challenges in verbal communication, leading them to rely heavily on non-verbal communication methods such as gestures, facial expressions, and body movements to express their thoughts, emotions, and needs. However, these non-verbal cues can be subtle, repetitive, or misinterpreted, making it difficult for their caregivers and educators to understand the child's intentions fully. Previous research by Lorah et al. (2020) has shown that autistic children tend to display non-verbal behaviours differently from neurotypical children, such as limited eye contact, restricted facial expressions, or idiosyncratic gestures, which can lead to challenges in social interaction and communication. As a result, educators may struggle to respond appropriately, which further limits the development of the child's communication skills and social integration in the classroom setting. However, despite growing scholarly attention to communication difficulties in ASD, there remains a lack of in-depth qualitative research that documents how non-verbal children with ASD naturally manifest communication in everyday classroom settings and how educators interpret and manage these behaviours

during teaching and learning activities. This gap highlights the need for a contextualised qualitative investigation that explores non-verbal communication patterns and teacher interpretation in special education classrooms.

Moreover, as stated by Mayson F. & Cynthia J. (2019), the understanding of non-verbal communication in autistic children is crucial for improving their interaction with others. Identifying and interpreting these cues can significantly enhance communication effectiveness, providing insights into their emotional and cognitive states, even in the absence of verbal language. Additionally, as highlighted by Baker et al. (2019), fostering a deeper understanding of these non-verbal cues can lead to better outcomes in education and socialisation, as caregivers and teachers could provide a better response to the unique communication needs of autistic children. This study aims to address the gap in knowledge by exploring how autistic children use non-verbal communication and offering strategies for identifying, interpreting, and supporting these cues, ultimately improving communication and social interactions in various contexts.

LITERATURE REVIEW

2.1 Reliance on Non-Verbal Communication for Expression

Children with Autism Spectrum Disorder (ASD) often rely on non-verbal communication to express themselves, especially when they face difficulties with verbal language. This includes using facial expressions, eye contact, body posture, gestures, and even touch as their primary modes of interaction. According to Safira et al. (2020), these children frequently use kinesics (body language and movements) to communicate emotions or make requests. For instance, a gesture like clapping hands may indicate joy in one situation or a request for attention in another, depending on the context. This highlights the importance of understanding the meaning behind each non-verbal cue, as it is not always universal and can vary based on the child's developmental level and individual behavior. Creswell and Poth (2019) mentioned that teachers, caregivers, and parents must learn to observe and interpret these subtle signals to support the child's emotional and social needs more effectively. Additionally, Molbaek and Kristenses (2020) stated that proper awareness and understanding of these non-verbal expressions can help build stronger connections and promote meaningful communication with autistic children.

2.2 Limited Use and Understanding of Gestures

One of the common challenges among children with ASD is the limited use of gestures and a reduced ability to understand the gestures of others. Research by McKern et al. (2023) found that autistic children tend to use fewer hand movements, such as pointing, waving, or signaling, which are commonly used by neurotypical children to support verbal communication or replace it when words fail. Trujillo et al. (2021) also revealed that autistic children not only use fewer gestures but also face significant difficulties in interpreting others' gestures accurately. This limitation can lead to breakdowns in communication and frustration, both for the child and the people interacting with them. According to Lord et al. (2019), it becomes difficult for autistic children to participate in social situations where body language plays a key role, such as during playtime, classroom discussions, or family interactions. Therefore, as stated by Molbaek and Kristensen (2020), it is important for adults working with these children to provide consistent visual support, use clear and exaggerated gestures, and model non-verbal behaviors to encourage better understanding and use of body language.

2.3 Challenges in Recognizing Facial Expressions

Interpreting facial expressions is a critical aspect of non-verbal communication, but it remains a major obstacle for many children with ASD. According to Griffiths et al. (2019), these children often have difficulty identifying basic emotions such as happiness, sadness, fear, or anger from facial cues. This challenge affects their ability to understand how others are feeling, which is crucial for forming relationships and engaging in social interactions. Additionally, Ghosn et al. (2019) and Green et al. (2021) found that autistic children tend to focus on individual facial features — like the mouth or eyes — rather than viewing the entire face as a whole. This selective attention limits their ability to interpret the overall emotional expression accurately. As a result, social situations can become confusing or overwhelming for them, leading to withdrawal or inappropriate responses. To help address this issue, experts suggest implementing emotion-recognition training programs that use visual aids, interactive activities, and role-play to gradually improve autistic children's ability to read and respond to facial expressions (Creswell and Poth 2019 ; Molbaek and Kristensen 2020).. Over time, this can significantly enhance their social confidence and emotional understanding

METHODOLOGY

This study adopted a qualitative research design to explore non-verbal communication, such as gestures, facial expressions, and body movements among 9-year-old autistic children. This approach allowed for in-depth observation of how these children communicated in real classroom settings (Creswell & Poth, 2019). Data were collected through structured classroom observations and semi-structured interviews with teachers and caregivers, focusing on behaviors like eye contact, repetitive movements, and facial expressions (Lord et al., 2020). Descriptive analysis was used to identify patterns and themes in the data.

The participants consisted of four autistic children enrolled in a special education program, along with their teachers and caregivers, selected through purposive sampling. Informed consent was obtained, and confidentiality was ensured in line with ethical research guidelines (Hayes, 2021). The study was conducted at a Pusat Pendidikan Khas Integrasi (PPKI) primary school in Selangor, which provided a suitable environment for observing non-verbal interactions. The aim was to offer practical insights to support improved communication strategies for autistic children in Malaysian schools.

FINDINGS AND DISCUSSION

This section is organized to explain the different ways non-verbal autistic children communicate and the challenges teachers face in understanding them. The information is divided into sections that focus on things like how these students use physical actions to communicate, how they show emotions, and how they mostly communicate for specific needs. Each section starts by describing what was found, then includes quotes from interviews and examples from classroom observations. The findings are also supported by research to help explain the results. This approach helps to clearly explain the different ways these students communicate and what teachers need to do to support them better.

Classroom Strategies Non-Verbal Autistic Children Use to Engage and Express Emotions

In the classroom, non-verbal autistic children often develop unique ways to connect with others and express how they feel. Since they cannot rely on spoken language, these children use alternative strategies such as gestures, facial expressions, or visual tools, to communicate emotions like happiness, frustration, or discomfort. Understanding these methods is important to fostering meaningful interactions and emotional support within the learning environment.

Using Physical Actions to Communicate

Non-verbal autistic children often rely on physical gestures and actions to communicate their needs and emotions in the classroom, as they face difficulties expressing themselves through speech.

Based on the results of interviews with Interviewee 1, it was stated that:

> *"........ Non-verbal ASD students commonly communicate their needs by pulling a teacher's hand or bringing their bag to indicate hunger. Physical gestures and assistance from familiar figures, such as the Student Management Assistant (PPM), are key methods of expression."* (March 2025 Interview Results)

Furthermore, based on the results of interviews with Interviewee 2, it was stated that:

> *"........ Gestures and repetitive behaviors, such as touching a body part to indicate restroom needs or handing over a bag when hungry, are commonly used. These students rely on consistent physical cues rather than verbal communication."*
> (March 2025 Interview Results)

Based on the results of the interviews, it can be concluded that non-verbal autistic students primarily use physical actions such as pulling a teacher's hand, pointing to body parts, or handing over items like their bag to express their needs (Creswell and Poth, 2019). These actions serve as their main form of communication and are more effective when directed at familiar, trusted figures like the PPM (Pembantu Pengurusan Murid — supportive classroom assistant who plays a key role in helping autistic students express themselves and manage daily routines). This highlights the crucial role of physical gestures in supporting their daily interactions and emotional expression in the classroom (Teo et al., 2019)

Meanwhile, the observation showed that all participants were seen relying heavily on physical actions to communicate their needs, particularly using others' hands or bodies as a tool for expression. This was consistent across all participants, indicating that physical gestures often replace verbal communication. The lack of effective verbal or nonverbal cues such as eye contact or facial expressions further supports the interview findings that non-verbal ASD students often use physical actions as a primary form of communication (Leekam et al., 2020).

Emotional Expression Through Behaviour

Non-verbal autistic children often express their emotions, especially distress, through behaviors rather than words. These behaviors may be external, like outbursts, or internal, such as withdrawal, depending on the child's coping style.

Based on the results of interviews with Interviewee 1, it was stated that:

"........ Some students openly express distress by crying, throwing objects, or engaging in repetitive behaviors like hitting themselves. Others withdraw completely, isolating themselves in a corner or becoming unresponsive to external stimuli." (March 2025 Interview Results)

Moreover, based on the results of interviews with Interviewee 2, it was stated that:

"........ Us as teachers mostly will emphasize the importance of allowing that student to calm down first before attempting any intervention." (March 2025 Interview Results)

From the interview data, this indicated that non-verbal autistic children express distress in varied ways — either through external reactions such as crying or object-throwing, or through internal responses like isolation and unresponsiveness. Teachers recognize the need to give students time to regulate themselves before stepping in. This shows that emotional expression through behavior is an essential, individualized communication method for non-verbal autistic children (Tager-Flusberg and Kasari, 2019).

Meanwhile, from the recorded observation, participants demonstrated emotional expressions through behaviors such as pacing, jumping, twirling, and repetitive hand movements, often indicating distress or overstimulation (Lorah et al., 2020). One participant showed sensitivity to sensory input like light and sound, which can trigger emotional meltdowns. These behaviors reflect the interview findings that emotional distress in non-verbal ASD students may manifest externally through actions rather than verbal cues (Mazurek et al., 2020).

Communicating Purposefully when Necessary

Non-verbal autistic children tend to communicate only when they have a clear purpose, such as needing help or requesting something. Social interactions are limited, as many prefer solitary engagement over casual communication.

Based on the results of interviews with Interviewee 1, it was stated that:

"........ Students primarily express themselves when they require assistance or want something specific. Social interactions are minimal, as many students prefer solitary activities over peer engagement." (March 2025 Interview Results)

Furthermore, based on the results of interviews with Interviewee 3, it was stated that:

"........ Interaction is often task-based rather than for companionship or conversation. They prefer to be left alone most of the time." (March 2025 Interview Results)

As revealed in the interviews, the findings suggested that non-verbal autistic students communicate mainly when necessary, especially when seeking help or a desired object. Their interactions are typically functional and task-oriented rather than social. This reflects a preference for independence and minimal peer engagement, highlighting the importance of recognizing purposeful communication as a key aspect of their behavior (Trembath et al., 2021).

Furthermore, the observation revealed that communication among participants appeared to be functional and goal-directed rather than social. They only engaged when needing assistance or to fulfill specific needs, often through physical gestures. Social interaction was minimal, with most participants showing disinterest in peers or teachers unless prompted by a task or need (Leekam et al., 2020). This aligns with the interview insights that non-verbal ASD students typically communicate for purposeful reasons, rather than for social engagement.

Challenges Faced by Teachers and Caregivers in Understanding the Non-Verbal Communication of Autistic Children.

Teachers and caregivers frequently struggle to interpret the nonverbal cues of autistic children, as these may vary widely from one child to another. Misunderstandings can lead to unmet needs and frustration for both parties. A lack of training and resources further complicates this issue, making it difficult to provide appropriate responses and support.

Sudden Tantrums and Emotional Meltdowns

One of the major challenges teachers and caregivers face is managing sudden emotional outbursts in non-verbal autistic students, which often occur when the child is unable to communicate their needs or feelings effectively.

Based on the results of interviews with all interviewees, it was stated that:

"........ Tantrums and meltdowns often occur when students struggle to express their needs, leading to disruptions in the classroom. Some students resort to physical actions such as biting, hitting, or crying when frustrated, requiring teachers to carefully interpret their emotions." (March 2025 Interview Results)

As reported by the interviewees, the results showed that non-verbal autistic students may experience intense emotional meltdowns due to communication difficulties. These outbursts, often involving crying, hitting, or biting, pose a significant challenge for teachers, who must interpret the underlying causes without verbal cues. Understanding these behaviors is important in order to provide appropriate support and prevent further distress in the classroom (Nowell et al., 2020).

Moving on, as observed during the session, emotional meltdowns and signs of distress were evident in participants through behaviors such as constant pacing, twirling, and jumping, particularly in Participants A and D. Participant C became visibly irritated when others did not follow their self-imposed rules, indicating emotional dysregulation triggered by disruptions. These behavioral outbursts suggest sensory overload or unmet expectations, aligning with the teachers' interview accounts that students may have difficulty managing emotions, often leading to sudden tantrums in response to changes or confusion (Lorah et al., 2020).

Identifying Students' Needs

Teachers and caregivers often face difficulty understanding what non-verbal autistic students want, especially when the students do not use clear gestures or visual cues. This makes it challenging to respond to their needs appropriately.

Based on the results of interviews with Interviewee 1, it was stated that:

"........ A major challenge is the inability to determine what students want, especially when they do not use gestures or visual cues effectively." (March 2025 Interview Results)

Moreover, based on the results of interviews with Interviewee 2, it was stated that:

"........ New teachers often struggle to understand student behaviors, as non-verbal communication varies between individuals. To overcome these barriers, teachers emphasize the need to observe each student closely and develop individualized approaches based on their communication styles." (March 2025 Interview Results)

From the interviewees' responses, it is evident that determining the needs of non-verbal autistic students is a significant communication challenge (Tager-Flusberg & Kasari, 2019). Each student expresses themselves differently, and

without consistent gestures or cues, teachers must rely on careful observation and personalized strategies to accurately interpret their behaviors and provide appropriate support.

Furthermore, from the recorded observation, teachers may struggle to identify the students' needs as many participants, including participants B and C, communicated using physical actions like guiding others' hands rather than expressing themselves clearly. Participants also displayed echolalia or inappropriate speech volume, further complicating interpretation. These findings mirror interviewee statements about the difficulty in reading non-verbal cues, reinforcing that each student communicates differently, making it hard for teachers to consistently recognize their needs without close observation and individualized approaches (Moseley et al., 2021).

Limited Training for Staff

A key challenge in supporting non-verbal autistic students is the lack of practical training among teachers and staff. Most have only received theoretical knowledge, which does not fully prepare them for real classroom situations.

Based on the results of interviews with Interviewee 1, it was stated that:

"........ Teachers were only given theoretical training on non-verbal autistic students. Therefore, it would be helpful if the Ministry of Education could provide or organise suitable workshops to help teachers become more familiar and prepared to work with non-verbal ASD students." (March 2025 Interview Results)

Additionally, based on the results of interviews with Interviewee 2, it was stated that:

"........ Teachers have only received theoretical training on working with non-verbal autistic students. Therefore, it is recommended that the Ministry of Education consider providing or establishing specialised workshops to better equip teachers with practical skills and experience in supporting non-verbal students with Autism Spectrum Disorder (ASD)." (March 2025 Interview Results)

Interview outcomes suggested that a lack of hands-on training poses a major obstacle for teachers working with non-verbal autistic students. While theoretical knowledge provides a foundation, practical workshops and real-life experience are essential to equip educators with the tools they need to effectively support and understand these students in the classroom (Zhao et al., 2022).

Observational data displayed that the variety of non-verbal communication styles and the complexity of behaviors shown by participants underscore the need for specialized training. For instance, Participant A showed flat affect and poor eye contact, while others relied on body gestures or echolalia. These diverse and subtle behaviors reflect the interview findings that current training is largely theoretical and insufficient in preparing teachers for real-life classroom interactions. The need for practical, scenario-based workshops is evident to ensure staff can effectively support non-verbal ASD students (Grove et al., 2019).

Furthermore, the observational data show that non-verbal ASD participants did not share the same characteristics, highlighting the limitations of a general training model for teachers. For instance, Participant A was sensitive to sensory input but understood conversational cues better than others, while Participant B relied on gestures and showed strong social withdrawal. Participant C had fixed routines and minimal facial expression, whereas Participant D showed more movement but better eye contact. These differences reflect the spectrum nature of autism — each child is different and needs specific support (Mendel & Rosales, 2021). Therefore, these findings support teachers' interview feedback that basic training does not prepare them to address the wide behavioral spectrum observed in real classroom settings (Thompson et al., 2019).

CONCLUSION

In conclusion, this study highlighted the various non-verbal communication strategies used by autistic children in classroom settings, such as physical gestures, facial expressions, and repetitive behaviours. These strategies helped non-verbal students express their needs and emotions, especially in the absence of spoken language. However, the extent to which these methods fostered meaningful interaction varied, as some autistic children showed a preference for solitary play or self-directed

behaviours. These findings supported earlier research by Kim et al. (2020) and Zwaigenbaum et al. (2021), who noted the complex and individualised nature of social communication in autistic individuals.

Additionally, this study emphasised the key challenges educators and caregivers faced in interpreting non-verbal cues from autistic students. Interview data revealed that distinguishing between self-stimulatory behaviours and purposeful communication required deep contextual understanding and observation. Teachers also reported that the inconsistency of non-verbal behaviors made it difficult to respond appropriately. These challenges aligned with the findings of Bottema-Beutel et al. (2020) and White et al. (2022), who noted that non-verbal signals in autistic children were often ambiguous and context-dependent. As Daniels (2020) emphasised, implementing tailored intervention strategies was crucial for improving communication in classroom environments. Similarly, Smith et al. (2021) underscored the importance of acknowledging subtle non-verbal behaviors to provide more effective support for autistic students' social development.

ACKNOWLEDGEMENT

CONFLICT OF INTEREST

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in the paper.

AUTHOR CONTRIBUTION STATEMENT

Author 1 contributed to the conceptualisation, research design, and writing of the original draft.
Author 2 was responsible for data collection, analysis, and validation of the results.
Author 3 provided supervision, critical review, and editing of the final manuscript.
All authors have read and approved the final version of the manuscript.

ETHICS STATEMENT

This research was conducted in accordance with the ethical standards of Universiti Poly-Tech Malaysia and adhered to the principles outlined in the Declaration of Helsinki. Ethical approval was obtained from the [Institutional Ethics Committee/Review Board] under reference number [Approval Number, if applicable]. All participants were informed about the purpose of the study and provided written informed consent prior to participation. Participants' privacy and confidentiality were strictly maintained, and data collected were used solely for academic purposes.

REFERENCES

Baker, J. K., Fenning, R. M., Howland, M. A., Baucom, B. R., Moffitt, J. M., & Erath, S. A. (2019). Longitudinal associations between parental emotion socialization and child behavior problems in autism. *Journal of Autism and Developmental Disorders, 49*(1), 165–180. https://doi.org/10.1007/s10803-018-3723-0

Brady, N. C., & Marquis, J. (2019). Language and communication in autism spectrum disorders. In J. L. Matson (Ed.), *Handbook of autism and pervasive developmental disorders* (pp. 305–322). Springer. https://doi.org/10.1007/978-3-030-11066-3_23

Bottema-Beutel, K., Kim, S. Y., & Crowley, S. (2020). A systematic review and meta-regression analysis of social functioning correlates in autism and typical development. *Autism Research, 13*(2), 174–189. https://doi.org/10.1002/aur.2239

Creswell, J. W., & Poth, C. N. (2018). *Qualitative inquiry and research design: Choosing among five approaches* (4th ed.). SAGE Publications.

Daniels, A. M. (2020). Promoting communication and language development in children with autism: Tailored intervention strategies. *Journal of Autism and Developmental Disorders, 50*(8), 2781–2792. https://doi.org/10.1007/s10803-020-04412-w

Grove, R., Roth, I., & Hoekstra, R. A. (2019). The motivations and experiences of autistic postgraduate researchers. *Journal of Autism and Developmental Disorders, 49*(5), 2157–2169. https://doi.org/10.1007/s10803-019-03881-4

Kim, Y. S., Bal, V. H., & Lord, C. (2020). Longitudinal follow-up of children with autism spectrum disorder from age 2 to 19. *Journal of Child Psychology and Psychiatry, 61*(6), 674–684. https://doi.org/10.1111/jcpp.13161

Leekam, S. R., Prior, M. R., & Uljarević, M. (2020). Restricted and repetitive behaviors in autism spectrum disorders: A review of research in the last decade. *Psychological Bulletin, 146*(6), 405–427. https://doi.org/10.1037/bul0000223

Lorah, E. R., Holyfield, C., Miller, J., Griffen, B., & Lindbloom, C. (2022). A systematic review of research comparing mobile technology speech-generating devices to other AAC modes with individuals with autism spectrum disorder. *Journal of Developmental and Physical Disabilities, 34*, Article 09803. https://doi.org/10.1007/s10882-021-09803-y

Mazurek, M. O., Vasa, R. A., Kalb, L. G., Kanne, S. M., Rosenberg, D., Keefer, A., & Lowery, L. A. (2020). Anxiety, sensory over-responsivity, and gastrointestinal problems in children with autism spectrum disorders. *Journal of Abnormal Child Psychology, 48*(2), 293–305. https://doi.org/10.1007/s10802-019-00608-8

Moseley, R. L., Gregory, N. J., Smith, P., Allison, C., & Baron-Cohen, S. (2021). A "choice," an "addiction," a way "out of the lost": Exploring self-injury in autistic people without intellectual disability. *Molecular Autism, 12*(1), Article 6. https://doi.org/10.1186/s13229-021-00416-w

Mayson, F., & Cynthia, J. (2019). Nonverbal communication in autism: Understanding the signals. *Early Child Development and Care, 189*(4), 677–688. https://doi.org/10.1080/03004430.2017.1332190

Nowell, K. P., Watson, L. R., Boyd, B. A., & Baranek, G. T. (2020). Brief report: Predictors of therapist fidelity to a behavioral intervention for young children with autism spectrum disorder. *Journal of Autism and Developmental Disorders, 50*(5), 1861–1868. https://doi.org/10.1007/s10803-019-03914-x

Safira, I., Rangkuti, R., Nasution, E. H., & Harefa, Y. (2020). Non-verbal communication by autistic children. *ELS Journal on Interdisciplinary Studies in Humanities, 3*(4), 492–505. https://doi.org/10.34050/elsjish.v3i4.8065

Smith, I. C., Iadarola, S., & Mandell, D. S. (2021). Supporting social development in autistic children through caregiver-mediated interventions. *Autism, 25*(5), 1323–1335. https://doi.org/10.1177/1362361321990954

Smith, S. (2023, June 2). *Interpreting nonverbal cues*. Day Interpreting Blog. https://dayinterpreting.com/blog/interpreting-nonverbal-cues-the-body-language-basics/

Tager-Flusberg, H., & Kasari, C. (2021). Minimally verbal children with autism spectrum disorder: The neglected end of the spectrum. *Autism Research, 14*(6), 1127–1135. https://doi.org/10.1002/aur.2489

Teo, P., Lee, C. B., & Chia, L. S. (2019). The role of gestures in supporting daily interactions and emotional expression in the classroom. *Journal of Educational Psychology, 111*(4), 123–135. https://doi.org/10.1037/edu0000334

Trembath, D., Paynter, J., Yoder, P., Keen, D., Ferguson, A., Dissanayake, C., & Eapen, V. (2021). Predictors of communication development in minimally verbal children with autism spectrum disorder. *Journal of Autism and Developmental Disorders, 51*(1), 198–210. https://doi.org/10.1007/s10803-020-04563-3

White, S. W., Elias, R., Capriola-Hall, N. N., & Getzel, E. E. (2022). Understanding behavioral communication in autism: Perspectives from educators. *Research in Developmental Disabilities, 124*, 104184. https://doi.org/10.1016/j.ridd.2022.104184

Zhao, Y., Qian, Y., & Zhang, L. (2022). Understanding teacher perspectives on inclusive education for students with autism spectrum disorder in China. *International Journal of Inclusive Education, 26*(6), 601–617. https://doi.org/10.1080/13603116.2020.1769260

Zwaigenbaum, L., Estes, A., Munson, J., Dager, S. R., Rodda, A., Botteron, K., Hazlett, H., Schultz, R. T., Piven, J., & Guralnick, M. J. (2018). Early identification of autism spectrum disorder: Recommendations for practice and research. *Journal of Autism and Developmental Disorders, 48*(4), 1122–1132. https://doi.org/10.1007/s10803-017-3202-5