Jurnal Keterapian Fisik
Vol. 8, No. 1, May 2023
https://doi.org/10.37341/jkf.v8i1.488

Original Research

Analysis of the Development of Preschool Children with Autism Spectrum Disorder: A Qualitative Descriptive Study

Irma Soraya Nur Aini[1*], Endang Sri Wahyuni[2], Roh Hastuti[3]

[1,2,3] Bachelor of Applied Occupational Therapy Program, Department of Occupational Therapy, Poltekkes Kemenkes Surakarta, Indonesia

ABSTRACT

Background: *Preschool is an important period in child development because of the acceleration in motor, language, and social-emotional skills. Children with Autism Spectrum Disorder (ASD) have difficulties in social, communication, and repetitive behavior aspects that impact developmental delays. This study aims to analyze the developmental aspects of preschool-aged children with ASD.*

Methods: *This study used a descriptive qualitative approach. The sample consisted of four preschool-aged children with ASD and their four mothers, who were selected using purposive sampling based on the Denver II criteria. Data collection was conducted through interviews and observations of child development during one assessment period. Data analysis was performed thematically with triangulation of sources and techniques and verification through member checks to ensure data validity.*

Results: *The thematic analysis yielded three main themes, namely: (1) motor aspects, which include delays in locomotor skills, manipulative movements, eye-hand coordination, and early writing skills; (2) language aspects showing barriers in speech initiation and language expression abilities; and (3) socio-emotional aspects including delays in environmental exploration, independence, and social interaction abilities.*

Conclusion: *Preschool-aged children with ASD have developmental delays in motor, language, and social-emotional aspects with varying degrees of severity according to age. Structured occupational therapy and early intervention based on multisensory stimulation are recommended to support the optimal developmental achievement of children with ASD.*

ARTICLE HISTORY
Received: November 4th, 2025
Accepted: December 9th, 2025

KEYWORDS
autism spectrum disorder, child development, preschool;

CONTACT
Irma Soraya Nur Aini
✉
irmasorayanuraini@gmail.com
Bachelor of Applied Occupational Therapy Program, Department of Occupational Therapy, Poltekkes Kemenkes Surakarta. Jl. Kapten Adi Sumarmo, Tohudan, Colomadu, Karanganyar Regency, Central Java, Indonesia.

Cite this as: Analysis of the Development of Preschool Children with Autism Spectrum Disorder: A Qualitative Descriptive Study. (2023). *Jurnal Keterapian Fisik*, *8*(1), 25-34. https://jurnalketerapianfisik.com/index.php/jpt/article/view/488

INTRODUCTION

Child development is a process of increasing complex bodily structures and functions, including gross and fine motor skills, language, and social-emotional aspects. The preschool or golden age (0–6 years) is a crucial period for stimulating growth and development because this is when a child's brain develops most rapidly. Early detection

of developmental disorders or delays is important so that children can receive appropriate intervention according to their needs (Indonesian Ministry of Health, 2016; Soetjiningsih & Ranuh, 2015). Therefore, monitoring and stimulation during the preschool period play a major role in optimizing children's developmental potential.

One of the developmental disorders that often occurs in preschool-aged children is Autism Spectrum Disorder (ASD). This disorder is characterized by difficulties in social interaction and communication, as well as the emergence of distinctive repetitive behaviors (American Psychiatric Association, 2013). According to the World Health Organization (2022), the prevalence of ASD worldwide is 1 in 100 children, and data from the Centers for Disease Control and Prevention (2020) shows a significant increase from year to year. This condition indicates that ASD is a global problem that requires special attention in its early detection and treatment.

The clinical manifestations of ASD are highly variable, including impaired social functioning, behavior, and limited interests and responses to sensory stimuli. Children with ASD may exhibit symptoms such as delayed speech, difficulty understanding social expressions, stereotypical behavior, and impaired motor skills (Amini, Fatmarizka, & Herlinawati, 2022). The causes of ASD are multifactorial, including genetic, neuroanatomical, and prenatal and postnatal environmental factors that can affect neural connectivity (Pangestu & Fibriana, 2017). Understanding these characteristics is essential in designing appropriate interventions to improve the development of children with ASD.

The main problems that often arise in children with ASD include delays in motor, language, and social-emotional aspects. Children with ASD tend to have weaknesses in body balance, eye-hand coordination, and pre-writing skills (Komarisa & Ardianingsih, 2020; Hasnita & Hidayati, 2015). Verbal and nonverbal communication barriers are also common, such as delayed speech and difficulty expressing emotions (Gunawan et al., 2022; Maha & Harahap, 2020). In addition, limited social skills cause children with ASD to have difficulty establishing reciprocal relationships with others and to be less independent in their daily activities (Syaputri & Afriza, 2022). Therefore, a comprehensive analysis of every aspect of a child's ASD development is necessary to determine the appropriate direction of intervention.

This study was conducted at the PNTC Clinic, which treats children with special needs, including ASD, involving occupational therapists, physiotherapists, and speech therapists. Based on the results of a preliminary study, it was found that four children with ASD at the clinic experienced obstacles in motor, language, and social-emotional aspects. Appropriate therapy integration, such as Sensory Integration, has been proven to help children respond better to sensory stimuli (Simorangkir, 2019). However, research that specifically analyzes the developmental profile of preschool-aged children with ASD in Indonesia, especially at the PNTC Clinic, is still limited. Therefore, this study is novel in that it analyzes in depth the motor, language, and social-emotional development of preschool-aged children with ASD as a basis for developing appropriate occupational interventions.

MATERIALS AND METHOD

This study uses a qualitative design with a descriptive approach. This design was chosen because it is in line with the research objective, which is to describe in depth the developmental conditions of preschool-aged children with ASD based on their parents' experiences. Qualitative descriptive research allows researchers to understand

phenomena naturally without manipulating variables, and emphasizes the meaning and context expressed by participants (Abdussamad, 2021; Adhi, Kusumastuti, & Khoiron, 2019). This approach is also relevant because the research results are focused on obtaining a comprehensive understanding of the motor, language, and socio-emotional aspects of children with ASD.

The research was conducted at the PNTC Clinic, Tohudan Village, Colomadu District, Karanganyar Regency, which is a children's therapy clinic offering physiotherapy, occupational therapy, and speech therapy services. This location was chosen because it has a large number of children with ASD who are actively undergoing multidisciplinary therapy, enabling researchers to obtain rich and relevant data. The research was conducted over a period of two months, from December 2021 to January 2022, after obtaining permission from the clinic and consent from the respondents.

The research population consisted of all preschool-aged children with ASD undergoing therapy at the PNTC Clinic and their parents. The sample was determined using purposive sampling, which is the selection of informants based on specific criteria in accordance with the research objectives (Kusumastuti & Khoiron, 2019). The research sample consisted of four parents of children with ASD and four children aged 3–6 years who met the inclusion criteria, namely: (1) having a child with a preschool ASD diagnosis, (2) willing to be a respondent voluntarily, and (3) able to communicate verbally well. The exclusion criteria were parents who could not attend consistently during the interview process or did not give their consent to be recorded.

The research variables in this qualitative study were aspects of ASD child development, including motor, language, and social-emotional skills. The instruments used were semi-structured interview guidelines, observation sheets, and voice recorders to document the results of the conversations. The interview guide was developed based on child development theory and the Denver II reference. To maintain data validity and reliability, the researcher triangulated sources and techniques and cross-checked with respondents after the interview was completed to ensure the accuracy of the information (Abdussamad, 2021).

The data collection procedure consisted of three stages: pre-fieldwork, implementation, and post-data collection. In the pre-fieldwork stage, the researchers prepared the interview protocol, recording equipment, and research permits. The implementation stage was carried out through semi-structured interviews with the parents of children with ASD and observation of the children's therapy activities. The researchers then transcribed the recordings, verified them with the respondents, and compiled the observation data. The collected data was then stored securely to maintain participant confidentiality (Kusumawardani et al., 2015).

Data analysis used thematic analysis techniques. The analysis process was carried out in three stages, namely open coding, axial coding, and selective coding to find the main themes from the interview and observation results (Ayu & Budiasih, 2013). The data obtained was then reduced, presented systematically, and conclusions were drawn based on similarities and differences between participants (Ahyar & Safrida, 2020). Research ethics were observed by obtaining ethical approval and informed consent from respondents, maintaining confidentiality of identity, and ensuring that participation was voluntary without coercion. This study has obtained ethical approval from the Health Research Ethics Committee of the Surakarta Ministry of Health Polytechnic.

RESULTS

This study aimed to describe the development of preschool-aged children with ASD at the PNTC Clinic in Karanganyar Regency. Data were obtained through semi-structured interviews with four parents of children with ASD and indirect observation during the therapy process. Data analysis was conducted using a thematic approach through the processes of reduction, coding, categorization, and extraction of main themes.

Table 1. Participant Characteristics

Participant Age (years)	Highest Level of Education	Occupation	Child's Age (years)	Diagnosis
35	High School	Housewife	6	ASD
47	Bachelor's Degree	Housewife	4	ASD
38	Bachelor	Housewife	5	ASD
38	Bachelor	Housewife	3	ASD

Note: IRT = Housewife; ASD = Autism Spectrum Disorder

The results of the study show that there are three main themes as follows:

Theme 1: Motor Development

Interview results show that the motor skills of children with ASD include gross and fine motor skills. In terms of gross motor skills, children are able to walk, run, jump, and climb stairs with improving coordination. One participant stated:

> *"Every day he jumps, can climb stairs, run, and walk backwards. At 12 months old, he can walk independently" (R2).*
> *"They can already jump far, ma'am. At 9 months, they can walk, and at 10 months, they can run" (R4).*

In terms of fine motor skills, children began to be able to perform simple activities such as holding small objects, moving cubes, and playing with stacking rings. These findings indicate an improvement in hand-eye coordination, although further stimulation is still needed for more complex activities such as writing and cutting. Participants said:

> *"Now their hands are getting trained, they can hold a rattle and move cubes" (R1).*
> *"He can do all of this now, moving cubes, finding strings, and stacking donut toys" (R4).*

Theme 2: Language Development

The language skills of children with ASD are still limited, both in verbal and non-verbal aspects. Some children are able to express sounds and laughter but are not yet able to form meaningful words. Participants said:

> *"Forget that, even a little sound makes them react; they laugh every day" (R2).*
> *"Yes, he can laugh and shout" (R1).*

In terms of nonverbal abilities, the child shows responses to sounds and movements around him. These results illustrate that the child is more responsive to auditory stimuli than verbal expressions, so speech therapy and sensory interaction-

based communication approaches are essential to improve language skills. The participant stated the following:

> *"Even when he hears a small sound, he immediately tries to find out where it came from. When the door opens, he immediately runs to get out" (R1).*

Theme 3: Social-Emotional Development

In terms of social-emotional development, the child showed progress in independence and basic social interaction. The child began to be able to perform self-care activities with parental guidance. Participants mentioned:

> *"He tries to brush his teeth by himself without toothpaste, then I brush his teeth again" (R1).*
>
> *"Brushing teeth with assistance, able to eat wafers independently" (R2).*

In terms of social response, the child begins to be able to make eye contact and show positive emotional expressions. These results indicate the child's ability to express desires and show social affection, although there is still a need for reinforcement in two-way communication skills and emotional control. Participants' statements are as follows:

> *"Yes, he pulls my hand… can smile spontaneously, doesn't turn his face away" (R1)*
> *"Whining while pulling my hand until he gets it, able to look at my face and smile spontaneously" (R4).*

DISCUSSION

This study produced three main themes, namely: motor development; language development; and social-emotional development. The following is an explanation of each theme. The first theme is gross and fine motor development in children with ASD.

The study found that some children experienced gross motor delays, such as the ability to jump far and climb stairs, which were not appropriate for their chronological age. Fine motor skills also showed delays, especially eye-hand coordination and pre-writing skills such as stacking cubes. These findings are in line with the Denver II child development theory and previous studies which state that children with ASD usually have coordination and motor skill impairments (Sulistiawati, 2017; Widiantara et al., 2020; Suryana, 2018).

The second theme discusses verbal and nonverbal language development. The children in the study showed limitations in speech initiation and language response, only able to say a few words and respond to sounds to a limited extent. This is consistent with the ASD diagnosis in DSM V, which highlights impairments in verbal and nonverbal communication (Kristiana Widayanti, 2021; Diah, 2019). Children's difficulties in understanding and expressing language are a major need for continuous stimulation to improve their communication skills.

The third theme relates to social-emotional development, including independence, social initiation, and social response. Children show limitations in various social aspects, such as exploring their environment, expressing emotions, and interacting socially with others. This indicates a deficit in social reciprocity and difficulty in adjusting appropriate social behavior, which are characteristic of ASD (Hirvikoski et al.,

2015; Soetjiningsih, 2013). Research recommends social skills training interventions to improve children's social and communication skills.

Therapeutic stimulation conducted to improve the development of children with ASD includes play activities and occupational therapy. Activities such as ball games, beading, and graphomotor exercises are important for improving motor function and coordination in children with ASD. The application of routine and structured therapy can improve developmental delays, reinforcing the principle of evidence-based practice in occupational therapy (Amalia, 2022; Pranasafitri Widajati, 2018).

The limitations of the study are the small sample size and limited observation time, so the findings need to be examined carefully. These limitations do not diminish the value of the findings as a basis for developing occupational therapy for children with ASD in the future with a broader scale and duration of research. Future research is recommended to expand the sample size and population variation, including children with more diverse stimulation input and longer intervention duration (Abdussamad, 2021; Amalia, 2022).

CONCLUSION

The results of this study indicate that preschool-aged children (3–6 years) with ASD experience developmental delays in three main domains, namely motor, language, and social-emotional. In terms of motor skills, most children show age-inappropriate locomotor and manipulative movement abilities, as well as delays in hand-eye coordination and pre-writing skills. In terms of language, children experience difficulties in initiating speech and language expression, while in terms of social-emotional development, children still need stimulation in their ability to explore their environment and engage in social interactions. These results emphasize the importance of holistic and continuous occupational therapy interventions integrated with speech therapy and family support.

ACKNOWLEDGEMENTS

The author would like to thank the Director of the Surakarta Ministry of Health Polytechnic (Poltekkes Kemenkes Surakarta) for the facilities provided during this research process. Thanks, are also extended to the Karanganyar District PNTC Clinic, the occupational therapists, and the parents of children with ASD who actively participated and made valuable contributions to the success of this research.

REFERENCES

Abdussamad, Z. (2021). *Metode penelitian kualitatif* (pp. 92–93, 109, 143, 156–157, 190–191, 194). Makassar: Syakir Media Press.

Adhi, K., & Khoiro, A. M. (2019). *Metode penelitian kualitatif*. Semarang: Lembaga Pendidikan Sukarno Pressindo.

Ahadianingsih, M. N. (2021). The use of straw string media to improve pre-writing skills for children with intellectual disability. *Jassi Anakku*, 22(2), 113–122.

Ahyar, J., & Safrida, S. (2020). Optimalisasi pelayanan kepolisian dalam menangani tindak pidana kekerasan terhadap perempuan dan anak. *Asia-Pacific Journal of Public Policy*, 6(2), 69–89.

Amalia, N. R. (2022). *Pengaruh perceptual-motor training terhadap perubahan kemampuan koordinasi mata, tangan, dan kaki anak tunagrahita di Sekolah Luar Biasa Laniang Makassar* [Disertasi, Universitas Hasanuddin]. http://respository.unhas.ac.id/id/eprint/14729/

Ambarwati, E. R., Yahya, A. P., & Sutanto, A. V. (2015). Tingkat pengetahuan ibu tentang stimulasi tumbuh kembang dengan perkembangan pada anak. *Jurnal Kesehatan Samodra Ilmu*, 5(2).

Amini, R. A., Fatmarizka, T., & Herlinawati, I. (2022). Penatalaksanaan fisioterapi pada kasus autism spectrum disorders di Klinik Boyolali: Case study. *Journal of Innovation Research and Knowledge*, 2(6), 2445–2448.

Centers for Disease Control and Prevention. (2020). *Autism spectrum disorder (ASD) data & statistics*. Tanggal Akses 10 Oktober 2023 dari https://www.cdc.gov/ncbddd/autism/data.html

Farikati, N. (2021). *Aktivitas makan pada anak dengan kondisi autism spectrum disorder (ASD) di Klinik Puspa Al Firdaus Surakarta* [Karya Tulis Ilmiah, Poltekkes Kemenkes Surakarta].

Fernando, F. (2021). Bimbingan dan layanan terapi pada anak autis. *Qalam: Jurnal Pendidikan Islam*, 2(1).

Gay, H., Taib, B., & Haryati. (2020). Penerapan kegiatan meronce berbahan alam untuk meningkatkan motorik halus pada anak usia 5–6 tahun. *Jurnal Pendidikan Guru Pendidikan Anak Usia Dini*, 3(1), 30–44.

Gunawan, E. F., Felling, F., Winoto, N., Imantiani, N. S., Wijaya, T. O. T., Gumulya, D., & Puspawidjaja, E. (2022). Perancangan alat bantu pembelajaran mata pelajaran PKN untuk anak PDD-NOS. *SERENADE: Seminar on Research and Innovation of Art and Design*, 1, 141–148.

Hanum, F., Mutdasir, & Yusuf, R. (2016). Terapi visual terhadap perkembangan bahasa reseptif dan ekspresif pada anak autis. *Jurnal Ilmu Keperawatan*, 97–107. http://jurnal.unsyiah.ac.id

Hasnita, E., & Hidayati, T. (2015). Terapi okupasi perkembangan motorik halus anak. *Jurnal Ipteks Terapan*, 9(1), 20–27. https://garuda.kemdikbud.go.id/documents/detail/854251

Kementerian Kesehatan RI. (2016). *Pedoman pelaksanaan stimulasi, deteksi, dan intervensi dini tumbuh kembang anak di tingkat pelayanan kesehatan dasar*. Jakarta: Kementerian Kesehatan RI.

Komarisa, P., & Ardianingsih, F. (2020). Permainan sirkuit sebagai strategi untuk meningkatkan keterampilan motorik kasar anak dengan autisme. *Jurnal Pendidikan Khusus*, 15(1).

Kristiana, I. F., & Widayanti, C. G. (2021). *Buku ajar psikologi anak berkebutuhan khusus*. Semarang: UNDIP Press.

Kurniati, D. P. Y. (2016). *Modul komunikasi verbal dan non verbal*. Bali: Fakultas Kedokteran, Universitas Udayana.

Kusumawardani, N., Rachmalina, S., Agung, D. L., Lely, I., Puti, S. H., & Astridya, P. (2015). *Penelitian kualitatif di bidang kesehatan*. Yogyakarta: PT Kanisius.

Kusumawati, O. (2017). Pengaruh permainan tradisional terhadap peningkatan kemampuan gerak dasar siswa sekolah dasar kelas bawah. *Terampil: Jurnal Pendidikan dan Pembelajaran Dasar*, 4(2), 124–142.

Kwee, J. E., Surjani, A., Sharon, C. G., Wibowo, V. G., & Gumulya, D. (2022, January). BI board, solusi pembelajaran bahasa Indonesia bagi siswa PDD-NOS. *SERENADE: Seminar on Research and Innovation of Art and Design*, 1, 131–140.

Maha, R. N., & Harahap, R. (2020). Perkembangan kemampuan berbahasa pada anak autisme. *Kode: Jurnal Bahasa*, 9(4), 157–164.

Maria, I., & Amalia, E. R. (2018). Perkembangan aspek sosial-emosional dan kegiatan pembelajaran yang sesuai untuk anak usia 4–6 tahun.

Moonik, P., Lestari, H., & Wilar, R. (2015). Faktor-faktor yang mempengaruhi keterlambatan perkembangan anak taman kanak-kanak. *e-CliniC*, 3(1).

Mukhlisa, N., & Kurnia, S. D. (2021). Penerapan permainan papan titian dalam mengembangkan motorik kasar pada anak usia dini. *Yaa Bunayya*, 2(1), 65–77.

Nurfadilah, M. F. I. (2021). Modifikasi perilaku anak usia dini untuk mengatasi temper tantrum pada anak. *Jurnal Pendidikan Anak*, 10(1), 69–76.

Pangestu, N., & Fibriana, A. I. (2017). Faktor risiko kejadian autisme. *HIGEIA: Journal of Public Health Research and Development*, 1(2), 141–150.

Polit, D. F., & Beck, C. T. (2018). *Essentials of nursing research: Appraising evidence for nursing practice* (9th ed.). Wolters Kluwer.

Pradono, J., Soerachman, R., Kusumawardani, N., & Kasnohadirjo. (2018). *Panduan penelitian dan pelaporan penelitian kualitatif* (E. Martha & A. Suwandono, Eds.). Jakarta: Badan Penelitian dan Pengembangan Kesehatan.

Pranasafitri, R., & Widajati, W. (2018). Pengaruh teknik doodling terhadap keterampilan menulis permulaan anak autis di Taman Pendidikan dan Pengembangan ABK Esya Sidoarjo.

Prawesti, L. N. I. (2020). Meningkatkan kemampuan motorik kasar anak usia dini melalui bermain lempar tangkap bola. *JoEE: Journal of Early Childhood Education*, 1(1), 16–22.

Rinawan, W. (2015). *Hubungan pola asuh orang tua dengan perkembangan personal sosial pada anak autis usia 3–8 tahun di Kota Malang* [Tugas Akhir, Universitas Brawijaya].

Riska Ayunita, P. (2019). *Hubungan terapi okupasi dengan perkembangan motorik pada anak autis di sekolah luar biasa di Kota Kendari tahun 2019* [Disertasi, Poltekkes Kemenkes Kendari].

Septiani, R., Widyaningsih, S., & Iqomh, M. K. B. (2019). Tingkat perkembangan anak pra sekolah usia 3–5 tahun yang mengikuti dan tidak mengikuti pendidikan anak usia dini (PAUD). *Jurnal Keperawatan Jiwa*, 4(2), 114–125.

Setiawan, A. A., & Defliyanto, D. (2019). Analisis kemampuan koordinasi dan kecepatan reaksi siswa tunagrahita dan autis (studi kasus di SLB Negeri Autis Center Kota Bengkulu). *Kinestetik: Jurnal Ilmiah Pendidikan Jasmani*, 3(1), 19–28.

Setiawati, S., Dermawan, A. C., & Maryam, R. S. (2020). Peningkatan status perkembangan anak prasekolah dengan stimulasi perkembangan. *JKEP*, 5(2), 150–160.

Simorangkir, M. R. R. (2019). *Belantara pendidikan anak berkebutuhan khusus: Memahami anak dengan ketidakmampuan belajar dan opsi edukasinya.* Jakarta Timur: Uki Press.

Suhana, A. (2021). *Pengembangan media motion foot untuk peningkatan kemampuan motorik kasar anak usia 5–6 tahun di TK Fun Kids Cireundeu, Tangerang Selatan* [Thesis, UIN Syarif Hidayatullah Jakarta].

Suryana, D. (2018). *Pendidikan anak usia dini: Stimulasi dan aspek perkembangan anak.* Jakarta: Prenadamedia Group.

Syamsidar, S. (2018). Meningkatkan kemampuan kasar anak melalui bermain lempar tangkap bola besar kelompok B1 TK. *ECEIJ: Early Childhood Education Indonesian Journal*, 1(1), 33–37.

Syaputri, E., & Afriza, R. (2022). Peran orang tua dalam tumbuh kembang anak berkebutuhan khusus (autisme). *Educativo: Jurnal Pendidikan*, 1(2), 559–564.

Wandansari, Y. (2019). Peran sosialisasi emosi oleh ibu & ayah terhadap regulasi emosi anak usia dini. *Experientia: Jurnal Psikologi Indonesia*, 7(2), 54–64.

Widiyati, W. (2016). Pembelajaran sensorimotor untuk anak autis di PAUD inklusi: Sebuah tinjauan psikologis. *Prosiding Ilmu Pendidikan*, 1(2).

World Health Organization. (2022). *Autism*. Diakses tanggal 10 Oktober 2023 dari https://www.who.int/news-room/fact-sheets/detail/autism-spectrum-disorders

Worowiranti, M. (2014). *Penerapan pivotal response treatment dengan teman sebaya sebagai mediator untuk meningkatkan inisiasi sosial pada anak PDD-NOS* [Disertasi, Universitas Katolik Soegijapranata].