

The Knowledge and Attitude of Autism among Community in Mukim Dengkil, Sepang, Selangor

Mohamed Nur Adli K., Thurgaa R.,
Beulah Devakirubai G., Fatimah Zahidah F., Luqmanul
Hakim Z., Muhammad Ikram H.,
Geetha S., Siti Amira J., Sabariah A.H

Faculty of Medicine, Cyberjaya University College of Medical Sciences (CUCMS), Cyberjaya, Selangor, Malaysia

Abstract- Autism is a complex disorder of brain development characterized by a variable mixture of compared capacity for reciprocal socio-communicative interaction. A study in Malaysia shows that the community has bad perception towards autism. This study aims to assess the knowledge and attitude of community in Dengkil towards autism. A cross sectional study was done by using universal sampling. Respondents that fulfill the inclusion & exclusion criteria were interviewed with validated questionnaires and data were analyze using SPSS. Only 47.4% of the respondents have good knowledge on autism, however 94.9% have positive attitude towards autism. A long-term health intervention program (HIP) should be implemented so that the community could increase the knowledge of autism and spread their understandings to their family and friends.

IndexTerms- Autism, Perspective, Knowledge, Attitude, ASD, Malaysia.

I. INTRODUCTION

The umbrella term 'autism spectrum disorders' (ASD) covers conditions such as autism, childhood disintegrative disorder and Asperger syndrome. It is a complex disorder of brain development characterized by a variable mixture of impaired capacity for reciprocal socio-communicative interaction and a restricted, stereotyped repetitive repertoire of interests and activities [1]. In 2014, Centre for Disease Control and Prevention [2] in United States reports about 1% of the world population has autism spectrum disorder with estimated at 1 in 68 births in the United States and the prevalence shows an increasing trend over the years. There is no local epidemiological study on ASD prevalence in Malaysia, however, a feasibility study done at child health clinics by Ministry of Health Malaysia, shows the ASD in Malaysia was approximately 1.6 in 1000 [3].

Suhaily & Siti Syuhada [4] report only 24.5% knew about autism and this gives bad perception towards autism. This is supported by Isabelle et al. [5] in which 22% of the respondents considered individual with autism as a threat to them. The report also mention that when asked to provide descriptors of autism, 61% respondents reported pejorative

labels (e.g. used the words mad or lunatic), whereas compassionate descriptors, (e.g. sad or sorrowful), were used by 29% respondents.

Isabelle et al. [5] also report that although 100% of the respondents recognized the name of autism, however the value plummeted drastically to 67% when the respondents were asked about the characteristics of autism. A preliminary study conducted in Malaysia shows that a higher number of respondents knew about autism (33.1%) compared to the respondents who don't know (28.1%) and the respondents that were unsure (38.8%) [4].

Cathryn [6], in her study conducted among the community in United States shows that 10.3% of the respondents prefer not to have contact with an autistic child, whereas another study shows 6% of the respondents refused to work with an autistic person, 3% of the respondents would not want their child to be in the same class with an autistic child and 6% would not agree to live with an autistic relative [5].

Regarding knowledge, attitudes and behaviours towards autism among adults, majority (50%) of respondents who have heard of autism do not worry if their neighbour were an autistic individual, 22.6% do worry, 22.6% partially worry and 4.8% do not know [7]. However, statistically there is no significant association between respondents' knowledge status and attitude ($p > 0.05$).

Thus, this study was designed to determine the knowledge and attitude of autism among the community in Mukim Dengkil, Sepang, Selangor. Therefore findings can then be used to improve or strengthening the general knowledge on autism in the community.

II. RESEARCH METHODOLOGY

A cross sectional study was conducted within two weeks in a residential area in Mukim Dengkil, Sepang, Selangor. The area has only Malay community with 59 houses and 140 residents. As the estimated sample size was 95 and due to limited number of houses and residents, universal sampling was done. All Malaysian who are above 18 years old, not mentally retarded, deaf and mute were selected as respondents.

Data was collected through assisted interview using a validated questionnaire, which consists of knowledge (10 items, $\alpha=0.926$) [8] and attitude (5 items, $\alpha=0.904$) [9].

The data analysed for the components of knowledge and attitude, were scored as 1 mark for correct or positive answer and 0 mark for wrong or negative answer, respectively. Based on median, a score of more than 5 is categorized as good knowledge, whereas 5 marks and less means poor knowledge. Similarly a score of 3 and more is considered as positive attitude and less than that means negative attitude. Data was analysed using "Statistical Package for Social Sciences (SPSS) version 20. Fishers' Exact Test analyses the association between knowledge status (independent variable) and attitude status (dependent variable) towards autism.

III. RESEARCH FINDINGS

A total of 99 participants participated in this study, giving an overall response rate of 100%.

Table 1. Awareness status of Autism in Dengkil, Sepang

Awareness status	Frequency	Percentage
Yes	78	78.8
No	21	21.2
Total	99	100.0

Among the respondents, 78.8% were aware of Autism (Table 1).

Table 2. Knowledge status among those who were aware of Autism

Knowledge status	Frequency	Percentage
Good	37	47.4
Poor	41	52.6
Total	78	100.0

However, among the respondents who were aware of autism, majority (52.6%) have poor knowledge on autism.

Table 3. Knowledge items on autism (N=78)

	Items for knowledge	Correct answer n (%)	Wrong answer n (%)
1	Autism is a neurological disorder that affect the functioning of the limbs.	9 (11.5)	69 (88.5)
2	Most children with Autism have an intellectual disability.	49 (62.8)	29 (37.2)
3	Children must exhibit impaired interaction and language communication to be diagnosed with Autism.	66 (84.6)	12 (15.4)
4	Autism is a development disorder.	57 (73.1)	21 (26.9)
5	With proper intervention, most children with Autism disorder will eventually "outgrow" the disorder.	52 (66.7)	26 (33.3)
6	Most autistic children talk a lot	40 (51.3)	38 (48.7)
7	The majority of children with Autism are female.	25(32.1)	53 (67.9)
8	Children with autism do not make any visual communication during conversation with others.	38 (48.7)	40 (51.3)
9	Most children with Autism have a problem with imaginary playing.	35 (44.9)	43 (55.1)
10	We can diagnose Autism disorder depending on physical features.	30 (38.4)	48 (61.6)

Majority (84.6%) of the respondents who were aware of autism correctly answered that children must exhibit impaired interaction and language communication to be diagnosed with autism, autism is a developmental disorder (73.1%), most children with autism has intellectual disability (62.8%) and with proper intervention most children with autism disorder will eventually 'outgrow' the disorder (66.7%).

Only 11.5% correctly answered that autism is a neurological disorder that does not affect the functioning of the limbs, majority of children with autism are female (32.1%) and autism disorder can't be diagnosed depending on physical features alone (38.4%).

Forty nine percent of the respondents knew that children with autism do not make any visual communication during

conversation with others, whereas 44.9% knew that most children with autism have a problem with imaginary playing

However, 48.7% of the respondents thought that most autistic children talk a lot (Table 3).

Among respondents who have negative attitude, 100% of them have poor knowledge on autism. However it was not statistically significant ($p > 0.05$) (Table 7). Therefore there was no association between knowledge and attitude among respondents in Mukim Dengkil, Sepang, Selangor.

Table 4. Attitude status among those who were aware of Autism

Attitude status	Frequency	Percentage
Positive	74	94.9
Negative	4	5.1
Total	78	100

Among the respondents who were aware of autism, majority (94.9%) have positive attitude status towards autism (Table 4).

Table 5. Attitudes items on autism (N=78)

	Items	Positive n (%)	Negative n (%)
1	Care to know about autism.	56 (71.8)	22 (28.2)
2	Think that people with autism are dangerous.	67 (85.9)	11 (14.1)
3	Feel sympathy towards people with autism.	72 (92.3)	6 (7.7)
4	Open to the thought of getting to know someone with autism.	71 (91.0)	7 (9)
5	Willing to work with someone with autism.	49 (62.9)	29 (37.1)

Table 5 showed that majority of the respondents (92.3%) feel sympathy towards people with autism and followed by open to the thought of getting to know someone with autism and care to know about autism, with the percentage of 91% and 71.8%, respectively. Only 14.1% of the respondents think that people with autism are dangerous.

Table 6 showed that the good knowledge status was the highest among female (73%), married (78.4%), government staffs (54.1%) and those who earn more than RM 5000.00 (59.5%). While within the age 30-39 has the highest prevalence (43.3%) of poor knowledge. Respondents with tertiary education also showed high prevalence (92.7%) of poor knowledge on autism in this study.

Female, married, government staffs and those who earn more than RM 5000.00 were also among the respondents who showed positive attitude towards autism (60.8%, 70.3%, 48.6% and 47.3% respectively). While among the respondents with tertiary education, 94% have positive attitude towards autism (Table 6).

Table 6. Knowledge and attitude status towards Autism by socio-demographic data (N= 78)

Sociodemographic data	Knowledge status		Attitude status	
	Good	Poor	Positive	Negative
	n (%)	n (%)	n (%)	n (%)
Gender				
Male	10 (27)	23 (56.1)	29 (39.2)	4 (100)
Female	27 (73)	18 (43.9)	45 (60.8)	0 (0)
Age				
18-19	2 (5.4)	1 (2.4)	3 (4.1)	0 (0)
20-29	6 (16.2)	11 (26.8)	15 (20.3)	2 (50.0)
30-39	16 (43.3)	18 (43.9)	32 (43.2)	2 (50.0)
40-49	11 (29.7)	5 (12.3)	16 (21.6)	0 (0)
50-59	1 (2.7)	3 (7.3)	4 (5.4)	0 (0)
>60	1 (2.7)	3 (7.3)	4 (5.4)	0 (0)
Education				
Primary	1 (2.7)	2 (4.9)	3 (4.1)	0 (0)
Secondary	6 (16.2)	1 (2.4)	7 (9.5)	0 (0)
Tertiary	30 (81.1)	38 (92.7)	64 (86.4)	4 (100)
Marital status				
Never married	8 (21.6)	14 (34.1)	20 (27)	2 (50.0)
Divorced/widow	0 (0)	2 (4.9)	2 (2.7)	0 (0)
Married	29 (78.4)	25 (61)	52 (70.3)	2 (50.0)
Occupation				
Government	20 (54.1)	18 (43.9)	36 (48.6)	2 (50.0)
Pensioner	2 (5.4)	4 (9.8)	6 (8.1)	0 (0)
Student	2 (5.4)	6 (14.6)	6 (8.1)	2 (50.0)
Private	9 (24.3)	5 (12.2)	14 (18.9)	0 (0)
Housewife	1 (2.7)	1 (2.4)	2 (2.8)	0 (0)
Self-employed	3 (8.1)	7 (17.1)	10 (13.5)	0 (0)
Income				
<RM 1000	6 (16.2)	10 (24.4)	14 (18.9)	2 (50)
RM 1000-4999	9 (24.3)	18 (43.9)	25 (33.8)	2 (50)
>RM 5000	22 (59.5)	13 (31.7)	35 (47.3)	0(0)
Total	37 (100)	41 (100)	74 (100)	4 (100)

Table 7. Association between knowledge and attitude status towards Autism

Knowledge status	Attitude status		P value
	Positive n (%)	Negative n (%)	
Good	37 (50.0)	0 (0)	0.117
Poor	37 (50.0)	4 (100)	
Total	74 (100)	4 (100)	

IV. DISCUSSIONS

Dourish define awareness as “an understanding of the activities of others, which provides a context for your own activity” [10]. The awareness might be influenced mainly by sources of information such as health professionals, personal experiences, electronic media or literatures, which for any given source of information, there was often a big difference in awareness status [11]. As example, health professionals were source of information for many people ranging from 0% to 51% [12], whereas literature, including books, magazines, pamphlets and newspapers, provided information for between 3% and 82% of participants [13]. This reflects the difference between our finding and others, where the awareness of respondents in Mukim Dengkil, Sepang, Selangor on autism were lower than a study conducted in France [5] which is 100% but higher than a study done in Malaysia [4] (76.7%).

However, studies done in France [5] and China [14], show only 33.1% and 57.8% of the respondents have good knowledge on autism, respectively. These are consistent with our finding where majority (52.6%) of the respondents who were aware on autism, have poor knowledge. The awareness does not accompanied by knowledge about the characteristics of particular disorders as it was found that only 25.2% of respondents are able to recognize children with autism and only 33.1% know the characteristics of autistic children despite of 96% saying that they are aware of the term autism [5]. Therefore, awareness does not necessarily correspond to entirely accurate knowledge [15, 13]. Again it probably due to the sources of information as most of the awareness on autism came from television (28.5%), newspaper (16.9%) and conference (2.5%) [4]. Thus, it is suggested that the lack of awareness among people could be solved by using ICT or multimedia learning [16].

Low-income and rural households were much less likely to be connected than their more affluent and urban counterparts. In aggregate, seven out of ten households and about two out of three persons ages 16 and older used broadband at home by 2011. However, they use computer skills towards submitting resumes and filling out employment applications through online sources [17]. This might explained the lower knowledge status on autism among respondents with tertiary education and at the age 30-39 in our study.

A study done in Ireland reports that majority (69%) of female respondents have had contact with autistic children and therefore have more tendencies to know more about autism [18]. This is consistent with our finding and Suhaily & Siti Syuhada [5], where majority of female have good knowledge on autism.

This is very much important as absence of knowledge means that women cannot make or are not in a position to make informed and correct choices [19].

Other than women, our study also showed that married couple have good knowledge on autism, as parents are often the first to notice difficulties as they encounter other children with more advanced speech-language skills and thus often wonder if their child is behind [20]. Nazish et al. [21] and our study showed that autism is a communication disorder (46.7%) and could be diagnosed through impaired interaction and language (84.6%), respectively. Parental concerns about speech and language are associated with developmental disabilities [22], as among children enrolled in early intervention programs, 46% have communication impairments while 26% have developmental delays in multiple areas [23]. These were also consistent with our study, which 73.1% and 62.8% of respondents mentioned that autism is a development disorder and most of them have an intellectual disability, respectively.

Speech-language deficits are the most common of childhood disabilities and affect about 1 in 12 children or 5% to 8% of preschool children [24]. The consequences of untreated speech-language problems are significant and lead to behavioral challenges, mental health problems, reading difficulties [25]. Family members also have reported that their children avoid activities in their communities due to perceived hostility and therefore choose activities in their own home, the homes of friends, or day centers organized by friends [26]. This might be due to children who experienced loss of words also lost some social skills [27].

As 48.7% of our respondents agreed that children with autism do not make any visual communication during conversation with others, therefore majority knew that autistic children are not females, which was similar with finding from a study done in the Middle East, where 63.4% of the respondents disagree that most autistic children are female [8]. This is might be due to female has higher verbal communication skills and social empathy which may help girls with autism to more easily camouflage their social deficits. In turn, in boys the same social communication issues may readily be more salient and thus reinforce male identification [28].

Abdulhade et al. [8] in their study to assess the knowledge towards autism, report 54.2% of the individuals thought that autistic children had problem with imaginary playing which is slightly higher than our study (44.9%). Actually autistic children do have difficulties in imaginary play and rarely produce pretend play by transforming objects, activating dolls as agents, or inventing imaginary objects, roles or event [29].

Majority of our respondents have positive attitude towards autism, which was similar with a study conducted in Istanbul [7], France [5] and United States [6]. Those with positive attitude towards autism, in this study, also have good knowledge. However, although respondents with tertiary level of education have less knowledge on autism but they also have positive attitude. There is a direct relationship between one's positive training experiences and attitudes, where 86.8% of those

who had updated training had the most positive attitudes [30]. This shows that education level might greatly impacts the attitude status, as it increases level of consciousness towards all diseases, therefore there might be less prejudiced towards autism [7].

There is also a significant differences between men and women with respect to overall positive training attitudes. Women, significantly more often than men, indicated positive attitudes [30], which is similar with our study. However, it was contradictory with a study done in Istanbul [7], which showed that females have a lower prevalence (37%) of good attitude compared to males. This might be due to the difference in educational level of female gender as majority (42.5%) of the female respondents in Istanbul only have secondary level of education whereas in our study the majority (81.1%) of our respondent have tertiary level of education. Therefore the thought of autistic people are dangerous could possibly arise due to lack of personal experience, awareness or knowledge as having adequate training is related to positive attitudes [30].

However, Erica [31] reports there is no relationship between knowledge and attitude status towards experiencing people with autism, which is similar with our study. Collective memory, characterized by shared beliefs and experiences within a community, may also contribute to mistrust [32]. Therefore, positive attitude towards autistic child does not depend on their knowledge level on autism alone but it actually depends on their personal experiences, which shows that a person's encounter with an autistic person effects the way the person perceives autism [31].

Small sample size and with one ethnicity is our limitation to this study as it might not give a good representative of the community. Thus, it is better to have ample sample size with wide diverse of community which could provide more interesting results in the future study.

V. CONCLUSION AND RECOMMENDATION

Majority of the respondents in Mukim Dengkil, Sepang, Selangor have poor knowledge but good attitude towards autism and among those with good knowledge and positive attitude were female, married and government staffs.

Intervention program on awareness towards autism should be carried out for the residents, especially among housewife who most of the time take care of their children and at the same time could spread their good understandings regarding autism to their family and friends. Intervention targets should consider the family's desired outcomes for their child's communication and targets should be developmentally appropriate and meaningful to the child. Special program also should be initiated from government to empower their staff to give health education on autism and be a role model.

Further research is necessary to assess the effect of early intervention on language skills among autistic children as language skills can improve social interaction.

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REFERENCES

- [1] WHO. 2013. Autism spectrum disorders and other developmental disorders (online). *World Health Organization*. http://apps.who.int/iris/bitstream/10665/103312/1/9789241506618_eng.pdf (30 April 2016).
- [2] CDC. 2014. Autism Spectrum Disorder (online). Centres for Disease Control and Prevention. <http://www.cdc.gov/ncbddd/autism/data.html> (30 April 2016).
- [3] CPG. 2014. Draft Management of Autism Spectrum Disorder in Children and Adolescents (online). *Clinical Practice Guidelines*. file:///C:/Users/asus/Downloads/CPG_Mx_of_ASD_in_children_and_adolescents_draft.pdf (30 April 2016).
- [4] Suhaily, M.S., Siti Syuhada, A.R. 2014. A preliminary study: Awareness, Knowledge and Attitude of people towards children with autism. *Proceeding of the Social Sciences Research ICSSR*. e-ISBN 978-967-11768-7-0: pp 322-333.
- [5] Isabelle, D.Z, Jan Scott, F.R., Marion, L. 2012. A first national survey of knowledge, attitudes and behaviours towards schizophrenia, bipolar disorders and autism in France, pg1-2 (online). *BMC Psychiatry*. <http://bmcpopsychiatry.biomedcentral.com/articles/10.1186/1471-244X-12-128> (27 April 2016).
- [6] Cathryn, T.R. 2013. Disability Literacy and Attitudes Towards Autism Spectrum Disorders. *Honors Scholar Theses* (online). http://digitalcommons.uconn.edu/cgi/viewcontent.cgi?article=1328&context=srhonors_theses. (27 April 2016).
- [7] Surmen, A., Hidiroglu, S., Usta, H.H., Awiwi, M., Oguz, A.S., Karavus, M., Karavus, A. 2015. A study exploring knowledge, attitudes and behaviours towards autism among adults applying to a Family Health Center in Istanbul. *North Clin Istanbul*. 2(1):13-18 (online). http://www.journalagent.com/nci/pdfs/NCI-83723-RESEARCH_ARTICLE-SURMEN.pdf (27 April 2016).
- [8] Abdulhade I. Haimour & Yahia F. Obaidat. 2013. School Teachers' Knowledge about Autism in Saudi Arabia. *World Journal of Education*. 3(5): pp 45 - 56 (online). <http://www.sciedupress.com/journal/index.php/wje/article/viewFile/3491/2058> (28 April 2016).
- [9] Carrie Edyvean. 2008. Attitudes Towards Autism: Reducing Discrimination with Contact. *Honors Thesis*. Ball State University. <http://cardinals.scholar.bsu.edu/> (30 April 2016).
- [10] P. Dourish and V. Bellotti. Awareness and coordination in shared workspaces. In Proceedings of the 1992 ACM conference on Computer-supported cooperative work, CSCW '92, pages 107-114, New York, NY, USA, 1992. ACM.
- [11] Stephanie P. Jones, Amanda J. Jenkinson, Michael J. Leathley and Caroline L. Watkins. 2009. Stroke knowledge and awareness: an integrative review of the evidence. *Oxford Journals*. Volume 39, Issue 1 Pp. 11-22.
- [12] Kim JS, Sung S, Yoon RN. 1997. Perspectives of stroke in persons living in Seoul, South Korea. *Stroke*. 28:1165-9.
- [13] Müller-Nordhorn J, Nolte CH, Rossnagel K. 2006. Knowledge about risk factors for stroke: a population-based survey with 28,090 participants. *Stroke*. 946-50.
- [14] Jia Wang, Xue Zhou, Wei Xia, Cai Hong Sun, Li Jie Wu, Jian Li Wang. 2011. Autism awareness and attitudes towards treatment in caregivers of children

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- aged 3-6 years in Harbin, China, *Springer-Verlag*. pg1-2 (online). <http://bmcpediatr.biomedcentral.com/articles/10.1186/1471-2431-9-12>. (27 April 2016).
- [15] Jan M. McCallum, Dhananjaya M. Arekere, B. Lee Green, Ralph V. Katz, and Brian M. Rivers. 2006. Awareness and Knowledge of the U.S. Public Health Service Syphilis Study at Tuskegee: Implications for Biomedical Research *J Health Care Poor Underserved*. Nov; 17(4): 716–733. doi: 10.1353/hpu.2006.0130
- [16] Jasni Dolah, Wan Ahmad Jaafar Wan Yahaya and Toh Seong Chong. 2011. A preliminary investigation: potential of interactive multimedia learning awareness (imla) in enhancing awareness among autism parents in Malaysia. *Proceedings of the 3rd International Conference of Teaching and Learning (ICTL 2011), Inti International University Malaysia*. pg 1-8.
- [17] Araque, J.C. 2013. "Computer Usage and Access in Low-Income Urban Communities." *Computers in Human Behavior*. Vol. 29, 1393-1401. doi: <http://dx.doi.org/10.1016/j.chb.2013.01.032>. Computer usage and access in low-income urban communities
- [18] Karola Dillenburgera, Julie Ann Jordana, Lyn McKerra, Paula Devineb, Mickey Keenan, 2013. Awareness and knowledge of autism and autism interventions: A general population survey. *Research in Autism Spectrum Disorders*. 12(7):1558-1567 (online). <http://www.sciencedirect.com/science/article/pii/S175094671300175X> (2 June 2016).
- [19] DeJong J, Shepard B, Roudi-Fahimi, Ashford L. 2007. Young people's sexual and reproductive health in the Middle East and North Africa. *Washington, DC: Population Reference Bureau*. 2-8.
- [20] Glascoe FP. 1991. Can clinical judgment detect children with speech language problems? *Pediatrics*. 87:317–322. [PubMed].
- [21] Nazish Imran, Mansoor R Chaudry, Muhammad W Azeem, Muhammad R Bhatti, Zaidan I Choudhary and Mohsin A Cheema. 2011. A survey of Autism knowledge and attitudes among the healthcare professionals in Lahore, Pakistan. *BMC Paediatric*. 107(11) (online). <http://bmcpediatr.biomedcentral.com/articles/10.1186/1471-2431-11-107> (2 June 2016)
- [22] Olswang, L., Rodriquez, B., Timler, G. 1998. Recommending intervention for toddlers with specific language learning difficulties: We may not have all the answers, but we know a lot. *Am J Speech-Lang Pathol*. 7:29.
- [23] Markowitz, J., Carlson, E., Frey, W. 2006. Preschoolers' Characteristics, Services, and Results: Wave 1 Overview Report from the Pre- Elementary Education Longitudinal Study (PEELS) Rockville, Md: Westat.
- [24] U.S. Preventive Services Task Force. 2006. Screening for Speech and Language Delay in Preschool Children: Recommendation Statement. *Pediatrics*. 117:497–501. Available at: <http://www.ahrq.gov/clinic/uspstf06/speech/speechchs.htm> Accessed May 9, 2008. [PubMed].
- [25] Boudreau, D.M., Hedberg, N.L. 1999. A comparison of early literacy skills in children with specific language impairment and their typically developing peers. *Am J Speech-Lang Pathol*. 8:249–260.
- [26] Power, A. 2008. Caring for independent lives: Geographies of caring for young adults with intellectual disabilities. *Social Science & Medicine*. 67, 834–843.
- [27] Helen, T.F, Rhea, P., Catherine, L. 2012. Language and Communication in Autism. *Handbook of Autism and Pervasive Developmental Disorders*. 12(1): 335-340(online). http://faculty.washington.edu/rab2/Site/AUT501_files/TagerFlusberg.%20Paul.%20Lord%202005%20Language%20and%20communication%20in%20autism.pdf. (4th April 2016).
- [28] Atwood, T. 2006. Autism and Asperger syndrome: preparing for adulthood. *Journal of Child Psychology and Psychiatry*. 2(47). 223-224. <http://onlinelibrary.wiley.com/doi/10.1111/j.1469-7610.2006.00452.x/abstract>
- [29] Jarrold, Christopher. 2003. A Review of Research into Pretend Play in Autism. *Autism : The International Journal of Research and Practice*. 4(7):379-390.
- [30] Debra, L. Truitt. 2011. The Effect of Training and Development on Employee Attitude as it Relates to Training and Work Proficiency. DOI: 10.1177/2158244011433338 Published 27 December 2011
- [31] Erica C.J. 2015. Community Perspectives on Autism Spectrum Disorder. *Undergraduate Thesis. The Ohio State University* (online). https://kb.osu.edu/dspace/bitstream/handle/1811/68935/Jacoby_thesis_FINALE_4.30.pdf?sequence=3 (1 June 2016).
- [32] Reverby, S.M. 2001. More than fact or fiction. Cultural memory and the Tuskegee Syphilis Study. *Hastings Cent Rep*. Sep–Oct;31(5):22–8. [PubMed]

AUTHORS

First Author: Mohamed Nur Adli Kamel., Faculty of Medicine, Cyberjaya University College of Medical Sciences (CUCMS), Cyberjaya, Selangor, Malaysia.
E-mail: adlikamel19978@gmail.com

Second Author: Thurgaa Rajanderan, CUCMS.
E-mail: rthurgaa@gmail.com

Third Author: Beulah Devakirubai Gnanakkan, CUCMS.
E-mail: beulahgnanakkan@gmail.com

Fourth Author: Fatimah Zahidah Fauzi, CUCMS.
E-mail: fatimahzahidah@gmail.com

Fifth Author: Luqmanul Hakim Zulkafli, CUCMS.
E-mail: luqmanulhakimzulkafli@gmail.com

Sixth Author: Muhammad Ikram Hanafi, CUCMS.
E-mail: myikram94@gmail.com

Seventh Author: Geetha Selvarajah, CUCMS.
E-mail: geetha.srajah@gmail.com

Eighth Author: Siti Amira Jabar, CUCMS.
E-mail: amirajabar@gmail.com

Ninth & Correspondence Author: Sabariah Abd Hamid, CUCMS.
E-mail: sabar318@gmail.com