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# PRESCHOOL TEACHERS' KNOWLEDGE OF AUTISM (ASD) IN KLANG VALLEY

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**Abstract:** Autism Spectrum Disorder (ASD) is a neurodevelopmental condition that affects social interaction, communication, and behavior. Children with ASD often struggle with daily activities such as self-feeding, toileting, and dressing, which can impact their independence. Given that preschool teachers play a crucial role in early childhood development, their knowledge and awareness of ASD are essential in supporting children with special needs. This study examines the knowledge level on ASD among preschool teachers in Klang Valley using a quantitative research approach. A total of 106 preschool teachers participated in the study by completing the Autism Knowledge Questionnaire, which consisted of 30 True or False questions with an additional "Not Sure" option to minimize guessing. To ensure reliability and validity, the questionnaire was reviewed by professors, lecturers, and peers before implementation, with necessary modifications made based on their feedback. The results indicate that while most teachers demonstrate some knowledge of ASD, their understanding remained limited, with many possessing only a basic awareness of the condition. This gap in knowledge suggests that preschool teachers may lack the necessary skills to effectively support children with ASD in classroom settings. In conclusion, the findings emphasize the need for greater ASD awareness and training among early childhood educators. Providing specialized training and professional development opportunities can enhance teachers' understanding of ASD, equipping them with the skills to create inclusive learning environments and offer better support to children with ASD.

**Keywords**: Autism Spectrum Disorder (ASD), preschool teachers, ASD knowledge, ASD awareness, neurodevelopmental disorder

## INTRODUCTION

Autism Spectrum Disorder (ASD) is a complex neurodevelopmental condition characterized by difficulties in social interaction, communication, and repetitive behaviors, with symptoms varying significantly among individuals (American Psychiatric Association, 2024). ASD can impact daily living skills, including self-care and social adaptation, necessitating different levels of support based on an individual's unique strengths and challenges (Ahmed et al., 2021; Fucà et al., 2023).

Early identification and intervention are essential for improving long-term outcomes for individuals with ASD (Okoye et al., 2023). The global prevalence of ASD continues to rise, with the World Health Organization estimating that 1 in 100 children worldwide are diagnosed with the disorder (World Health Organization, 2023). In the United States, the Centers for Disease Control and Prevention reports that 1 in 36 children aged 8 years have ASD (Maenner et al., 2023), while Malaysia has seen a 663% increase in autism cases over the past decade (Ova, 2024).

This study examines preschool teachers' knowledge of ASD in Klang Valley, Malaysia, a dynamic urban region where early childhood educators play a pivotal role in identifying developmental delays. Enhancing teachers' foundational ASD knowledge can facilitate early detection, appropriate support, and necessary referrals for formal diagnosis and intervention (Taresh et al., 2020; Feeney et al., 2022).

## BACKGROUND OF THE STUDY

Autism Spectrum Disorder (ASD) is increasingly recognized as a global public health concern due to its rising prevalence and the diverse challenges it presents (Li et al., 2022), including within Malaysia (UNICEF Malaysia, 2023). In Malaysia, awareness and understanding of ASD have improved over the past decade (Kaur et al., 2015); however, significant gaps remain, particularly in early childhood education settings, where timely identification is crucial.

Preschool teachers are often among the first adults outside of a child's immediate family to recognize developmental differences, making their knowledge of ASD critical for early intervention and support. Klang Valley, one of Malaysia's most developed regions, has a diverse educational landscape encompassing both public and private preschools with varying levels of training and resources for educators.

Studies from other regions indicate that many preschool teachers lack sufficient knowledge about ASD, which can delay diagnosis and access to intervention services (Yahya & Mohamed, 2024; Taresh et al., 2020). Given the rising number of ASD diagnoses in Malaysia, assessing preschool teachers' understanding of ASD in Klang Valley is imperative. Identifying knowledge gaps will provide insights into training needs and inform strategies for improving early identification and intervention for children with ASD.

## PROBLEM STATEMENT

In preschool settings, children with ASD often experience difficulties in learning and social development, especially when teachers lack the knowledge to recognize early signs and provide appropriate support. Without timely identification, teachers may fail to refer children to specialists, delaying diagnosis and access to critical intervention services. Such delays can significantly affect a child's developmental progress and overall well-being (Okoye et al., 2023).

Furthermore, a limited understanding of ASD among educators can hinder the effectiveness of inclusive learning environments, making it challenging to support children with ASD in mainstream classrooms. Despite the pivotal role preschool teachers play in early detection, research on their level of ASD knowledge in Klang

Valley remains scarce. In addition, there are also widespread misunderstandings about ASD etiology and characteristics among teachers (Gómez-Marí et al., 2021; Sanz-Cervera et al., 2017).

This study aims to assess preschool educators' understanding of ASD and explore factors influencing their knowledge levels. Identifying these gaps will help strengthen training programs and enhance support systems for children with ASD in early childhood education settings.

## RESEARCH OBJECTIVES

The primary objective of this study is to assess preschool teachers' knowledge of Autism Spectrum Disorder (ASD) in Klang Valley.

## RESEARCH QUESTION

This study aims to answer the following research question:
What is the level of knowledge that preschool teachers in Klang Valley possess regarding Autism Spectrum Disorder (ASD)?

## SIGNIFICANCE OF THE STUDY

This study contributes to both theoretical understanding and practical applications in early childhood education and ASD intervention in Klang Valley. By evaluating preschool teachers' knowledge of ASD, this research aims to strengthen early identification and intervention strategies.

Preschool teachers play a critical role in detecting early signs of ASD, enabling timely interventions that significantly improve developmental outcomes and overall quality of life (Okoye et al., 2023). The findings of this study will provide valuable insights into teachers' current knowledge levels and inform the development of targeted training programs.

These programs will equip educators with the necessary skills to identify early ASD indicators and facilitate appropriate referrals. Additionally, this research supports the creation of a comprehensive educational module for preschool teachers, not only addressing ASD awareness but also enhancing educators' belief systems and identification skills. Strengthening these areas ensures that children on the autism spectrum receive early and appropriate support (Taresh et al., 2020).

## RESEARCH METHODOLOGY

### *Research Design*

This study employs a quantitative, cross-sectional survey design to assess preschool teachers' knowledge of Autism Spectrum Disorder (ASD) in Klang Valley. The cross-sectional approach provides a snapshot of participants' current knowledge, allowing comparisons across demographic factors such as age, gender, teaching experience, training, and exposure to children with ASD. This design is particularly efficient for large-scale data collection within a limited timeframe (Abdullah et al., 2022).

### *Research Population and Respondents*

The target population comprises preschool teachers in Klang Valley, representing diverse educational settings such as private and public preschools, special needs centers, and homeschooling environments. A convenience sampling method was used to recruit participants, ensuring a varied sample of educators with different backgrounds. A total of 106 preschool teachers participated in the survey.

### *Research Instrument*

The survey was conducted online via Google Forms, ensuring participant anonymity and convenience. This method enhanced accessibility and encouraged greater participation, aligning with modern research approaches (Taherdoost, 2022).

The questionnaire assessed preschool teachers' knowledge of ASD through 30 True/False questions, with an additional "Don't know" option to minimize guessing. It consisted of two sections: the first collected demographic information, while the second evaluated ASD knowledge. The questionnaire was adapted from established sources, including Stone (1987), Shah (2001), Furnham and Buck (2003), and Haimour and Obaidat (2013).

The survey was conducted in English, with responses automatically recorded in Google Sheets for analysis. To ensure reliability and validity, the questionnaire was reviewed by professors, lecturers, and peers, with necessary adjustments made based on their feedback on clarity and comprehensibility.

### *Data Analysis*

The collected data were analyzed using both descriptive and inferential statistics. Descriptive statistics summarized demographic characteristics and overall trends, while preliminary analyses were conducted to detect outliers and assess data normality. Inferential statistical tests, including t-tests, ANOVA, and correlation analysis, were applied to examine differences in ASD knowledge across demographic variables. All analyses were performed using SPSS version 27.

## LIMITATIONS OF THE STUDY

Despite its contributions, this study has several limitations that should be acknowledged. First, the use of a convenience sampling method may limit the generalizability of the findings beyond the sampled preschool teachers in Klang Valley. The participants may not fully represent the diverse educational backgrounds and experiences of preschool educators across Malaysia.

Second, while the survey design provides valuable quantitative insights, it does not capture qualitative perspectives such as teachers' personal experiences, beliefs, and challenges in identifying and supporting children with ASD. Future research incorporating qualitative interviews or mixed-method approaches could provide a more comprehensive understanding of educators' knowledge and attitudes.

Additionally, the study relies on self-reported data, which may be influenced by response biases such as social desirability, where participants may overestimate their familiarity with ASD concepts. Triangulating survey responses with observational or practical assessments could enhance the accuracy of the findings.

## RESEARCH FINDINGS

### *Demographic Characteristics of Respondents*

Table 1 presents a summary of the demographic profile of the respondents, detailing key aspects such as gender, age group, teaching experience, teaching placement, prior ASD-specific training, and exposure to children with ASD. A total of 106 preschool teachers participated in this study.

The participants' ages ranged from 20 to over 51 years old in this study, with 29 participants between 20 and 30, 27 participants between 31 and 40, 31 participants between 41 and 50, and 19 participants over 51 years old (refer Table 1). Table 1 also shows that the majority of participants in thius study (n = 86, 81.1%) are

employed in private or international preschools (Table 1.6), while 10 participants (9.4%) work in public schools, and 5 participants each (4.7%) work in special needs centers or homeschool preschool settings.

**Table 1**

*Age of the respondents*

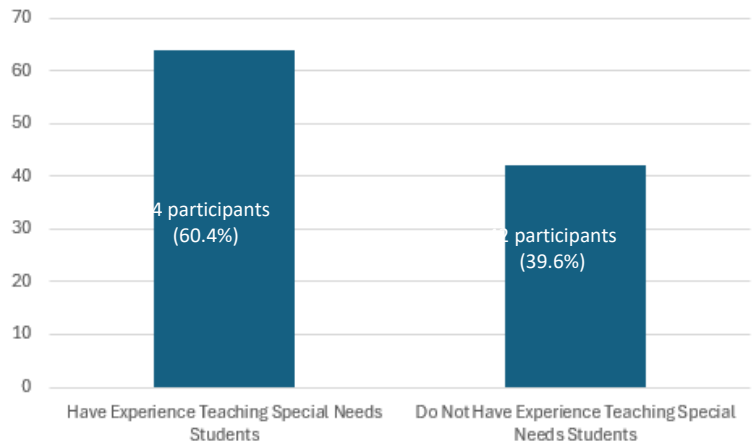
| Profile | | Frequency (N=106) | % |
|---|---|---|---|
| Age Group: | 20-30 | 29 | 27.4 |
| | 31-40 | 27 | 25.5 |
| | 41-50 | 31 | 29.2 |
| | above 50 | 19 | 17.9 |
| Teaching Placement: | Public School | 10 | 9.4 |
| | Private/International | 86 | 81.1 |
| | Special Education Center | 5 | 4.7 |
| | Home Schooling | 5 | 4.7 |

*Experience of Teaching Special Needs Students*

In terms of experience teaching special needs students, the pie-chart below (Figure 1) shows a significant proportion (64 participants, 60.4%) had prior experience, whereas 42 participants (39.6%) had not previously worked with children with special needs. Among those with experience in special education, the length of engagement varied, with 31 teachers (29.2%) having between 1 to 3 years of experience in teaching, 20 teachers (18.9%) having teaching experience between 4 to 7 years, 8 teachers (7.5%) having teaching experience between 8 to 10 years, and 5 teachers (4.7%) possessing more than 10 years of experience in teaching.

Figure 1

*Experience teaching special needssStudents*

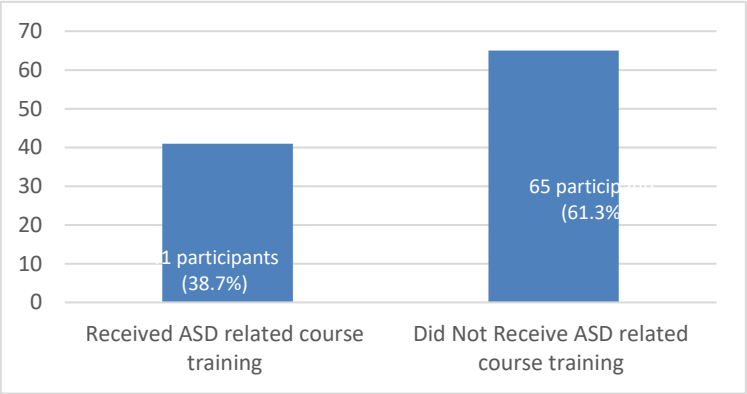



*Course Training Received Related to Special* Needs

The bar chart below illustrates the professional development related to ASD, 41 participants (38.7%) had undergone specific ASD-related training, whereas 65 participants (61.3%) reported not receiving any formal training in ASD intervention strategies.

**Figure 3**

*Course Training Received Related to Special* Needs




***Teacher's Knowledge of Autism Spectrum Disorder (ASD)***

The study assessed the knowledge of 106 preschool teachers in Klang Valley regarding Autism Spectrum Disorder (ASD) using the Autism Knowledge Questionnaire (AKQ). The results exhibited a wide range of knowledge, with correct response rates varying from 23.6% to 89.6%. While some teachers demonstrated strong awareness of core ASD characteristics, notable misconceptions and knowledge gaps were evident, underscoring the need for targeted professional development.

*Areas of Concern: Key Misconceptions and Knowledge Gaps*

Table 2 illustrates that several items revealed a concerning lack of understanding. Ten items (Item 1, 6, 9, 11, 12, 16, 21, 24, 29, and 30) had correct response rates below 50%, indicating substantial misconceptions. For instance, many teachers incorrectly believed that most children with ASD have an intellectual disability (Item 1, M = 0.45, SD = 0.50) and that ASD is curable through early diagnosis and intervention (Item 30, M = 0.34, SD = 0.48). Additionally, the belief that dietary changes significantly impact ASD outcomes (Item 29, M = 0.24, SD = 0.43) highlights widespread misinformation. These misconceptions can influence teaching approaches and interventions, emphasizing the urgent need for evidence-based professional development.

Beyond these ten items, five additional statements (Item 4, 13, 14, 20, and 25) had correct response rates between 50% and 60%, indicating moderate understanding but still requiring improvement. For example, Item 13 (M = 0.58, SD = 0.50) suggests that some teachers believe ASD can be diagnosed based on physical features alone, reflecting a limited grasp of the behavioral diagnostic criteria. Similarly, misconceptions about behavioral intervention as the most effective treatment (Item 14, M = 0.58, SD = 0.50) point to the necessity of further awareness regarding a holistic approach to ASD management.

*Strengths in ASD Knowledge*

Despite the identified misconceptions, the findings displayed in Table 2 shows that some areas of ASD knowledge were well understood. Three items (Item 10, 22, and 23) stood out with correct response rates above 80%, demonstrating strong awareness in certain aspects. Teachers recognized that children with ASD often exhibit sensory sensitivities (Item 10, M = 0.87, SD = 0.34), prefer routine activities (Item 22, M = 0.90, SD = 0.31), and that ASD can be diagnosed through behavioral observation (Item 23, M = 0.89, SD = 0.32). These high scores suggest that teachers have a foundational understanding of ASD-related behaviors, which can be further leveraged in professional development programs.

Additionally, seven items (Item 3, 8, 15, 17, 19, 26, and 27) displayed correct response rates between 70% and 80%, highlighting a moderate-to-strong grasp of ASD characteristics. For instance, teachers correctly acknowledged that some children with ASD exhibit special abilities (Item 3, M = 0.79, SD = 0.41) and frequently repeat speech (Item 26, M = 0.80, SD = 0.40). These findings indicate potential strengths that can be reinforced through structured training modules.

*Implications for Professional Development and Training*

The overall findings displayed in Table 2 also indicate a moderate level of ASD knowledge among preschool teachers in Klang Valley, with an average correct response rate of 59.4% (M = 0.594, SD = 0.158). While teachers demonstrated competency in recognizing certain core ASD characteristics, significant gaps remain, particularly in diagnosis, treatment, and intervention strategies. Addressing these misconceptions through targeted training programs is essential to ensuring educators are well-equipped to support children with ASD effectively.

Future professional development initiatives should focus on correcting key misconceptions, particularly those related to ASD diagnosis, treatment, and developmental outcomes. Integrating evidence-based training, practical workshops, and case studies could bridge these knowledge gaps, fostering a more informed and

competent preschool teaching workforce. By strengthening educators' understanding, early childhood education settings can become more inclusive and supportive environments for children with ASD.

**Table 2**

*Mean and standard deviation for each item in the questionnaire regarding knowledge that preschool teachers in Klang Valley have regarding Autism Spectrum Disorder (ASD)*

| Item | Statement | N | Mean | Std. Deviation |
|---|---|---|---|---|
| 1 | Most children with ASD have an intellectual disability. | 106 | 0.45 | 0.50 |
| 2 | ASD usually diagnosed during the first three years of the child's age. | 106 | 0.64 | 0.48 |
| 3 | Children with ASD usually manifest special abilities like drawing and facts and figures remembering. | 106 | 0.79 | 0.41 |
| 4 | Children must exhibit impaired social interaction and language communication to be diagnosed with ASD. | 106 | 0.50 | 0.50 |
| 5 | ASD is a developmental disorder. | 106 | 0.64 | 0.48 |
| 6 | With proper intervention, most children with ASD will eventually "outgrow" the disorder. | 106 | 0.35 | 0.48 |
| 7 | Most children with ASD do not talk. | 106 | 0.66 | 0.48 |
| 8 | The majority of children with ASD are female. | 106 | 0.76 | 0.43 |
| 9 | Most children with ASD have difficulty with imaginary playing. | 106 | 0.46 | 0.50 |
| 10 | Some children with ASD have high or low sensitivity of visual, auditory, tactile, or olfactory stimuli. | 106 | 0.87 | 0.34 |
| 11 | ASD disorder is diagnosed by medical methods. | 106 | 0.44 | 0.50 |
| 12 | Behavioral patterns in children with ASD are similar. | 106 | 0.44 | 0.50 |
| 13 | We can diagnose ASD by just depending on physical features. | 106 | 0.58 | 0.50 |
| 14 | Behavioral intervention is considered the most effective treatment method for children with ASD. | 106 | 0.58 | 0.50 |
| 15 | In many cases, the cause of ASD is unknown. | 106 | 0.72 | 0.50 |
| 16 | Children with ASD tend to be auditory learners. | 106 | 0.44 | 0.50 |
| 17 | Some children with ASD demonstrate inconsistency in motor skills. | 106 | 0.77 | 0.42 |
| 18 | Poor parenting practices can cause ASD. | 106 | 0.67 | 0.47 |
| 19 | Children with ASD behave better in structured and organized educational environments. | 106 | 0.74 | 0.44 |
| 20 | If a particular method of treatment achieved effective results with some children with ASD, then it is necessarily effective with all children with Autism. | 106 | 0.57 | 0.50 |
| 21 | ASD could be associated with Epilepsy. | 106 | 0.26 | 0.44 |
| 22 | Children with ASD prefer routine activities. | 106 | 0.90 | 0.31 |
| 23 | ASD can be diagnosed through behavioral observation. | 106 | 0.89 | 0.32 |
| 24 | Medication can alleviate the core symptoms of ASD. | 106 | 0.44 | 0.50 |
| 25 | Genetic factors play an important role as a cause o ASD. | 106 | 0.55 | 0.50 |
| 26 | Children with ASD frequently repeat the talk they hear. | 106 | 0.80 | 0.40 |
| 27 | Generally, children with ASD understand feelings and emotions of others. | 106 | 0.71 | 0.46 |
| 28 | Children with ASD demonstrate stereotypical behaviors like fluttering. | 106 | 0.61 | 0.49 |
| 29 | Changing the diet of a child with ASD will make a difference in their outcome. | 106 | 0.24 | 0.43 |
| 30 | ASD is curable if diagnosed early and the appropriate intervention is provided. | 106 | 0.34 | 0.48 |
| | **Mean of knowledge knowledge that preschool teachers in Klang Valley have regarding ASD** | | **0.594** | **0.16** |

## DISCUSSIONS AND CONCLUSIONS

The findings from this study reveal that while preschool teachers in the Klang Valley possess a foundational understanding of Autism Spectrum Disorder (ASD), significant gaps remain in certain critical areas. The overall correct response rate was 59.4%, indicating a moderate level of knowledge. Notably, misconceptions persist among educators. For instance, only 45% correctly identified that most children with ASD do not have an intellectual disability, and 67% erroneously believed that poor parenting practices can cause ASD. These findings align with previous research highlighting widespread misunderstandings about ASD etiology and characteristics among teachers (Gómez-Marí et al., 2021; Sanz-Cervera et al., 2017).

The study also underscores the impact of experience and targeted training on teachers' knowledge levels. Educators with prior experience teaching students with special needs and those who had participated in ASD-specific training programs demonstrated a higher understanding of the disorder. This observation is consistent with existing literature emphasizing the positive correlation between specialized training and improved teacher competency in supporting students with ASD (Majin, 2017; Manukwana, 2020).

To address these knowledge gaps, it is imperative to implement comprehensive professional development programs focusing on ASD. Such initiatives should aim to dispel prevalent myths, enhance understanding of evidence-based practices, and equip teachers with practical strategies for classroom inclusion. Effective approaches may include Applied Behavior Analysis (ABA), the use of visual supports, and structured routines, all of which have been shown to benefit students with ASD (Zauderer, 2025; Big Dreamers ABA, 2025).

Finally, it is important for school leaders to play a crucial role in fostering an inclusive culture that values diversity and supports all learners. By promoting positive attitudes toward disabilities, increasing awareness, and implementing inclusive teaching practices, schools can create welcoming environments for children with ASD and their families (Kluth, 2010; Brown, 2025).

## IMPLICATIONS AND RECOMMENDATIONS

The findings underscore the importance of targeted professional development programs to enhance preschool teachers' knowledge of ASD. Teachers with prior experience handling children with special needs, as well as those who had undergone ASD-specific training, demonstrated greater competency in recognizing and understanding the disorder. This aligns with previous research emphasizing the positive impact of specialized training on teacher preparedness in inclusive education settings.

To bridge the identified knowledge gaps, professional development initiatives should focus on dispelling myths and reinforcing evidence-based strategies for supporting children with ASD. Practical approaches such as Applied Behavior Analysis (ABA), the integration of visual supports, and structured learning environments have been widely recognized as effective in fostering positive learning outcomes. These methods can help teachers create inclusive classroom experiences tailored to the unique needs of children with ASD. Additionally, incorporating training on sensory sensitivities, behavioral interventions, and communication strategies will further equip educators with the necessary tools to support their students effectively.

## CONCLUSION

This study highlights that while preschool teachers in the Klang Valley exhibit moderate knowledge of ASD, several misconceptions remain, particularly regarding etiology, intervention, and symptoms. Addressing these gaps through structured training and professional development is vital in ensuring educators are adequately prepared to support children with ASD. Moreover, fostering an inclusive educational culture requires the commitment of school leaders to implement proactive strategies and promote awareness. By prioritizing evidence-based learning, professional training, and inclusive practices, educators can better serve children with ASD, empowering them to thrive in structured learning environments.

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