

Factors Associated with Autism Early Detection to Minimize the Need for Long-Term Care in Children: A Cross-Sectional Study

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ABSTRACT

Background: Autism is characterized by a total withdrawal from the outside world and a complete lack of interaction with the outside world. It is a complex developmental disorder affecting behavior, resulting in deficits in communication skills, social relationships, and emotional relationships with others. Symptoms are evident before the child is three years old. Autism has been increasingly reported in recent years. However, in Indonesia, some children are still diagnosed with autism late.

Purpose: This study aimed to determine factors influencing the early detection of autism.

Methods: This study used a cross-sectional correlation study. The study population was parents of children with autism registered at the Bali Province Special Needs School (SLB), with a sample size of 81. Data analysis used univariate analysis (percentages and frequencies) and bivariate analysis (Chi-square test).

Results: The study showed that the majority of respondents had primary/secondary education (66.7%), the majority were unemployed (55.6%), the majority had conducted regular and proper child development monitoring (82.7%), and the majority of children had received early detection for autism (53.1%). The correlation test results showed a relationship between parental education ($p = 0.028$), parental occupation ($p = 0.028$), and the number of children ($p = 0.011$) with early detection of autism in children.

Conclusion: More than half of the children had received early detection for autism. Early detection needs to be further enhanced through effective education about the importance of early detection for children.

Keywords: autism, early detection, parents

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BACKGROUND

Autism is characterized by a complete withdrawal from oneself and a complete withdrawal from the outside world. It is a complex developmental disorder affecting behavior, resulting in deficits in communication skills, social relationships, and emotional relationships with others. Symptoms are evident before the child is three years old. Autism has been increasingly reported in recent years (Kurniawan, 2021).

The number of autism sufferers in Indonesia is estimated to increase by around 500 each year. However, in 2013, it was estimated that more than 112,000 children aged 5-19 years had autism. The incidence of autism in Bali Province reaches 5.8% annually, and the number of children with autism in Denpasar City increases by 0.15% annually (Suarniti & Astiti, 2021). A diagnosis of autism can actually be made before the child is three years old. Early detection is absolutely essential because it allows for prompt intervention to minimize the severe negative impacts on the child with autism. However, early detection of autism is still often delayed. The average age of children at diagnosis was 36.76 months. In Indonesia, some children are still diagnosed with autism late (Kul et al., 2023).

Autism can actually be diagnosed before a child is three years old. Early detection is absolutely essential because it allows for immediate intervention to minimize the severe negative impacts on the child. However, early detection of autism is still often delayed. The average age at diagnosis was 36.76 months. In Indonesia, children are still diagnosed with autism late (Kul et al., 2023).

Child factor, family, health provider, and sociocultural/system factors has shown affect how early autism is detected. Characteristics of children that can influence early detection of autism, such as: communication deficits, severity of symptoms / comorbidity, early developmental trajectories, and gender. Family/parental factors that can influence early detection of autism, such as: parental education level/awareness/knowledge, first concerns by parents, socioeconomic status/household income, culturally & linguistically diverse background. Availability of screening tools & provider training, information available pre-assessment, and access to specialist diagnostic services are health system/provider-level factors that influence early detection of autism. Sociocultural/environmental factors that influence early detection of autism such as cultural norms & beliefs, socioeconomic/regional disparities (Hussain et al., 2023).

Given the importance of early intervention for children with autism, parents, especially mothers, as the primary caregivers, are expected to carefully monitor their children's development and conduct early detection. If a mother notices any abnormalities in their child's behavior compared to other children their age, she should immediately take the child to a psychiatrist/doctor for a more comprehensive examination (Kurniawan, 2021). The purpose of this study was to analyze factors related to the early detection of autism in children.

OBJECTIVE

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METHODS

This study employed correlational analytic methods with a cross-sectional approach. The study was conducted from August to September 2024 at a special need school (SLB) in Bali Province. The population was parents of children with autism in Bali Province. Using purposive sampling method, the number of sample in this study was 81 respondent. The inclusion criteria for respondent were parents of children with autism attending special needs

schools in Bali Province. Exclusion criteria were respondents who were unwilling to participate. Data collection was conducted using a questionnaire via Google Forms, which measured the variables. The questionnaire was developed by the researcher and previously tested for validity using a face validity. Meanwhile the questionnaires were also tested using reliability test, and the all part of questionnaire were reliable (Chronbach alpha ≥ 0.7). Content validity refers to the degree to which the items of a questionnaire adequately represent all aspects or domains of the construct being measured. It is evaluated by a panel of experts who are knowledgeable in the field of study. Univariate analysis included frequency analysis and bivariate analysis, including Chi-square analysis. For education characteristic, we convert from primary school, junior high school, senior high school, and higher education (four categories) to basic/middle and higher education (two categories) for bivariate analysis purposes. This research has been declared ethically suitable by the Bali ITEKES ethics committee with the number 04.0321/KEPITEKES-BALI/IX/2024.

RESULTS

Based on data collection using a questionnaire, the research results can be described as follows:

Table 1. Frequency Distribution of Respondent Characteristics (n=81)

Characteristics	Frequency	Percent
Parents' age (years)		
25-35	25	30.9
36-45	38	46.9
>45	18	22.2
Gender		
Male	12	14.8
Female	69	85.2
Education		
Primary school	8	9.9
Junior high school	12	14.8
Senior high school	34	42.0
Higher education	27	33.3
Occupation		
Not work	45	55.6
Official government/ military	3	3.7
Employee	14	17.3
Entrepreneur	19	23.4
Income (IDR)		
< 5 million	69	85.2
> 5 million	12	14.8
Number of children		
1	31	38.3
2	36	44.4
3	12	14.8
4	2	2.5

Based on Table 1, the data show that the majority of respondents were women. Based on age, the majority of respondents were between 36 and 45 years old (46.9%). Data based on education showed that the majority of respondents were high school graduates (42%). Based

on occupation, the majority of respondents were unemployed/housewives (55.6%), with the majority earning less than 5 million rupiah (85.2%), and most had two children (44.4%).

Table 2. Frequency distribution of early detection of children with autism (n= 81)

Detection	Frekuensi	Persent
Early detection	43	53.1
Late detection	38	46.9

From Table 2 above, the results show that most children with autism were detected early, with a total of 43 children (53.1%). Furthermore, 46.9% were declared to have been detected late.

Table 3. Factors associated with autism detection (n=81)

Variables	Early detection				p-value
	Early detection		Late detection		
	n	%	n	%	
Parents' age (years)					0.706
25-35	14	56.0	11	44.0	
36-45	21	55.3	17	44.7	
>45	8	44.4	10	55.6	
Gender					0.390
Male	5	41.7	7	58.3	
Female	38	55.1	31	44.9	
Education					0.028*
Basic/Middle	24	24.4	30	55.6	
Higher	19	70.4	8	29.6	
Occupation					0.028*
Not work	19	42.2	26	57.8	
Work	24	66.7	12	33.3	
Income (IDR)					0.816
< 5 million	37	53.6	32	46.4	
> 5 million	6	50.0	6	50.6	
Number of children					0.011*
1	22	71.1	9	29.0	
>1	21	42.0	29	58.0	

* Significance: $\alpha < 0.05$

Table 3 above shows that of the six independent variables, there are three variables that are significantly related to early detection of autism, namely parental education ($p = 0.028$), parental occupation ($p = 0.028$), and number of children ($p = 0.011$).

DISCUSSION

Early detection of autism in children is crucial for providing appropriate interventions and improving developmental outcomes. The age limit for early detection of autism is typically between 18 and 24 months (Sufa et al., 2023). At this age, children demonstrate developmental milestones in communication, social interaction, and behavior that can be used to identify whether they have autism spectrum disorder (ASD). Some early signs of autism can often be recognized even earlier, even as early as 6 months. However, formal assessment is usually

conducted around 18 months of age through developmental screenings and specialized screening tools (Jamilah et al., 2025).

The results of the study showed that the majority of respondents had an elementary/secondary education level, namely 66.7%. Based on the early detection category assessment, of the number of respondents who were at the elementary/secondary education level, the majority were stated to be late in detecting autism developmental disorders in children (55.6%). Statistical tests revealed a relationship between parental education level and early detection of autism and developmental disorders in children (Chen et al., 2023; Hunafa, 2025). These results indicate that parents with a higher educational background tend to be more aware of the signs of autism. They may be more proactive in seeking information and conducting screenings to identify developmental problems. Parental education level is often correlated with socioeconomic level. More educated parents may better understand the importance of early detection and how to identify signs of autism. It was shown that the majority (50.9%) of parents caring for autistic children were aware of the typical symptoms of autism that occurred in their children (Rahman, 2017). Good knowledge of these symptoms was mostly found by parents with a high level of education. The relationship between education and early detection of autism was also found Kul's (2023) study. The study revealed that a higher level of the father's education was associated with early diagnosis (Kul et al., 2023).

Based on parental occupation, the majority of respondents were unemployed (55.6%). Of the unemployed parents, the majority (57.8%) were late in detecting autism in their children, and of the employed parents, the majority (66.7 %) were early in detecting autism in their children. This suggests that occupation is associated with early detection of autism in children. This statement can be proven by statistical tests showing a relationship between parental occupation and early detection of autism. Parents with more stable or prestigious jobs may have more access to resources for their child's health, including regular health checkups and support services. Parental occupation can also be associated with a family's socioeconomic status (Leng et al., 2024; Rendani & Fatmawati, 2020).

Families with lower socioeconomic levels may have difficulty accessing the health services necessary for early detection (Sabda et al., 2023). This includes limitations in transportation, the cost of examinations, and therapy. Families with higher economic stress may experience pressure that impacts their attention to work, security, and childcare, thus affecting their awareness of developmental issues. Socioeconomic status from middle to upper is associated with early detection of autism in children (Kul et al., 2023). However, this study showed no significant relationship between family income level and early detection of autism and developmental disorders in children.

In this study, most respondents had more than one child (61.7%). Of these, the majority (58%) were categorized as having delayed early detection of autism and developmental disorders in children. Statistical tests indicate a relationship between the number of children and early detection of autism, with parents with more than one child being more likely to delay early detection. Families with more children may face challenges in providing sufficient individual attention to each child, thus reducing their ability to identify developmental issues in a particular child (Brennan et al., 2024; Harita & Chusairi, 2022). Families with more children may have more experience recognizing their child's behavior. They may be better able to compare their child's behavior with that of siblings and more quickly detect differences. Having more children can increase parental stress and responsibilities, affecting their focus on child development and early detection (Harita & Chusairi, 2022; Kishimoto et al., 2023).

This study has several limitations that should be acknowledged. The primary limitation is the relatively small sample size, which may reduce the statistical power and limit the generalizability of the findings to a broader population. With a larger number of participants,

the results might have provided a more comprehensive representation of the target population. Therefore, future studies are recommended to include a larger and more diverse sample to strengthen the validity and applicability of the results.

CONCLUSION

There is a relationship between parental education, occupation, and the number of children with early detection of autism. There is no relationship between age of parents, gender, and income with early detection of autism in children.

Parents are expected to pay closer attention to their children's development from infancy so that any abnormalities can be promptly addressed. Efforts to increase awareness and access to information and health resources are crucial to support early detection in diverse populations.

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CONFLICTS OF INTEREST

The researcher declares that there is no conflict of interest in the writing or publication of this article.

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