

## ORIGINAL ARTICLE

# Awareness and Stigma Towards Autism Spectrum Disorder Among Sub-urban Community: A Cross-Sectional Study

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### ABSTRACT

**Introduction:** Autism Spectrum Disorder (ASD) is a complex neurodevelopmental condition that affects communication, behaviour, and social interaction, with varying degrees of severity across the spectrum. Public awareness and perceptions of ASD significantly influence the social inclusion and support available to individuals with the disorder, particularly within community settings. This study aimed to determine the level of awareness and stigma towards ASD in the suburban community. Additionally, it examined the relationship between sociodemographic and the stigma of ASD. **Methods:** A cross-sectional study was conducted in the suburban community in Selangor, and 400 participants were recruited using convenience sampling. A study adopted a structured questionnaire, an Autism Awareness Survey, and a Social Distance Scale. Data were analysed using SPSS version 29. **Results:** The finding revealed that the participants have a moderate awareness of ASD, with a mean score =0.58 (SD=3.49) of ASD but a notable degree of stigma of 13.81(SD=4.64). There was a weak positive correlation between awareness and stigma,  $r=0.217$ . Additionally, significant associations were found between stigma and gender ( $p<0.001$ ) and educational levels ( $p=0.007$ ). **Conclusion:** This study found that while the suburban community shows a moderate level of awareness about ASD, significant stigma remains prevalent. The findings suggest that awareness alone is insufficient to reduce stigma, highlighting the need for more targeted educational efforts. Thus, to effectively reduce stigma toward ASD, awareness campaigns must go beyond merely increasing knowledge and focus on challenging and changing negative attitudes.

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### INTRODUCTION

The World Health Organization defines autism spectrum disorder (ASD) as a complex developmental disorder characterized by frequent difficulties with social communication, a limited range of interests, and repetitive actions (1). Autism is referred to as a spectrum disorder because the symptoms and their severity vary from individual to individual. Individuals with autism have narrowly concentrated interests, greater reactions to sensory stimuli, and differences in social communication and interaction compared to the general population (2). These characteristics can significantly impact daily functioning, making it challenging for individuals with ASD to navigate social environments, pursue education, and maintain employment.

The prevalence of ASD in Malaysia was estimated to be 1.6 per 1000 children based on screening for autism among children ages 18 to 36 months in child health clinics (3). ASD is becoming more well-known in Malaysia, yet knowing or hearing about ASD does not always correlate to having sufficient awareness and understanding of the disorder (4). Certain public in Malaysian society have been relying on cultural ideas like karma or religious mysticism to explain the origins of ASD since they lack sufficient understanding of the disease (4-5). Lack of awareness concerning ASD results in treatment delays and stigmatization of autistic persons (6-7).

Public awareness and understanding are essential for fostering social acceptance and providing necessary support for those with ASD. Increased awareness can improve the recognition of ASD symptoms, enabling early diagnosis and intervention, which are crucial for positive long-term outcomes (7). Moreover, informed communities are more likely to adopt inclusive behaviors,

thereby reducing stigmatization and facilitating the integration of individuals with ASD into various social, educational, and occupational settings (8). Therefore, improving public knowledge and changing perceptions of ASD are vital for creating a more inclusive society where individuals with ASD receive the support and acceptance they need.

Stigma is defined as a social process characterized by labeling, stereotyping, and discrimination against individuals or groups perceived as different or deviant from societal norms (9). The stigma attached to ASD frequently results from assumptions made about the signs of sensory overload (10). The stigmatized are viewed as being human but imperfect, which can be used as an excuse for discrimination, which is unpleasant and hinders the growth of the stigmatized person (11). Children with autism and their families frequently experience stigma and discrimination due to societal speculations about the condition (5). There is a report that up to 90% of children with ASD have symptoms that do not change or worsen throughout their lives since ASD is a lifelong disorder (2). Since autistics are frequently stigmatized, it has been acknowledged that public acceptance and awareness are essential for allowing autistics' involvement in society (7-8).

The rising prevalence of ASD and the associated stigma impacting individuals with ASD and their families highlight an urgent need to bridge the knowledge gap in Malaysia. Assessing community awareness and stigma related to ASD is essential, as the study has important implications for policy development. It could advocate for increased funding for early intervention services, autism awareness campaigns, and support systems for individuals with ASD and their families (12). Additionally, the study's findings may inform educational strategies by integrating autism education into school curricula, training educators, and creating inclusive school environments to address stigma and enhance awareness (13). Therefore, this study's objectives are to identify the level of awareness and stigma towards ASD within a suburban community and examine the association between awareness and stigma towards ASD. Additionally, it examined the association between sociodemographic and the stigma of ASD

## **MATERIALS AND METHODS**

A cross-sectional study method was applied to this research using convenience sampling among 400 respondents in the suburban area of Selangor. The inclusion criteria are that the residents' age ranges from 18 to 65 and that they understand Malay or the English language. Meanwhile, the exclusion criteria are critically ill and unstable conditions (dementia, psychosis, intellectual disability, visual impairment).

## **Study Instruments**

A self-administered questionnaire was used for this research. The questionnaire consisted of three sections, parts A, B, and C. Part A consists of the demographic profile of participants. In Part B, the Autism Awareness Scale adopted from (Gillespie-Lynch et al. (14) measures awareness levels toward ASD. The questionnaire has 13 items graded on a 5- 5-point- Likert scale, ranging from -2 to 2, representing the categories of strongly disagree, disagree, neither agree nor disagree, agree, and strongly agree. compute the score, reverse score items 2,3,5,7,9,11, and 12 add to these items 1,4,6,8,10 and 13. The total score was obtained by summing each item's score, which ranged between -26 and 26. The higher the score, the higher the awareness level. The scale's reliability with the value of Cronbach's alpha is 0.70.

Subsequently, the Social Distance Scale was used (15) to identify the level of stigma toward ASD. This questionnaire consists of 6 questions based on a 4-point Likert scale that ranges from 1 to 4. Score 1 indicates 'definitely willing,' and score 4 indicates 'definitely unwilling.' The total score ranges from 6 to 24, with a higher score indicating a higher stigma toward ASD. The Cronbach alpha of this assessment is 0.85.

## **Ethical consideration**

The study received ethical approval from the Research Ethics Committee of Universiti Teknologi MARA, Malaysia FERC/FSK/MR/2023/00363. The participants' information was also ensured to remain anonymous. participants in this study were recruited voluntarily and had the right to refuse to participate in this research or withdraw at any time without any consequences.

## **Data Collection**

The data collection process commenced after receiving approval from the official UiTM Research Ethics Committee. Participants were recruited through social media platforms, including resident WhatsApp groups and community Facebook pages. Individuals were asked to complete a consent form via Google Forms upon agreeing to participate. Following consent, participants were required to fill out the questionnaire. They were informed that their participation was voluntary and that they had the right to withdraw from the study at any time. The Google Form was configured to ensure that all sections were completed before submission, with responses automatically saved to Google Drive. Data will be securely stored until the research is completed and for a maximum of two years to facilitate the publication of the findings. Confidentiality of the information obtained was maintained throughout the study. All data were analysed using the Statistical Package for Social Science (SPSS) program version 29.0. The analysis was conducted using descriptive and inferential statistics (i.e., Spearman Rank Correlation Coefficient), with a p-value less than 0.05, which was considered significant.

## RESULTS

### Demographic Characteristics of Respondents

In Table I, out of 400 participants, the majority were male 202 (50.5%), and the most common age group was 26 to 44 years old, 216 (54.0%) of the participants. Regarding educational background, the highest proportion of respondents held a degree, 172 (43.0%), followed by those with a diploma, 104 (26.0%). Most of the participants were parents, with 243 (60.8%).

**Table I: Demographic Characteristics Variable**

Variables	Category	(f)	(%)
<b>Gender</b>	Female	198	49.5
	Male	202	50.5
<b>Age</b>	18- 25 years	155	38.8
	26-44 years	216	54.0
	45-59 years	25	6.3
	60-65 years	4	1.0
<b>Educational level</b>	Secondary	93	23.3
	Diploma	104	26.0
	Degree	172	43.0
	Master	31	7.8
<b>Parental status</b>	Yes	157	39.3
	No	243	60.8

### Awareness of autism

Most respondents, 32.8% (131), agreed with the statement that autism is more frequently diagnosed in males than in females. Most of the respondents were aware that 'children with autism can grow up to go to college and marry' and 'autism can be diagnosed as early as 15 months of age' with 31.5%(126) and 39.0% (156), respectively. However, respondents were

less informed about certain aspects of autism, as 28.0% (112) incorrectly believed that children with autism do not form attachments, even to parents or caregivers, and 17.8% (71) agreed that 'people with autism are deliberately uncooperative'. Additionally, 27.8% (111) strongly agree that 'there is one intervention that works for all people with autism ', and 21.5% (86) believed that 'with the proper treatment, most children diagnosed with autism eventually outgrow the disorder'. Misconceptions persisted, with 26.3% (105) strongly agreeing most 'people with autism have low intelligence' and 25.5% (102) believing 'people with autism tend to be violent'. The mean score was 0.58 (SD=3.49) above the mid point, indicating that the participants in the suburban community were aware of ASD (Table II).

### Stigma Toward ASD Among Suburban Community

Table III shows the stigma response to ASD among the respondents. The respondents were somewhat willing 'would be to move next door to someone with autism' 51% (204), 40.5% (162) of respondents 'would be to spend an evening socializing', and 44.5% (178) of respondents somewhat willing 'would be to start a collaborative project with someone with autism'. However, 8.0% (32) of respondents were definitely unwilling to 'make friends with a person with autism'. Interestingly, 37.5% (150) of respondents were somewhat willing 'would be to have a person with autism marry into the family'. Finally, 28.7% (115) of respondents definitely unwilling 'would be to marry or date a person with autism'. The results indicate that the suburban community had a moderate stigma level

**Table II: The awareness of autism spectrum disorder (ASD) among the suburban community (n=400)**

Items	Frequency					M	SD
	Strongly dis-agree	Disagree	Neither agree nor disagree	Agree	Strongly agree		
A1. Autism is more frequently diagnosed in males than females.	14 (3.5%)	40 (10.0%)	103 (25.8%)	131 (32.8%)	112 (28.0%)	0.72	1.084
A2. Children with autism do not show attachments, even to parents/caregivers.	19 (4.8%)	62 (15.5%)	69 (17.3%)	138 (34.5%)	112 (28.0%)	-0.65	1.177
A3. People with autism are deliberately uncooperative.	78 (19.5%)	98 (24.5%)	55 (13.8%)	98 (24.5%)	71 (17.8%)	0.03	1.408
A4. Children with autism can grow up to go to college and marry.	12 (3.0%)	21 (5.3%)	58 (14.5%)	183 (45.8%)	126 (31.5%)	0.98	0.970
A5. There is one intervention that works for all people with autism.	21 (5.3%)	39 (9.8%)	111 (27.8%)	118 (29.5%)	111 (27.8%)	-0.65	1.139
A6. Autism can be diagnosed as early as 15 months of age.	15 (3.8%)	25 (6.3%)	98 (24.5%)	106 (26.5%)	156 (39.0%)	0.91	1.103
A7. With the proper treatment, most children diagnosed with autism eventually outgrow the disorder.	15 (3.8%)	38 (9.5%)	90 (22.5%)	171 (42.8%)	86 (21.5%)	-0.69	1.031
A8. People with autism show affection.	18 (4.5%)	66 (16.5%)	65 (16.3%)	170 (42.5%)	81 (20.3%)	0.58	1.119
A9. Most people with autism have low intelligence.	55 (13.8%)	95 (23.8%)	56 (14.0%)	89 (22.3%)	105 (26.3%)	-0.23	1.418
A10. Children with autism grow up to be adults with autism.	19 (4.8%)	36 (9.0%)	124 (31.0%)	116 (29.0%)	105 (26.3%)	0.63	1.107
A11. People with autism tend to be violent.	15 (3.8%)	43 (10.8%)	79 (19.8%)	161 (40.3%)	102 (25.5%)	-0.73	1.072
A12. People with autism are generally disinterested in making friends.	15 (3.8%)	55 (13.8%)	85 (21.3%)	142 (35.5%)	103 (25.8%)	-0.66	1.115
A13. People with autism have empathy.	44 (11.0%)	69 (17.3%)	79 (19.8%)	119 (29.8%)	89 (22.3%)	0.35	1.297
Total awareness score						0.58	3.49

**Table III: The stigma toward ASD**

Items	Frequency				M	SD
	Definitely unwilling	Somewhat unwilling	Somewhat willing	Definitely willing		
S1. How willing would you be to move next door to someone with autism?	23 (5.8%)	67 (16.8%)	204 (51.0%)	106 (26.5%)	2.02	0.815
S2. How willing would you be to spend an evening socializing with someone with autism?	172 (43.0%)	0 (0%)	162 (40.5%)	66 (16.5%)	2.70	1.186
S3. How willing would you be to start a collaborative project with someone with autism?	30 (7.5%)	71 (17.8%)	178 (44.5%)	121 (30.3%)	2.02	0.884
S4. How willing would you be to make friends with a person with autism?	32 (8.0%)	41 (10.3%)	189 (47.3%)	138 (34.5%)	1.92	0.873
S5. How willing would you be to have a person with autism marry into the family?	87 (21.8%)	111 (27.8%)	150 (37.5%)	52 (13.0%)	2.58	0.970
S6. How willing would you be to marry or date a person with autism?	115 (28.7%)	105 (26.3%)	73 (18.3%)	107 (26.8%)	2.57	1.166
Stigma score					13.81	4.64

towards ASD 13.81 (SD=4.64).

**Association Between Awareness and Stigma of ASD**

Spearman's rank correlation coefficient is used to determine a significant association between awareness and stigma level toward ASD. A weak positive correlation between awareness and stigma level was found (r=0.217, p <0.001). That means as awareness of ASD increases, stigma also tends to increase slightly (Table IV).

**Table IV: The Association between Awareness and Stigma toward ASD**

	Stigma	
	r	p-value
Awareness	0.217	<0.001*

\*Spearman correlation

**Association Between Demographic and Stigma Level**

The analysis presented in Table V reveals significant associations between certain socio-demographic factors and the level of stigma toward ASD. Gender was found to be significantly associated with stigma levels, with females exhibiting a higher median stigma score (14.00) compared to males (12.00), as indicated by a Z-statistic of -5.902 and a p-value of <0.001. This suggests that gender influences attitudes toward ASD, potentially resulting in more stigma among females than males.

The educational level also showed a significant association with stigma, as evidenced by the Kruskal-Wallis test result ( $\chi = 11.980, p = 0.007$ ). Respondents with only a secondary school education had the highest median stigma score (14.00), while those with a master's degree had the lowest (11.00). This indicates that higher educational attainment may be linked to reduced stigma toward ASD.

However, age and parental status did not demonstrate statistically significant associations with stigma levels. The p-values for age (p = 0.417) and parental status (p = 0.104) suggest that these factors do not strongly

influence the stigma associated with ASD in this sample.

**DISCUSSION**

**Awareness of ASD**

This study's findings indicate that most respondents have a moderate level of awareness about ASD. However, a survey of non-health sciences students at UiTM Selangor showed a higher level of awareness than observed in this study, suggesting that students, compared to the general community population, are more exposed to formal educational sources (6, 16). This disparity highlights a critical gap, as many respondents in the current study held misconceptions, believing that autistic individuals are not very intelligent and are often violent. These misconceptions are consistent with previous studies where respondents also associated autism with low IQs and a propensity for aggression (17). This phenomenon might stem from the inappropriate behaviour sometimes exhibited by autistic individuals in public settings, leading to reinforced stereotypes (8).

The study further reveals a mixed level of awareness among respondents, with many correctly recognizing that autism is more frequently diagnosed in males than in females, a fact aligned with existing research on the higher prevalence of autism in males (18). Additionally, respondents showed awareness that children with autism can grow up to pursue higher education and marry and that autism can be diagnosed as early as 15 months of age, reflecting a basic understanding of the potential for individuals with autism to lead fulfilling lives (19).

However, significant misconceptions were also evident. Some respondents incorrectly believed that children with autism do not form attachments, and others thought that individuals with autism are deliberately uncooperative. These stereotypes contribute to the stigmatization of autistic individuals and highlight the need for continued public education efforts (19). Additionally, persistent misconceptions regarding treatment and cognitive

abilities—such as the belief in a one-size-fits-all intervention and the idea that individuals with autism could "outgrow" the disorder with proper treatment—underscore the need for targeted educational initiatives to correct these misunderstandings (8).

Despite the moderate level of awareness, most respondents credited autism awareness campaigns with informing and enlightening them about autism. These campaigns play a vital role in encouraging a deeper understanding of the skills and characteristics of autistic individuals, which can help foster a more inclusive society. By promoting equal access to opportunities for autistic individuals, such initiatives can significantly reduce stigma and discrimination (20). Therefore, while the community shows some awareness, sustained and enhanced awareness campaigns are necessary to elevate understanding to a higher level. Such efforts are crucial for creating a more accepting community and reducing misconceptions about individuals with autism.

**Stigma Toward ASD**

The findings of this study suggest that the suburban community was moderately stigmatized towards ASD. Similarly, a previous study found that the student population in Selangor had stigmatizing attitudes towards ASD (21). In an earlier study regarding the comparison of stigma in individuals with special needs, the findings showed the greatest social distancing was among those who had autism followed by intellectual impairment (14). In addition, most participants were unwilling to interact with those who had autism. Interestingly, this study's findings showed that many of the respondents were willing to date or marry someone who has autism. Besides, less than half of the respondents were willing to become friends with autism, while a few respondents would be willing to move in next to an autistic person. In a study, a quarter of the participants showed social

distancing towards persons with autism in close kindred through marriage (14). Approximately half of the respondents stated that they could have co-workers with autism and less than half of the respondents were willing to be next-door neighbours who have autism. The result suggests that awareness or past interactions with autistic may exhibit an unwillingness to socialize with them (6). The refusal to autism could be due to the individuals diagnosed with autism being seen as having disruptive behaviour and a violent nature. Thus, other people might perceive it as threatening, which makes them more socially isolated (22).

Prejudices and misconceptions regarding autism, such as the idea that persons with autism are unable or mentally deficient, result in criticism, discrimination, and social rejection. In addition, the stigma associated with autism can be difficult because of the condition's widespread impairment and outward appearance of a sense of normal, resulting in people mistaking the strange behaviours of autistic people for poor parenting or mental disabilities (23). Misconceptions about disruptive behaviour contribute to the social isolation of autistic people, even while there is a willingness to interact with them in specific situations (24-25). Increased awareness and education are necessary to combat stigma and foster more inclusive attitudes toward individuals with autism.

**Association between awareness and stigma towards ASD**

The weak and positive correlation shown between awareness and stigma towards ASD may indicate that, despite raising their degree of awareness, some respondents may still view ASD individuals with stigma. However, this result differed from the study findings in that the correlation between awareness and stigma levels was weak and negative (6). The negative association indicates a lower stigma towards individuals with ASD

**Table V: The Association between Sociodemographic and Stigma toward ASD**

Sociodemographic		Median (IQR)	Frequency (n)	%	$\chi^2$ (df)	Z-statistics	p-value
						-5.902	<0.001 <sup>a</sup>
Gender	Female	14.00 (6.00)	198	49.5			
	Male	12.00 (4.00)	202	50.5			
Age	18 – 25 years	13.00 (6.00)	155	38.8	2.838 (3)		0.417 <sup>b</sup>
	26 – 44 years	13.00 (7.00)	216	54.0			
	45 – 59 years	12.00 (10.00)	25	6.3			
	60 – 65 years	10.50 (4.00)	4	1.0			
Educational level	Secondary school	14.00 (7.00)	93	23.3	11.980 (3)		0.007 <sup>b</sup>
	Diploma	13.50 (8.00)	104	26.0			
	Degree	13.00 (5.00)	172	43.0			
	Master	11.00 (1.00)	31	7.8			
Parental status	No	14.00 (6.00)	157	39.3		-1.625	0.104 <sup>a</sup>
	Yes	12.00 (6.00)	243	60.8			

<sup>a</sup>Mann-Whitney

<sup>b</sup>Kruskal-Wallis

and that respondents were aware of the condition. Besides, a study indicates a strong relationship between stigma level and awareness (26). It discovered a correlation between a lower stigma attached to ASD and a higher awareness level. The well-being of those with autism may rise because of decreased stigmatizing views and a decline in social isolation. The differences in other studies could suggest the potential value of skilfully planned awareness efforts in fostering acceptance and lessening the stigma associated with people with ASD.

### **Association between demographic and stigma level of ASD**

A significant association was found between gender and stigma level towards ASD. Females showed higher stigmatization than males. This study's finding was different compared to earlier studies that males have a higher stigmatizing attitude than females since females have more emotional concern and empathy (6). Women are more accepting and responsive to the concept of dating or working with people who have autism than males (14). Next, this study showed no significant association between age and stigma. Comparing the research results indicates that stigma and age significantly correlate (27). This could be due to people's views getting deeper and more knowledgeable as they get older and experience more life, which might lessen stigma. In addition, there is a significant association between educational level and stigma. Younger and better-educated people had more positive views towards people with autism (28). Higher educated people could have received more correct information on ASD through formal education (29).

No significant association between parental status and the stigma level of ASD was found in this study. Research indicates that parents of ASD children frequently have fewer positive views, especially when it comes to helping the kids practice social discipline. This implies that having a parent may not be enough to produce more positive views (22). The result is in contrast with some previous studies that have shown that parental experience among those with children with developmental disorders can lead to greater empathy and understanding, thus reducing stigma (30). One might expect that parents who had experience raising a child with ASD would have a lower level of stigma due to more understanding of this disorder. However, no significant association in this study could indicate stigma toward ASD is influenced by other factors, such as education or personal belief, rather than parental status alone (26,31). This also suggests that stigma is pervasive across different groups, regardless of whether individuals are parents, thus indicating that interventions to reduce stigma should be broad-based and not limited to specific demographics.

### **Implication and Strength**

The study's findings highlight the importance of ongoing

public education efforts to improve awareness and correct misconceptions about ASD. The presence of significant misconceptions, such as beliefs about low intelligence and violent tendencies in individuals with autism, underscores the need for targeted awareness campaigns. These campaigns should focus not only on increasing general knowledge but also on addressing specific stereotypes that contribute to stigma. Enhancing public understanding could lead to greater social inclusion and support for individuals with ASD, ultimately fostering a more inclusive society.

A key strength of this study is its focus on a suburban community, providing insights into awareness levels outside of urban or student populations, which are often the focus of research. The study also utilized a large sample size, allowing for robust statistical analysis and providing a comprehensive overview of community awareness and misconceptions regarding ASD.

However, the study has several limitations. The reliance on self-reported data may introduce bias, as respondents might have overestimated their awareness or provided socially desirable responses. Additionally, the cross-sectional design limits the ability to infer causality between awareness levels and stigma. The study's focus on a single suburban community may also limit the generalizability of the findings to other regions or populations. Future research should aim to address these limitations by employing longitudinal designs and expanding the geographic scope of the study.

### **CONCLUSION**

The conclusion of this study highlights the complexity of public perceptions of ASD within the suburban community. While the findings demonstrate a moderate level of awareness about ASD, they also reveal a significant degree of stigma. The weak positive correlation between awareness and stigma suggests that increased knowledge about ASD does not necessarily lead to more accepting attitudes, indicating that awareness alone is insufficient to combat stigma. The study also found that gender and educational levels are significantly associated with stigma, suggesting that these sociodemographic factors play a critical role in shaping public perceptions of ASD. These results highlight the importance of targeted educational initiatives that increase awareness and address the underlying misconceptions contributing to stigma. To foster a more inclusive society, it is essential to design interventions that go beyond awareness campaigns to challenge and change negative attitudes toward individuals with ASD actively. Future research should continue to explore the dynamics between awareness, stigma, and sociodemographic factors to develop more effective strategies for reducing stigma and promoting social inclusion for individuals with ASD.

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