

Autism spectrum disorder: An empirical study on teachers' attitudes in Malaysia

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Abstract: The purpose of this study was to examine Malaysian teachers' attitudes toward autism spectrum disorder (ASD) using the Autism Attitude Scale for Teachers. The scale was administered online and SPSS 26.0 was used to analyse the data. Mann-Whitney U, a non-parametric test, was conducted on ASD attitudes to determine if there were any significant gender differences, while Kurskal-Wallis H, another non-parametric test, was conducted to determine if there were any significant age and experiential differences in ASD attitudes. Findings showed no significant gender, age and experiential differences in ASD attitudes. Further, descriptive statistics revealed that teachers obtained low scores on ASD attitudes, indicating that they tended to hold less favourable perceptions toward ASD. Recommendations on how to improve teachers' ASD attitudes were provided in light of the findings.

Keywords: attitudes, autism spectrum disorder, Malaysian teachers.

I. INTRODUCTION

According to the American National Institute of Mental Health, autism spectrum disorder (ASD) is a neurological-developmental disorder that affects individuals' interactions with others, communicational ability, learning and behaviour. Known as a spectrum disorder, it varies widely in terms of types and symptom severity. Categorized as a developmental disorder, its symptoms usually emerge in the first two years of life. The Diagnostic and Statistical Manual of Mental Disorders (DSM-5) stated that individuals with ASD (1) experience problems in communicating and interacting with others, (b) demonstrate limited interests and repetitive behaviours and (c) exhibit symptoms that affect their academic, work, and other aspects of life (NIMH, 2022).

The Centers for Disease Control and Prevention revealed that the prevalence of ASD in the United States is one in 68 children, whereby one in 42 boys and one in 189 girls has been identified as having ASD (CDC, 2018). At present, accurate data on ASD in Malaysia is still lacking. In 2014, approximately 47,000 Malaysians were diagnosed with ASD, whose ages ranged from six months to late 20s. This number is expected to rise by three percent each year. Another study showed that Malaysian children with ASD mostly aged between 18 to 26 months. Incidence rate of ASD was 1.6 in 1000 children, or nearly one in 625 individuals. Currently, there are 300,000 individuals with ASD in Malaysia (National Autism Society of Malaysia, 2022).

Neik et al. (2014) reviewed several studies on the prevalence, diagnosis, treatment and research on ASD in Singapore and Malaysia. Findings revealed that, in Malaysia, the level of awareness on ASD is still quite low. Further, due to limited public awareness, children and adults with this developmental disorder rarely receive their due respect, but are regarded as people with intellectual problems. Greater efforts are required to raise knowledge on ASD and to improve the lives of families coping with ASD; collaboration between stakeholders in Malaysia and Singapore can be expanded in such efforts. Support for children with ASD should extend beyond childhood so that they become more productive members of society.

II. REVIEW OF LITERATURE

A review of literature showed that research on teachers' attitudes toward children with ASD is lacking in Malaysia. Previous research mostly examined attitudes of parents, university students and nurses toward the disorder. The following paragraphs describe some ASD studies in Malaysia, but only a few of them examined the attitudes of teachers.

Dollah, Yahaya and Chong (2011) examined the attitudes of 375 polytechnic staff toward individuals with ASD in Malaysia. Findings revealed that, although 61.8 percent of polytechnic staff reported familiarity with ASD; many of them could not describe the specific characteristics of ASD, while some even thought that it was similar to hyperactivity. About 21.5 percent admitted that they had never heard of ASD. Findings also indicated that their main source of ASD information were friends or acquaintances, followed by popular media. Few relied on training/workshops. It was recommended that popular media be used to disseminate information to educate people about ASD. Television can convey accurate ASD information in appropriate ways to gain greater attention toward the disorder and its early stages, while design and development of multimedia can focus on enhancing ASD awareness among Malaysians.

Recently, the Malaysian Health Ministry stated that only 99 children were diagnosed with ASD in 2010 and another 562 children in 2020. However, in 2021, 589 children aged below 18 were diagnosed, indicating that the number of ASD cases in Malaysia has risen steadily over the past two decades. Prevalence of ASD in Malaysia is between one and two per 1,000 among children aged 18 months to three years, with male children four times more likely to have ASD than female children. From 2010 until 2021, about 19 per cent of children aged 18 and below were diagnosed with ASD compared to other types of learning disabilities. The increasing rates of ASD can be attributed to a growing knowledge of the disorder and modifications in its diagnostic criteria (CodeBlue, 2022).

According to Hannah Yeoh, a prominent Malaysian politician, more child identification and testing centres should be established to ensure prompt diagnosis of ASD. The Malaysian Health Ministry can facilitate access to the current centres and offer better ASD facilities, especially in remote areas. Moreover, it is recommended that it increases the present capacity for identification and testing because the current waiting list is ever-growing. Yeoh added that inaccessibility to such facilities has made it difficult to accurately diagnose developmental challenges among children, stressing that prompt intervention will offer them the urgently needed support to help reach their full potential (Radhi, 2018).

Further, Yeoh stressed that ASD has become a widespread condition, with an estimated 300,000 Malaysians on the spectrum. However, only 20,000 are currently registered with the Ministry of Health and issued with a special card that would encourage them to obtain more specific services. The biggest hurdle is that many Malaysians possess little awareness of the disorder, thinking that children with ASD are simply slow, which they perceive as normal for some children. More effective screening should be implemented to help children with ASD at the early stage since ASD symptoms can even manifest among 18-month-old children (Radhi, 2018).

Nazri and Koran (2019) conducted structural observations and interviews with the parents of two sons identified to having varying degrees of ASD. The parents reported that they were left to deal with the challenges associated with transition as soon as the children with ASD reached a certain age because scaffolding of educational institutions and other establishments were withdrawn. Although early interventions and special education are available in Malaysia for students with ASD, the education system does not prepare young adults with ASD for life beyond the system. Stakeholders, especially policy makers, can revisit the targets and goals stipulated in special education programs, besides addressing the challenges faced by young adults with ASD, one of which revolves around independent living.

Thomas (2019) reiterated that it is hard to ascertain the exact number of individuals with ASD in the rural areas of Malaysia, mainly due to difficulties in collecting data and a lack of awareness among rural communities. There are probably more than 300,000 individuals with ASD in Malaysia. Nevertheless, the numbers are increasing because of better testing and identification, rather than a greater prevalence of ASD. The number of individuals living with ASD could be much higher, especially in rural areas where it is underreported or left undiagnosed. In Malaysia, awareness about ASD has risen over the years and the mass media plays a key role in disseminating information and eliminating negative stereotypes. Various special education initiatives have been implemented, while several organisations have been formed to generate awareness and support for ASD programs.

Ramachandram (2019) examined the clinical and demographic characteristics of 331 children with ASD at a child development clinic. Findings revealed that the male to female ratio was 4.7:1, while the mean age at first clinical visit was 5.5 years. Chinese patients formed the largest majority at 45.6 percent, followed by Malay patients at 40.5 percent and Indian patients at 13.9 percent. Findings implied that, with the increasing number of children being diagnosed with ASD each year, there is an urgent demand for qualified clinicians, early intervention centres and special schools. Early screening and tailoring of individualized educational programs also play a role in augmenting ASD outcomes.

Eow et al. (2020) examined the relationship between ASD severity and sociodemographic factors, parental factors and lifestyle factors among 224 children. Their mothers completed a questionnaire on sociodemographic characteristics, ASD severity, parenting, feeding practices, stress, as well as the children's sleeping and eating habits. Findings revealed that 78.1 percent of the children with ASD had severe levels of ASD. Lastly, fathers' employment statuses and the children's weight significantly predicted autism severity.

de Vries, Cader and Colleer (2020) examined the attitudes of 166 British students and 195 Malaysia students at a large university in Britain. Findings indicated that British students tended to link ASD with food, while Malaysian students to upbringing. Further, the former showed greater knowledge, contact and acceptance of ASD, while the latter showed less willingness to socialize with people with ASD. Although awareness and exposure tended to increase acceptance, acceptance itself was not a mediator among nations, perceptions, awareness and exposure. Nevertheless, willingness to socialize, awareness and exposure concerning ASD tended to increase its acceptance in different cultures.

Thomas et al. (2020) examined 115 Malaysian nursing students' awareness and perceptions of children with ASD. Findings revealed that half of the nursing students perceived autism as a socioemotional and neuro-developmental disorder, characterised by behavioural impairment. About half of them agreed that children with ASD needed friends and could live independently. A majority also agreed that social media and healthcare providers had the key role to deliver accurate knowledge about ASD and to increase ASD awareness in the community, respectively.

Khairuddin, Salleh and Amin (2020) examined the experiences of six lecturers for supporting students with ASD at a Malaysian tertiary education institute. Findings revealed that lecturers were limited in terms of supporting students with ASD due to a lack of knowledge, which in turn, made it difficult for them to adequately meet the intellectual and social needs of students with ASD. Moreover, increasing enrolment of students with ASD had not been accompanied by sufficient staff training to boost the academic performance of students with ASD. To promote classroom equity, the staff formed a buddy system to encourage collaboration between regular students and students with ASD.

Apok and Salleh (2020) conducted a quantitative study on 44 Malaysian parents of children with ASD to gain insight into the features of ASD, past and present service utilisation, parental stigma and the support networks received by the families. Findings revealed that children first showed ASD symptoms at the average age of 28.1 months, while the average age of diagnosis was 46 months. Additionally, children with ASD were not responsive when they were addressed to. Besides lacking eye contact and verbal skills, they also tended to have speech impairments and interpersonal problems. Most diagnoses were done by psychiatrists and paediatricians. Occupational therapy was found to be the most common practice, followed by verbal and language training, sensory integration training and behavioural training. Half of the parents revealed that they sometimes experienced frustration in terms of procuring services for their children due to a lack of basic family support networks.

Rashid and Mohamad (2020) examined four teachers' perceptions of the use of digital storytelling among Malaysian children with ASD. Besides interviews, digital storytelling classes were videotaped to capture teacher-student interactions. Findings revealed that teachers demonstrated positive attitudes toward the development of communicational and social skills through digital storytelling. Since digital storytelling tended to encourage children with ASD to become more attentive, it could be used as an alternative method to enhance their academic performance.

Low et al. (2021) who examined the ASD knowledge of 213 Malaysians found that they tended to have limited knowledge on the social communication problems and language deficits related to ASD. Findings showed that the majority of Malaysians perceived ASD as a type of learning disability; they also lacked knowledge on the diagnostic

features and remedial needs of ASD. Therefore, content-specific ASD awareness programs through the right channels are urgently needed to optimise efficacy in knowledge transfer as well as to minimise redundancy in existing ASD awareness campaigns. Increasing Malaysians' knowledge on ASD would ensure that children with ASD are appropriately identified at an early age to maximise remedial outcomes.

Finally, Amini et al. (2022) assessed the degree of awareness and perception of medical genetic services among 111 Malaysian parents of children with ASD. Findings showed that a majority of children with ASD were male who were screened at aged three to four. Respectively, a majority of parents were aged 26 to 30, and 31 to 35 years when their children were born. About 24.3 percent of the children had met a trained genetic consultant, while another 19.8 percent had undergone a genetic test. Despite demographic factors, parents tended to lack awareness on genetic services for ASD due to the lack of referral from the primary physician upon diagnosis. Healthcare providers can increase their knowledge on genetic testing for ASD, while the public and private sectors can regularly hold educational and awareness campaigns to improve the identification and management of ASD.

A. Significance of the Study

Although ASD is gaining increasing attention through non-governmental organisations (NGOs), parents and the media, it is still unclear exactly how much Malaysian teachers know about the disorder. Many people seem to lack accurate knowledge or real-life exposure to individuals with ASD. Increased knowledge and awareness can help foster positive attitudes toward people with ASD. Findings of this study can be used to increase knowledge and awareness among Malaysian teachers concerning the real nature of ASD, which in turn, reduces ASD-related discrimination and stigmatisation. Further, this study can help foster a greater sense of responsibility and accountability among teachers toward people living with ASD. The more Malaysian teachers know about ASD, the higher will be their level of acceptance of individuals with ASD, resulting in greater support for inclusivity. More empirical research on ASD in Malaysia is crucial to provide a framework for proposing and providing innovative intervention and educational opportunities for children and youths with ASD. The main aim of this study is to obtain information on teachers' attitudes toward children with autism in Malaysia. This study is guided by two research questions:

1. Were there any significant age, gender and experiential differences in teachers' attitudes toward ASD?
2. What were the percentages of responses (strongly agree, agree, neutral, disagree, strongly disagree) on the 14 items on The Autism Attitude Scale for Teachers (as seen in the following instrument under IIIA)?

III. METHODOLOGY

A. Instrument

The Autism Attitude Scale for Teachers (Olley, et al., 1981) was administered online to collect data. Based on a five-point Likert scale, it consists of two seven-item alternate forms that correlate .84 with each other. Items were selected from a pool of over 40 items intended to measure attitudes toward the inclusion of children with ASD. Items were evaluated by five psychoeducational therapists and two clinical directors with a mean of 5.3 years of working experience dealing directly with children with ASD. The revised list of 32 items was subsequently administered to 95 regular teachers. Finally, the 14-item subset derived from the revised list was selected because of its high correlation (.90, .95 and .97 for Form A, Form B as well as Forms A/B, respectively; $p < 0.0001$ in all cases). The total score is 70 (high=56; average=49; low=less than 49).

B. Subjects

The sample consisted of 69 teachers from five secondary schools, three private colleges and two universities in Malaysia. The schools were randomly selected from 15 schools using a table of random numbers. The private colleges were randomly selected from 10 colleges, while the two universities were randomly selected from three. Drawn from communities that were culturally, linguistically and ethnically diverse, the middle-class sample was subsequently obtained with the cooperation of principals, coordinators and deans who agreed to share the survey link with their teaching staff. Table I provides the demographic information of the sample.

TABLE I: Demographic information of the sample

Job title	Frequency	Percent	Gender	Frequency	Percent
Regular	48	69.6	Male	23	33.3
Inclusive	5	7.2	Female	46	66.7
Special educ	16	23.2			
Total	69	100.0	Total	69	100.0
Age	Frequency	Percent	Job/years	Frequency	Percent
25-35	13	18.8	1 - 5	8	11.6
36-45	25	36.2	6 - 10	11	15.9
46-55	20	29.0	11 - 15	18	26.1
56-60	11	15.9	16 +	32	46.3
Total	69	100.0	Total	69	100.0
Qualifications	Frequency	Percent			
Diploma	3	4.3			
Bachelors	42	60.9			
Masters	17	24.6			
PhD	7	10.1			
Total	69	100.0			

All teachers completed the scale online (via Google Forms) at their own convenience. Anonymity was ascertained since the only demographic information required was age, gender, qualifications, job title and job experience. Teachers had to respond to both positively- and negatively-worded items to ensure that they were seriously attending to the items, while preventing bots from infiltrating the data. A computer function “reminded” teachers to return to any unanswered questions; hence, only fully completed scales were accepted and automatically recorded on a spreadsheet.

C. Data Analysis

Data were analysed by using SPSS 26.0. Mann-Whitney U, a non-parametric test, was conducted on in ASD attitudes to determine if there were any significant gender differences, while Kurskal-Wallis H, another non-parametric test, was conducted to determine if there were any significant age and experiential differences in ASD attitudes. Then percentages of agreement for the 14 items were calculated to determine teachers’ general perceptions of ASD.

IV. FINDINGS

Descriptive statistics showed that the mean score of ASD attitudes was 47.3, which was lower than average (see Table II below).

TABLE II : Descriptive statistics of ASD attitudes according to independent variables

Gender	Frequency	ASD mean
Male	23	44.83
Female	46	45.02
Age	Frequency	ASD mean
25-35	13	43.69
36-45	25	44.68
46-55	20	44.85
56-60	11	47.27
Job title	Frequency	ASD mean
Inclusive teacher (regular + special)	5	36.2
Regular teacher	48	47.44
Special education	16	40.25
Job experience	Frequency	ASD mean
1-5 years	8	46.13
6-10 years	11	42.73
11-15 years	18	44.33
16-20 years	9	45.89
More than 20	23	45.74

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Qualifications	Frequency	ASD mean
Diploma	3	38.33
Bachelors	42	45.02
Masters	17	47.18
PhD	7	42.00

Mean scores: High = 56-70; average = 55-49; low = less than 49

Non-parametric tests revealed no significant age, gender and experiential differences in teachers' attitudes toward ASD (see Table III).

TABLE III: Non-parametric test results on teachers' attitudes toward ASD

Age	Sample size	Mean rank	Test statistic	Degree of freedom	p-value
25-35	13	39.58	1.023	3	0.796
36-45	25	35.06			
46-55	20	33.60			
56-60	11	32.00			
Gender	Sample size	Mean rank	Test statistic	Degree of freedom	p-value
Male	23	34.28	0.210	1	0.833
Female	46	35.36			
Job experience	Sample size	Mean rank	Test statistic	Degree of freedom	p-value
1-5 years	8	33.38	2.433	4	0.657
6-10 years	11	42.18			
11-15 years	18	36.94			
16-20 years	9	31.50			
More than 20 years	23	31.98			

Percentages of agreement for the 14 items on The Autism Attitude Scale for Teachers were calculated to determine teachers' general perceptions of ASD. Findings showed that all teachers scored less than 49 (out of 70) on attitudes toward ASD, indicating that they had less positive perceptions of individuals with ASD. To get a general impression on the percentages of positive responses for each item, "strongly agree" and "agree" responses were combined. For example, the total percentage of "strongly agree" and "agree" responses for Item 1 was 46.37, indicating that 46 percent of teachers agreed that only special education teachers could effectively teach students with ASD (see Table 4).

TABLE IV: Percentages of responses on the The Autism Attitude Scale for Teachers

Item (No)	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Only special education teachers can help children with autism (1)	7.25	34.78	11.59	30.43	15.94
Children with autism are disruptive and negatively influence other children (2)	11.59	49.28	18.84	20.29	0.00
Having students with autism in school enhances the learning experiences of regular students (3)	2.9	7.25	24.64	55.07	10.14
Regular children and children with autism should be taught in separate schools (4)	14.49	18.84	20.29	31.88	14.49
Children with autism can learn from a good teacher (5)	0	1.45	11.59	44.93	42.03

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Regular schools are too advanced for children with autism (6)	8.7	30.43	21.74	24.64	14.49
I would not want my class to put up with children with autism (7)	26.09	23.19	28.99	11.59	10.14
Teachers with no special education training should not be expected to deal with children with autism (8)	4.35	21.74	13.04	44.93	15.94
Children with autism are too impaired/slow to benefit from regular school activities (9)	13.04	36.23	21.74	23.19	5.8
Inclusive schools (regular + special education) enhance the learning of children with autism (10)	1.45	2.9	20.29	53.62	21.74
If I had a choice, I would teach in a school without any children with autism (11)	23.19	30.43	20.29	18.84	7.25
A good teacher can do a lot to help children with autism (12)	0	1.45	10.14	46.38	42.03
Children with autism cannot socialise well enough to profit from contact with regular children (13)	8.7	44.93	20.29	21.74	4.35
It is unfair to ask teachers to accept children with autism into their school (14)	5.8	27.54	27.54	33.33	5.8

V. CONCLUSIONS, DISCUSSION AND RECOMMENDATIONS
A. Age, gender and experiential differences

Results of this study showed that significant age, gender and experiential differences did not exist in teachers' attitudes toward ASD. This finding was supported by previous research. Ryan (2013) who examined disability the literacy and attitudes toward ASD of different occupational groups found no significant attitudinal differences based on the age. Similarly, Geelhand et al. (2019) who examined the role of gender in the perception of autism symptom severity and future behavioural development, found no significant gender differences in perceived symptom severity and associated degree of concern for five-year-old boys and girls. Kuzminski et al. (2019) who examined neurotypical knowledge about, and attitudes toward ASD, found neither age nor educational level had any significant impact on attitudes toward ASD. Shand, Close and Shah (2020) who explored the relative contributions of participant age, gender and ASD knowledge to attitudes toward ASD found that age and gender did not have a significant influence on ASD attitudes. Jones et al. (2021) who investigated community knowledge and ASD-related experiences found no significant differences by age, gender and education level among neurotypicals. Finally, Yee et al. (2021) who studied medical students' perceptions of ASD found no significant association between gender and perceptions of ASD.

Results of this study showed non-significant experiential differences in teachers' attitudes toward ASD. This finding was supported by recent studies, indicating that teaching experience did not significantly influence ASD attitudes. Segall and Campbell (2014) who looked at factors influencing the educational placement of students with ASD found that years of teaching experience, special education training and/or inclusion had no significant influence on attitudes toward ASD. Garrad et al. (2019) who examined teachers' attitudes in relation to ASD specialist training courses and length of specific ASD teaching experience found that only 5.3 percent of the variability of teachers' attitudes toward ASD was attributed to the number of specialist ASD training courses and length of ASD-specific teaching experience. Similarly, Leonard and Smyth (2020) who carried out research on teachers' attitudes toward the inclusion of children with ASD in mainstream education found that teachers' attitudes were not significantly related to length of teaching experience or type of special education training received.

B. Percentages

Overall, teachers might feel that they lacked the self-efficacy, confidence and stamina in managing the challenging behaviour of students with ASD. A low 29 percent of teachers agreed that children with ASD tended to be disruptive

and would negatively influence other children. In contrast, the majority exhibited positive attitudes toward students with ASD, reflecting their willingness to modify their teaching approaches and to develop innovative strategies to accommodate students with ASD.

About 65 percent of teachers agreed that having students with ASD in school would enhance the learning experiences of regular students, indicating that many teachers believed that regular students could form favourable interpersonal relationships and develop caring friendships with students with ASD, leading to mutual acceptance and understanding.

On the other hand, 46 percent of teachers agreed that regular children and children with ASD should be taught in separate schools, implying that they rejected the idea of inclusive education; they might believe that students with ASD should be educated in a different learning environment geared to providing age-appropriate learning activities by specialist teachers. Nevertheless, 87 percent of teachers agreed that children with ASD could learn from a good teacher, implying that a majority of them perceived that students with ASD could benefit from good teaching practices.

In contrast, 49 percent of teachers indicated that regular schools were too advanced for children with ASD, implying that they believed that students with ASD should attend special schools that could provide individualised educational planning for students with special needs. These teachers might be concerned about equity in the classroom since they might be afraid that they had to devote substantially more time and attention to students with ASD, thus neglecting the regular students.

A low 22 percent of teachers indicated that they would not want their class to put up with children with ASD, implying that a minority of the teachers might be concerned that students with ASD would disrupt the learning of other students and interrupt the flow of the lessons. Some might feel that the presence of students with ASD could prevent them from trying certain activities in the classroom for fear of upsetting their sensitivities.

About 61 percent of teachers indicated that those with no special education training should not be expected to deal with children with ASD, implying that they perceived special education certification as an important requirement to adequately meet the academic, social and emotional needs of students with ASD. Only 29 percent of teachers indicated that children with ASD were too impaired/slow to benefit from regular school activities, implying that they might be influenced by stereotypical views of students with ASD, thus assuming that they would lack the psychosocial and intellectual capacity to match their regular peers despite receiving extra attention and help.

About 75 percent of teachers agreed that inclusive schools (regular and special education) would enhance the learning of children with ASD, indicating that they perceived inclusive education as a venue that would allow students with ASD to interact with their regular peers on a daily basis. Only 11 percent of teachers indicated that they would rather teach in a school without any children with ASD, reflecting that they lacked the confidence to work with students with special needs owing to fear of the unknown. A majority of 88 percent of teachers agreed that a good teacher could do a lot to help children with ASD; they believed that a good teacher would possess the motivation, pedagogical knowledge, innovative approaches and affective skills to adequately deal with different categories students regardless of ability levels and socioeconomic backgrounds.

A minority of 26 percent of teachers indicated that children with ASD could not socialise well enough to profit from contact with regular children, implying that some teachers tended to underestimate that capacity of students with ASD to adequately perform at a regular school due to preconceived notions, misinformation, or prejudicial perceptions. Finally, about 39 percent of teachers felt that it was unfair to ask teachers to accept children with ASD into their school, implying that they did not support inclusivity; they might feel that it would greatly increase their teaching load, paperwork and extracurricular responsibilities. They might also perceive students with ASD to be more suited to special education placements, assuming that they would face difficulty in keeping up with the curricular and academic demands of a regular classroom.

C. Conclusion and Recommendations

Findings of this study indicated that teachers in Malaysia generally lack positive attitudes toward ASD because students with ASD often require flexible and creative instruction. Many regular teachers feel apprehensive of having students with ASD in their classroom due to a lack of specific ASD training (Busby et al., 2012; Russell, Scriney & Smyth, 2022).

To enhance teachers' attitudes toward students with ASD, professional development activities and ongoing teacher support initiatives can include a teacher self-efficacy component since self-efficacy enables teachers to develop greater confidence in their capabilities to achieve positive student outcomes (Ruble, Usher & McGrew, 2011).

To meet the multifaceted needs of students with ASD, teachers need to develop four sources of self-efficacy, including mastery experience, vicarious experience, social persuasions and physiological and affective states. First, mastery experience allows teachers to refer to the interpretations they make of their past performances; teachers who have been successful in boosting students' performance tend to make positive interpretations of their effort, resulting in high self-efficacy. Second, teachers can increase their self-efficacy through vicarious experience by observing the successes and mistakes of supportive administrators and colleagues; they can also refer to their peers' performances to evaluate their relative capabilities. Third, teachers can improve their self-efficacy by facing social persuasions from others; hence, evaluative feedback from students, colleagues, administrators and parents tend to increase their self-efficacy. Finally, teachers can enhance their self-efficacy by being conscious of their own physiological and emotional states. Positive somatic and affective responses regarding their performance can enthuse and motivate them to approach students with high self-efficacy (Bandura, 1982; Ruble, Usher & McGrew, 2011).

In addition, resources and funding often affect teachers' attitudes toward ASD; many teachers assert that they do not have the necessary resources to include students with ASD in their classroom (Avramidis & Norwich, 2002; Goldan & Schwab, 2020; Russell, Scriney & Smyth, 2022). Hence, the Malaysian government can increase funding in the field of special education to meet increasing personnel and resource needs. Scholarships can be given to secondary school graduates who are qualified to pursue basic training in special education. On the other hand, regular teachers can receive in-service training that will equip them with the knowledge and skills to educate students with ASD.

Moreover, Annemaree, Forlin and Jobling (2003) described a four-module intervention course that can be implemented to enhance teachers' attitudes toward ASD. Module 1 covers the ideological basis and policy of current special educational provision, the changing relationship between regular and special education, major contemporary trends and issues in special education and models of special educational provision. Module 2 focuses on terminology as an indicator of intentions, attitudes and clarity, labeling, stigmatisation, and categorization, social justice and equity. It also includes the learning and behavioral characteristics of students with different special needs. Module 3 covers issues related to inclusive practice, and finally, Module 4 provides a broad overview of classroom management techniques.

Gomez-Marí, Sanz-Cervera and Tárraga-Mínguez (2022) reiterated that teachers' attitudes toward ASD can be modified through global interventions in relation to societal attitudes, values and beliefs in the educational community. Contact and experience interventions can improve teachers' attitudes toward ASD. Ivey and Reinke (2002) found that participation in outdoor education programs could help familiarise teachers with the concept of inclusion and possible conflicts between regular classroom teachers and special education teachers. Additionally, Swain, Nordness and Leader-Janssen (2012) found that pre-service teachers exhibited positive beliefs and attitudes about inclusive practices after completing an introductory special education course, paired with a 24-hour practicum. Results suggest that a special education course paired with a field experience working with students with disabilities can significantly influence preservice teachers' attitudes toward inclusion.

Shiraz (2024) quoted Sankalp Mohan, who emphasized that individuals with ASD should not only feel accepted, but empowered to thrive with their unique neurology. By adopting a neurodiversity-affirmative framework, educators and support professionals can transform ASD strengths, including intense focus, detail-oriented thinking and passion for specific interests into powerful assets. Curriculum design can capitalize on the unique neurology of students with ASD by aligning the teaching and learning process with their intrinsic motivation and engagement to enhance their academic performance. Additionally, organizations can create work environments that unlock the sensory sensitivities, meticulousness and intense focus of employees with ASD, who often excel in tasks that require precision, data analysis or adherence to protocols. Moreover, social skills training can be provided to individuals with ASD to help them navigate social situations in a comfortable and authentic manner. Overall, by fostering a growth mindset and providing appropriate support, educators and organizations can empower individuals with ASD to truly flourish and contribute their remarkable talents while leading a meaningful and fulfilling life within a neurotypical world.

Finally, generalizability of this study is limited to 69 teachers from Sabah and Sarawak. Future research on the topic should use larger samples from various parts of Malaysia. Further research is needed to get a more comprehensive view on Malaysian teachers' ASD attitudes using different approaches and instruments.

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