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Daily Living Skills in Children with Autism: The Impact of Gender, Parental Self-Efficacy, and Grandparenting

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Abstract
Daily Living Skills (ADLS) are essential for the independence and overall development of children. However, for children with autism, these skills often present significant challenges. This quantitative study examines the factors influencing the development of ADLS in autistic children, with a focus on gender, parental self-efficacy, and grandparent involvement. A total of 96 children with autism, aged 4 to 8 years, were recruited from therapy centers and special education schools in Indonesia. Two instruments were used for data collection: a parental self-efficacy scale adapted from Bandura's theory, and the WeeFIM Scale developed by Slomine to assess children's ADLS performance. Pearson correlation analysis revealed a significant positive relationship between parental self-efficacy and the development of children's ADLS, indicating that higher levels of parental confidence are associated with better daily functioning in children. Gender differences were also found, with girls outperforming boys in ADLS mastery. Interestingly, children raised in dual-caregiving environments involving grandparents demonstrated lower ADLS performance compared to those raised primarily by their parents. These findings highlight the importance of strengthening parental self-efficacy through targeted training and support programs. The study also emphasizes the influence of cultural practices, particularly the role of extended family in caregiving, which may impact children's skill development. Future research should further investigate the mechanisms through which grandparent involvement affects ADLS and explore these dynamics using longitudinal designs and cross-cultural comparisons. This study advocates for culturally responsive interventions that support both parents and extended family members in nurturing the daily living skills of children with autism.

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Introduction

The prevalence of autism among children continues to increase, as indicated by a report from the Indonesian Centers for Disease Control (CDC, 2023). In the United States, 1 in 54 children is diagnosed with Autism Spectrum Disorder (ASD). Meanwhile, in Indonesia, the Central Bureau of Statistics reports that 3.2 million children are living with the disorder, with an estimated annual growth of 500 new cases (BPS, 2020). Autism is a neurological disorder characterized by deficits in both verbal and nonverbal communication, difficulties in establishing social integration, and the presence of repetitive and monotonous behaviors (DSM-V). Children with ASD struggle with various activities, particularly those involving social interaction (Auld et al., 2022; Borca & Petrescu, 2022; Simon M. Bury et al., 2020), which inevitably hinders their future development.

The number of students with special needs receiving education in Jakarta has grown rapidly—from 3,148 students in 2015 to 10,519 in 2018 (Ayu Thalia, 2024). In the Jabodetabek area, particularly in Jakarta, there has been an increase in schools offering educational services for children with autism. However, despite the implementation of inclusive education programs,

many schools have not executed them optimally. Challenges include inadequate supervision of the Individual Learning Program (PPI) and a mismatch between the educational backgrounds of teaching staff and the specific needs of children with special needs. Therefore, efforts must be made to improve both the quality and quantity of inclusive schools, including providing more effective training for teaching staff so they can meet the educational needs of children with autism (Moh Haikal, 2022; Robiatul Adawiah et al., 2023; Tarnoto, 2016).

One of the key reasons children with ASD face difficulties in social interaction is due to underdeveloped Theory of Mind compared to neurotypical children. Theory of Mind is a developmental component that enables children to understand emotions and the mental states of others. Children with ASD often struggle to represent others' ``mental states,'' which impedes their ability to engage in reciprocal communication and social interaction (Alkire et al., 2023; Fitzpatrick et al., 2018; Risnawati et al., 2015, 2023). As a result, children with ASD often appear disinterested in social engagement, prefer solitude, and are more inclined to interact with inanimate objects or engage in repetitive activities (Davison et al., 2006).

These developmental limitations impact children's everyday behaviors. Due to their limited interest and interaction with the social environment, children with ASD face difficulties in performing daily tasks, including self-help and self-care skills—collectively known as Activities of Daily Living Skills (ADLS) (Auld et al., 2022; Borca & Petrescu, 2022; Marsack-Topolewski, 2022; Marsack-Topolewski et al., 2021; Susumaningrum et al., 2019). ADLS are essential for human survival and adaptation, yet individuals with autism often depend on others to perform these tasks (Cruz-Torre et al., 2020). Only 12% of individuals with autism can live independently, and this ability is closely linked to ongoing parental support and interventions (Duncan et al., 2022).

Based on the definition provided by the Vineland Adaptive Behavior Scales, Third Edition (Vineland-3), ADLS encompass three main aspects: self-care (e.g., brushing teeth, combing hair, dressing), home care, and social responsibilities (e.g., managing finances, preparing meals) (Duncan et al., 2022; Farmer et al., 2020). Vineland-3 is widely used in diagnosing intellectual and developmental disabilities and in planning treatment by identifying developmental milestones. In children with ASD, ADLS development significantly deviates from the normative developmental trajectory. Consequently, being a parent to a child with ASD presents numerous challenges.

Research has shown that parents of children with special needs often experience higher levels of parenting stress (Borca & Petrescu, 2022; Risnawati, Permatasari, Sa'diah, 2021). Parents of children with ASD face emotional challenges and must come to terms with their child's condition, which may lead to increased stress, anxiety, and depression (Demšar & Bakracevic, 2021; Fuld, 2018; Lievore et al., 2023; Muniandy et al., 2022). When parents experience high levels of stress and lack self-acceptance, it can negatively affect their parenting style. However, when parents possess a strong desire to help their children and maintain positive expectations, they are better equipped to support their child's development.

Parents play a vital role in promoting their children's independence by providing stimulation and support from an early age (Auld et al., 2022; Daniolou et al., 2022). Effective parenting for children with special needs requires traits such as resilience, acceptance, optimism, and confidence in their child's potential—collectively referred to as self-efficacy (Ghosh, 2022; Marsack-Topolewski et al., 2021; Risnawati et al., 2021).

Self-efficacy refers to one's belief in their ability to execute and manage actions to achieve desired outcomes (do Vale Costa e Silva et al., 2022; Smart, 2016). Parents with high self-efficacy contribute positively to their children's development of independence. Their perseverance in stimulating independence in children helps them overcome parenting challenges, build resilience, and foster motivation in their children (Leung et al., 2022; Susumaningrum et al., 2019).

A study by Y. Chen et al. (2022) found that maternal resilience and determination in teaching independence significantly impact a child's ability to carry out daily tasks independently. When mothers believe in their child's capabilities, this belief translates into

greater independence for the child. Parental efficacy empowers parents to implement effective parenting strategies that support their child's development (G. Chen et al., 2001; do Vale Costa e Silva et al., 2022; Leung et al., 2022).

Children's independence in daily living skills is essential for long-term well-being and mental health development (Hwang et al., 2020; Ozboke et al., 2022). When children can perform basic tasks independently, they are more likely to lead fulfilling lives, reduce their dependence on others, manage their own finances, and experience greater well-being and happiness. As a result, their developmental potential can be more fully realized (Eigsti et al., 2023; Hume et al., 2009; Marcotte et al., 2020). However, few quantitative studies have examined the relationship between ADLS and parental self-efficacy. This study aims to fill that gap by providing a quantitative overview of the developmental tasks most challenging for children with ASD. The findings are intended to serve as a foundation for developing age-specific instruments to assess and support the independence of children with autism.

Methods

Research Design

This study employed a quantitative research method with a correlational design. The objective was to examine the relationship between parental self-efficacy and Activities of Daily Living Skills (ADLS) in children diagnosed with Autism Spectrum Disorder (ASD).

Population and Sample

The population in this study comprised children aged 4–8 years who had been formally diagnosed with Autism Spectrum Disorder (ASD) by a licensed medical professional, as verified through an official medical diagnosis letter. A purposive sampling method was used to select participants who met the following inclusion criteria: (a) children with a confirmed ASD diagnosis supported by an official diagnostic letter from a certified medical professional, (b) children aged between 4 and 8 years, and (c) children without any comorbid developmental or neurological disorders.

Data collection was conducted at five specialized therapy centers for children with special needs located in the Greater Jakarta (Jabodetabek) area. Initially, 101 participants were recruited; however, five were excluded from the final analysis for exceeding the age limit of 8 years, resulting in a final sample of 96 respondents.

Respondent Characteristics

Table 1 provides a detailed overview of the child and parent respondents. The majority of child participants were male (72%) and predominantly 4 years old (40%). Most children did not have a caregiver other than their parents (67%), suggesting that parents were the primary caregivers.

Table 1. Respondent Description

Child			Parents		
Gender	N	%	Gender	N	%
Male	70	72 %	Male	2	3 %
Female	26	23 %	Female	94	97 %
Age			Age		
4	39	40 %	25-30	35	36 %
5	15	16 %	31-35	19	20%
6	17	17 %	36-40	29	30 %
7	12	13 %	41-45	9	9 %
8	13	13 %	>46	4	5%
Nanny			Education		
HavingNanny	32	33%	High School	35	37%
No Nanny	64	67%	Graduate	59	61%

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The majority of parent respondents were mothers (97%), mostly in middle adulthood, and a significant portion had attained graduate-level education (61%). Some families lived in multigenerational households, indicating shared caregiving responsibilities.

Data Collection Procedures and Instrument Development

The research process began with the selection of respondents who met the study's inclusion criteria. Children aged 4–8 years with a formal ASD diagnosis from a licensed medical professional were identified. Afterward, permission was obtained from relevant institutions, including therapy centers and schools for children with special needs. Formal letters explaining the purpose of the study and affirming adherence to ethical guidelines were submitted to these institutions.

Once approval was granted, researchers contacted parents to explain the objectives and procedures of the study in detail. Parents were provided with informed consent forms outlining their rights as participants, the voluntary nature of participation, and confidentiality measures to safeguard their personal data. Only after obtaining signed consent were parents and children included in the study.

Data were collected using two validated instruments: the Activity Daily Living Skills (ADLS) scale and the Parental Self-Efficacy scale.

Table 2. Research Instruments

Instrument	Dimensions	Likert Scale	Example Items	Reliability (Cronbach's Alpha)
ADLS Scale (WeeFIM Adaptation)	Self-care, Sphincter control, Transfer, Locomotion, Communication, Social cognition	1 (Total Assistance) to 4 (Independently)	e.g., 'Self-care: Child maintains personal hygiene independently'	0.913
Parental Self-Efficacy Scale (Bandura's Adaptation)	Parental perceptions of ability to support child's development	1 (Strongly Disagree) to 4 (Strongly Agree)	e.g., 'If my child cannot complete a task, I will continue guiding them'	0.930

As shown in Table 2, the ADLS scale, adapted from the WeeFIM (Functional Independence Measure for Children) developed by Slomine (2018), assessed six key areas of functional independence in children. These areas included self-care, which referred to the child's ability to maintain personal hygiene; sphincter control, which measured the child's ability to manage toilet-related activities; transfer, which assessed the child's capacity to move from one position to another; locomotion, which related to the child's gross motor skills; communication, which evaluated both verbal and non-verbal communication abilities; and social cognition, which involved cognitive functions such as problem-solving.

The ADLS scale utilized a 4-point Likert scale, where a score of 1 indicated that the child performed the activity with total assistance, while a score of 4 signified that the child was able to perform the activity independently. The second instrument was the Parental Self-Efficacy Scale, adapted from Bandura's original scale (1994). It measured parents' confidence in supporting their child's development, also using a 1–4 Likert scale, where 1 represented strongly disagree'' and 4 strongly agree.'' Example items included If my child cannot complete a task, I will continue guiding them,'' and I tend to give up immediately when my child fails to complete a task on the first attempt.''

Both instruments were translated into Indonesian and validated through expert review by three developmental psychology specialists to ensure clarity, cultural relevance, and content validity. A pilot study was conducted to test reliability, yielding strong internal consistency: Cronbach's alpha values were 0.913 for the ADLS scale and 0.930 for the parental self-efficacy scale.

Confidentiality was strictly maintained throughout the data collection process. All completed questionnaires were securely stored, and participant data were anonymized before analysis to ensure respondent privacy.

Data Analysis

Data analysis consisted of descriptive and correlational statistical techniques. Descriptive statistics were used to summarize respondent characteristics and provide an overview of the data. Variables such as age, gender, and parental self-efficacy scores were described.

To examine the relationship between parental self-efficacy and children's ADLS, a Pearson correlation analysis was conducted. This method was selected to evaluate both the strength and direction of the relationship. Hypothesis testing was performed using the Pearson correlation coefficient with a significance level of $\alpha = 0.05$.

Prior to the correlational analysis, classical assumption tests were conducted to ensure the validity of the statistical method. Normality was assessed using the Kolmogorov–Smirnov test, while homogeneity was evaluated using Levene's test. Both assumptions were met, confirming that the data were suitable for Pearson correlation analysis.

Result

Before conducting the analysis, classical assumption tests were performed to ensure the validity of the data. The results showed that the data were normally distributed, as indicated by the Kolmogorov-Smirnov value of 0.200 ($p > 0.05$). Furthermore, the homogeneity test yielded a Levene's value of 0.982 ($p > 0.05$), confirming that the data were homogeneous and indicating that the respondents came from a similar population.

Table 3. ADLs Score Description

	Range		f				Age				
Category	H	E	H	E	H	E	4	5	6	7	8
L	20-40	21-38	34	32	35%	33%	55%	27%	5%	8%	15%
M	41-60	39-55	45	36	47%	49%	45%	73%	70%	34%	54%
Hi	61-80	56-73	17	28	18%	18%	-	-	25%	58%	31%

H: Hypothetical, E: Empirical; L: Low activity daily living skill; M: Moderate activity daily living skill; Hi: High activity daily living skill

Based on Table 3, it was found that the majority of respondents (47%, n = 45) based on hypothetical values had moderate daily living skills, meaning they were able to carry out daily activities with minimal assistance, either directly or with instructions. Additionally, 35% (n = 34) of respondents had low ADLs scores, indicating that they required significant or total assistance in daily activities, while only 18% (n = 17) had high ADLs scores, suggesting they were capable of performing daily activities independently. The empirical categorization of ADLs did not differ significantly from the hypothetical values.

Children Aged 4 Struggle with Daily Living Skills; Skills Improve with Age

As clearly presented in Table 3, ADLs scores are detailed by age group. The analysis of ADLs scores reveals a clear developmental progression in children's ability to perform daily living tasks, with significant variation by age. At age 4, the majority of children (55%, n = 21) had low ADLs scores, and none (n = 0) achieved high scores, indicating that all respondents in this age group were still heavily dependent on assistance. By age 5, a noticeable improvement was observed, with 70% (n = 11) attaining moderate ADLs scores, although none had reached full independence.

The most substantial development occurred between ages 6 and 8. Among 6-year-olds, 70% (n = 12) achieved moderate scores, and 25% (n = 5) demonstrated independent daily living skills with high ADLs scores. This trend continued among 7-year-olds, where 58% (n = 7) attained high ADLs scores, and 35% (n = 4) fell into the moderate category, indicating a greater level of autonomy. By age 8, 31% (n = 4) had achieved high scores, while 54% (n = 7) scored in the

moderate range. These findings clearly demonstrate that as children age, their ability to perform daily tasks independently improves.

The progression of ADLs scores underscores the pivotal role age plays in the development of daily living skills among children with ASD. Younger children (ages 4–5) tend to be more dependent on assistance, likely due to ongoing development in motor, cognitive, and communication abilities. As children reach ages 6–8, their ability to carry out tasks independently improves significantly, often transitioning from moderate to high ADLs scores. These improvements reflect growing autonomy in self-care, mobility, and problem-solving as children mature.

The findings suggest that the early years (ages 4–5) are a critical period for intensive support and intervention, while ages 6–8 represent a window during which independence can be meaningfully fostered. The developmental gains observed during this period highlight the importance of targeted therapies promoting self-care, communication, and cognitive skills. Furthermore, the substantial improvement in independence between ages 6 and 8 indicates that interventions during this stage may yield the greatest gains in daily living skills.

In conclusion, the data demonstrate a strong correlation between age and the level of independence in daily activities. While younger children with ASD typically require considerable assistance, older children show a clear trend toward increased independence, particularly by ages 7 and 8. This underscores the need for age-appropriate interventions that adapt to developmental stages, encouraging both autonomy and skill acquisition.

Girls Outperform Boys in Daily Living Skills

Gender differences in ADLs scores were observed, with girls achieving higher mean scores (Mean = 46.15) than boys (Mean = 44.70). This indicates that girls demonstrated greater competence in daily living skills compared to boys. These findings are consistent with previous research, which has frequently shown that girls tend to outperform boys in daily living tasks, possibly due to differing socialization patterns or biological factors.

Table 4. Comparison of Means in ADLs Scores

Gender			Parenting			Nanny Appearance		
	Mean	Std.Dev		Mean	Std.Dev		Mean	Std.Dev
Boys	44.70	14.14	Grandparenting	39.45	14.12	Nanny	48.40	14.75
Girls	46.15	15.20	Parenting	47.78	13.7	No Nanny	43.43	13.96

As shown in Table 4, girls had higher average ADLs scores than boys, indicating better daily living skills. This supports previous studies involving adolescents and adults that reported similar gender differences (Merritt & Fisher, 2003). Similar results have been found in studies across different countries (Finland, Spain, and the UK), suggesting that gender differences in daily living skills are influenced by family roles (Gracia et al., 2002, 2022).

Socialization is a key factor in these differences. Girls are often encouraged from an early age to engage in activities that promote self-care, organization, and communication—essential components of ADLs. In contrast, boys may be socialized toward physical activities and independence in other domains, contributing to slightly lower performance in routine tasks. Biological differences, such as earlier development of fine motor and emotional regulation skills in girls, may also account for the performance gap in ADLs scores.

Nanny Support Positively Influences Children's Daily Living Skills

This study also found that the presence of a nanny is associated with differences in daily living skills among children with ASD (see Table 3). Children with nanny assistance had higher ADLs scores (Mean = 48.40) than those without such assistance (Mean = 43.43). This may reflect the role of nannies in providing structured care and reinforcing discipline learned in therapy. Additionally, nanny presence may be linked to higher socioeconomic status, offering families more resources to support development.

Children with nannies may come from families with greater financial means, allowing for the provision of consistent caregiving. The presence of a nanny also helps children implement structured routines aligned with therapeutic goals, reinforcing daily tasks through repetition and guidance. Furthermore, families with nannies often have more educational and financial resources to ensure specialized care. This suggests that nanny support can provide a focused, disciplined caregiving environment that promotes independence and skill acquisition in daily living.

Parenting Patterns and Grandparenting Impact ADLs

Table 4 also examines the relationship between parenting patterns (grandparenting vs. direct parenting) and ADLs scores. Children raised primarily by grandparents had lower mean ADLs scores (Mean = 39.45, SD = 14.12) than those raised directly by their parents (Mean = 47.78, SD = 13.70). This suggests that grandparent-led caregiving may involve less consistent routines or approaches conducive to the development of daily living skills.

While grandparents often provide nurturing and supportive care, their caregiving styles may differ from therapeutic or modern parenting approaches. These differences can result in less effective reinforcement of ADLs-related behaviors. The lower scores associated with grandparenting may reflect a more protective caregiving style that limits opportunities for independence. Prior studies have also noted that in low-income households, grandparent-led care may offer less structure or developmental support than parental care, potentially affecting the child's ability to acquire daily living skills.

ADLS Dimensions: Locomotion as the Easiest, Communication as the Most Challenging

Figure 1 presents the daily living skill scores of respondents across each dimension. The order of difficulty from the easiest to the most challenging is: locomotor > self-care > social cognition > transfer > sphincter > communication. The highest scores were recorded in locomotion, indicating that motor activities such as walking, climbing stairs, and moving forward or backward are relatively easy for the respondents. Similarly, basic self-care tasks—such as combing hair, bathing, and brushing teeth—were performed with a high level of competence. This suggests that physical mobility and fundamental self-maintenance are strengths among children with ASD, possibly reflecting early motor skill development or the prioritization of self-care routines in therapeutic and educational programs.

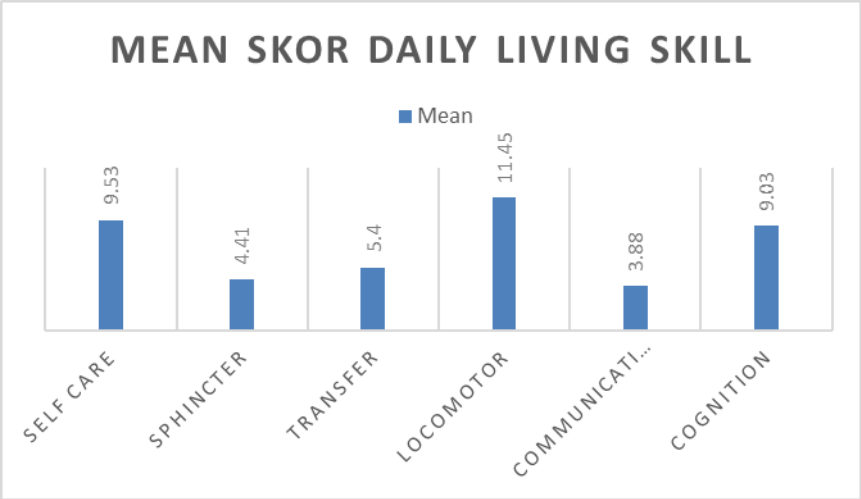

Figure 1. Mean of Daily living Skill Score

The cognitive dimension also demonstrated a relatively high mean score, indicating that the children in the study possess a solid capacity for problem-solving and intellectual engagement. These findings reinforce previous research suggesting that many children with ASD exhibit strong intellectual abilities, with some demonstrating exceptional talents or unique gifts (Bal et al., 2022). Other studies also affirm that children with ASD generally have diverse cognitive strengths, particularly in areas such as problem-solving and mathematics. However,

their success in these areas often depends on the delivery method of instruction, which must be adapted to meet their specific learning needs (Özkubat et al., 2020). Thus, when instructional strategies are tailored appropriately, cognitive tasks may represent a significant area of strength.

Conversely, the ADLS dimension with the lowest mean score was communication (Mean = 3.88), indicating that respondents struggled with understanding both verbal and non-verbal forms of communication. This finding aligns with existing literature documenting the communication challenges frequently experienced by individuals with ASD. A primary explanation is deficits in the development of Theory of Mind—the ability to understand one's own emotions and those of others (Rosello et al., 2020). Theory of Mind plays a key role in recognizing and interpreting emotional cues (Risnawati et al., 2023), and deficits in this area contribute to the difficulty ASD children have in processing verbal and non-verbal emotional expressions. Additionally, language acquisition difficulties further complicate communication development, as many children with ASD face challenges in both expressing and interpreting emotions, thereby hindering their ability to engage effectively in social interactions (Mostek, 2022).

As a result, communication remains the most significant area of difficulty, particularly due to the combination of Theory of Mind deficits and language development challenges, which impair the capacity for meaningful social engagement. To address these issues, targeted interventions should prioritize the enhancement of communication skills, emotional understanding, and language development. These efforts would not only support improved outcomes in daily living tasks but also contribute to more meaningful interpersonal relationships for children with ASD.

Parental Self-Efficacy Positively Correlates with Child Independence

Based on the categorization of parental self-efficacy scores (see Table 2), it was shown that the majority of respondents exhibited high self-efficacy, both hypothetically and empirically. Based on hypothetical scores, 58% (n = 55) of respondents had high self-efficacy, 33% (n = 32) were categorized as moderate, and 9% (n = 9) had low scores.

Table 5. Self-Efficacy Category Score

Category	Range		f			
	H	E	H	E	H	E
L	<45	<44	9	9	9%	9%
M	46-69	44-67	32	24	33%	25%
Hi	70-89	68-88	55	63	58%	66%

Table 6. Pearson Correlation

Variable	Pearson Correlation	Sig
Parent self-efficacy × ADLs	.375	.000

Based on the Spearman correlation test (see Table 6), it was found that parental self-efficacy positively correlates with children's Activity Daily Living Skills. This indicates that the greater the parents' confidence in educating and supporting their children with ASD, the higher the likelihood of their children developing the ability to carry out daily tasks independently. In practical terms, parents who believe in their capacity to guide and teach their children tend to foster greater independence in their children's day-to-day functioning.

Parental beliefs in their ability to manage their child's ASD-related challenges directly influence the outcomes of various interventions. Parents who feel empowered are more likely to implement and sustain strategies that foster independence, such as encouraging their child to complete tasks with minimal assistance. Furthermore, positive parenting practices often lead to healthier emotional and physical development in children, as they feel more supported and secure in exploring their autonomy (Ruiz-Zaldibar et al., 2021).

However, this positive correlation is not without challenges. While parental self-efficacy is an important factor, there are limitations and potential drawbacks. For instance, parents with low self-efficacy may feel overwhelmed by the demands of raising a child with ASD, which can

negatively affect the child's development. Stress, anxiety, and feelings of inadequacy can undermine a parent's ability to apply effective teaching strategies, potentially hindering the child's development of independence.

In addition, some parents may place excessive pressure on themselves, believing their child's success depends solely on their own parenting competence. This perception can lead to burnout and frustration, particularly in families with limited access to external support, such as therapists or educators. Moreover, while parental self-efficacy plays a significant role in the development of ADLs, it is not the only determinant. The severity of the child's ASD symptoms, availability of quality interventions, and the child's capabilities also critically influence outcomes.

Discussion

This study has provided significant insights into the relationship between age, gender, and parental self-efficacy, and how these factors influence the development of Activity Daily Living Skills (ADLS) in children with Autism Spectrum Disorder (ASD). The key findings suggest, first, that as children with ASD grow older, there is a clear developmental progression in their ability to perform daily tasks independently.

Children with ASD often experience notable gross and fine motor delays compared to typically developing peers, and these delays may become more pronounced with age (Mohd Nordin et al., 2021). Existing research has shown that the ability to carry out daily tasks independently tends to improve as children with ASD get older (Tomaszewski et al., 2020). Motor skills—particularly fine motor skills—play a critical role in mastering daily living skills (Skaletski et al., 2024). Improvements in daily living skills and motor proficiency are associated with reduced caregiver burden (Marsack-Topolewski et al., 2021) and enhanced quality of life for individuals with ASD (Ozboke et al., 2022). Language development is also closely linked to family roles and stimulation (Gerow et al., 2021; Szatmari et al., 2021; Yela-González et al., 2021).

The most substantial improvements were observed between the ages of 6 and 8, during which many children transitioned from moderate to high levels of independence in daily living skills (Bal et al., 2022; Chairunnissa & Pandia, 2023). This highlights a critical window of opportunity for targeted interventions during this developmental stage, particularly in self-care, problem-solving, and motor skills. Interventions should be tailored to the developmental needs of children with ASD, with particular emphasis on ages 6–8, when notable gains in independence typically occur.

The second finding revealed that girls outperformed boys in daily living skills, likely due to differences in socialization and biological factors. Girls often receive early socialization in activities that promote self-care and communication, while boys may focus on different developmental areas (Gracia et al., 2020, 2022). Previous research has shown that girls surpass boys in adaptive behavior and daily living skills during childhood. These gender differences are particularly evident in communication, socialization, and everyday functioning (Maurer, 2024). Factors that influence the trajectory of adaptive behavior include mental age, executive functioning, and the severity of autism symptoms (Tomaszewski et al., 2020). This finding underscores the importance of considering gender differences when designing intervention strategies for children with ASD. Intervention programs should accommodate differing developmental trajectories between boys and girls, emphasizing the promotion of self-care and communication skills among boys to help close the gap in ADLS performance.

The third finding is that the presence of a nanny was positively associated with higher ADLS scores. Children who received assistance from a nanny tended to benefit from structured routines and consistent reinforcement, which can support greater independence in daily activities. Research shows that children with neurodevelopmental disorders, including ADHD and ASD, often experience challenges with activities of daily living (Blanco-Martínez et al., 2020). These difficulties can persist into adulthood, affecting both independence and quality of life (Marsack-Topolewski et al., 2021). Contributing factors include memory ability, early language development, and family stimulation (Frisch et al., 2023; Szatmari et al., 2021).

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This finding suggests that families with access to external caregiving support, such as nannies, can use these resources to enhance their child's development (Mostek, 2022). Families utilizing nanny support should be encouraged to integrate therapeutic objectives into daily routines, as structured caregiving can significantly aid in the development of life skills. Conversely, children raised in grandparenting environments showed lower ADLS scores compared to those raised solely by their parents. This may stem from differing caregiving styles, as grandparents often provide more nurturing and protective care, potentially limiting the child's opportunities to practice independence. In households where grandparenting plays a significant role, it is essential to align caregiving practices with contemporary therapeutic strategies to ensure consistency and promote autonomy (Ruiz-Zaldibar et al., 2021). Enhancing Parental Self-Efficacy through training programs, support groups, and educational resources should be a central focus, as empowering parents is crucial to fostering independence in children with ASD.

The next finding highlights that parental self-efficacy has a positive correlation with children's ADLS, emphasizing the importance of parents' confidence in their ability to support their child's development. This result directly reflects the research focus, identifying parental self-efficacy as a key factor in promoting independence in daily living tasks. Parents who feel competent and empowered in their caregiving roles are more likely to have children who demonstrate greater autonomy. This aligns with existing research showing that parental self-efficacy positively influences children's physical activity (Kieslinger et al., 2021), early language development, and overall learning outcomes (Kong & Yasmin, 2022). Parental self-efficacy is particularly important for managing the needs of children with conditions such as ADHD (Hsieh et al., 2020). For parents of children with special needs, awareness, attitudes, and a sense of self-efficacy are closely associated with variations in child development (Altindağ Kumaş & Sardohan Yildirim, 2024).

Lastly, this study underscores the impact of grandparenting. Children raised with significant involvement from grandparents in their daily caregiving exhibited lower ADLS scores compared to those raised primarily by their parents. This suggests that grandparents may adopt caregiving approaches that differ from those of parents, which can affect the development of daily living skills. These findings offer important insights into how grandparenting dynamics influence the acquisition of daily living skills in children with autism, complementing the study's focus on the role of grandparental involvement.

Conclusion

This research identified a positive correlation between parental self-efficacy and the development of Activities of Daily Living Skills (ADLS) in children with Autism Spectrum Disorder (ASD) aged 4 to 9 years. When parents exhibit confidence in their ability to educate their child and implement intervention programs, the likelihood of successful development in daily living skills increases. Additionally, the study observed gender-based differences, with girls demonstrating a higher mastery of ADLS compared to boys.

Furthermore, parenting arrangements involving grandparents were associated with lower ADLS scores and reduced parental self-efficacy compared to independent parenting models. These findings suggest that cultural context and parenting styles can significantly influence variations in daily living skills among autistic children, highlighting the need for further research into the dynamics of shared caregiving between grandparents and parents. The presence of caregiver assistance, such as nannies, was also shown to positively influence children's independence, potentially reflecting underlying economic factors that enable families to access additional support.

This study did not explore the socio-economic and cultural contexts in depth; therefore, future research is recommended to examine these factors. Subsequent investigations should aim to identify the specific mechanisms through which parental self-efficacy affects child development, evaluate the impact of interventions across different developmental stages, and

assess the effectiveness of various support systems—such as caregivers and grandparents—in facilitating or hindering the acquisition of ADLS in children with ASD.

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