Autism Knowledge in the Community in Hanoi, Vietnam in 2017: A Cross-Sectional Survey

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Abstract: *The lack of knowledge about autism affected the timely detection as well as early treatment in autistic children. Therefore, our goal was to assess the knowledge in the community in Hanoi, Vietnam. A cross-sectional survey was conducted on a total of 489 subjects participating in the study. Data collection was developed based on previous studies on assessment of Autism Spectrum Disorder (ASD) knowledge and was revised and adjusted by psychologists and public health experts. We observed all subjects also heard about ASD. However, the percentage of people who have sufficient knowledge of ASD was relatively low. There was the relationship between knowledge of ASD and educational level (p-value < 0.05).*

Keywords: ASD, knowledge, autism

1. Introduction

Autism Spectrum Disorder (ASD) is the name for a group of mental development disorder from mild to severe is characterized by impaired social interaction, impaired verbal and non-verbal communication and restricted and repetitive behaviour[1]. ASD causes severe consequences for themselves which limits their ability to participate in social activities, and not to take care of themselves.In addition, the quality of life is severely reduced and becomes a burden for families and society[2]. According to previous studies on epidemiological was implemented in Asia, Europe and North America showed that the incidence of autism accounted for 1% to 2% of the world population. The Centers for Disease Control and Prevention (CDC) estimated that 1 in 68 children has been diagnosed with ASD[3]. The incidence of autism in Korea is 1 in 38 children[4]. In Vietnam, there was no data on the incidence of autistic children. However, the number of children diagnosed with ASD at centres and hospitals has increased rapidly in recent years[5].

Currently, there is no cure for children with autism. Early intervention for autistic children is very important to maximize the child's ability to develop[6, 7]. Therefore, the members of the family, namely primary caregivers play an important role in the early detection of abnormal in autistic children.Inadequate knowledge was the reason that community attitude is not good for autistic children and their family[8]. Considering that there is still little research being implemented on this matter, the aim of this survey was to assess the knowledge in the community in Hanoi, Vietnam.

2. Methods

Study Design: A cross-sectional survey was carried out from August 2017 to December 2017.

Participants: Total of 489 participants who have aged from 18 to 60 living in Hanoi, Vietnam and agreed to join in this survey. Those who do not have the ability to communicate, diagnosed with mental health or Down syndrome exclude in this survey, did not have autistic children.

3. Measurement

The measurement tool consisted of two parts: Firstly, demographic information of participant survey includes age, gender, educational level and employment status. Knowledge related to ASD was developed based on previous studies on assessment of ASD knowledge in the community[8-10]. Psychologists and public health experts have revised and adjusted questionnaire suitable for the Vietnam context. The ASD knowledge included: impairment of children with ASD; facilities where autistic children could treat; how to deal with suspected ASD; which age should intervene for autistic children, ASD signs in the autistic child aged 0 to 1, aged 1 to 2, aged 2 to 3; the main manifestation of ASD.

Statistical analyses
Descriptive statistics included Mean, Standard Deviation (for quantitative variables) and frequency, percentage (for qualitative variables) to describe the information about the subject. Figures are also used to show the characteristic of knowledge of research participants.

Adjusted odds ratio (aOR) for autism knowledge in the community was calculated using multiple logistics regression to estimate their association with participants' characteristics, the stepwise approach was used for model selection, and p-value less than 0.05 were used to assess the significance of independent variables.All analyses were implemented using STATA version 12.0.

4. Result

Participants' characteristics
Total of 489 people with a mean age of 43.2±9.9 currently living in Hanoi, Vietnam were included in this survey. Females accounted for 73.0% whereas male made up 27.0%. There was 68.7% subject aged under 48 and 31.3% aged 48 and above. Regarding education level, participants were

high school accounted for 37.4%, followed by 36.4% those who were the higher education. People who had the middle school made up 26.2%. A majority (88.7%) had a job while 11.3% of those who had unemployment. The demographic characteristics of survey participant are shown in **Table 1**.

Knowledge of community on ASD

The proportion of subjects who had knowledge about the impairment of children with ASD made up 65.4%, followed by 64.2% of participant know where ASD treatment. There was 58.5% subject about how to deal with suspected ASD whereas 57.1% of participant understand which age should intervene for autistic children. The proportion of subject know the ASD signs in the autistic child aged 2 to 3 accounted for 18%, those who suppose that ASD maybe treat was 10.4%, know the symptoms of ASD at child aged 1 to 2 and had knowledge about the main manifestation of ASD was 3.9% and 3.5%, respectively. The percentage of participant know the symptoms of ASD at child aged 0 to 1 was 1%. All participant also heard about autism. However, the proportion of people who have sufficient knowledge of autism made up only 2.7%.

Multivariate logistic regression analysis

The finding from multiple logistic regression analysis carried out using the independent variables age group, gender, education level, and employment are displayed in **Table 3**. Models were developed for knowledge on autism as the outcome. The adjusted odds of knowledge were 9.17 times for those who were higher education compared with middle school (reference group). The associations between knowledge on autism of community and gender, age, and employment were not statistically significant.

5. Discussion

This study was conducted to assess the knowledge of the people in Hanoi, Vietnam. Out of 489 subjects who participated in this study, those who aged under 48 accounted for the highest proportion (68.7%). Besides, our results also showed that the male and female ratio was 1: 2.7. There was the significant statistical relationship between educational level and knowledge of ASD. The higher education people have the better knowledge of ASD they have. This result is equivalent to a research by Surmen et al in 2015 on the knowledge, attitude of autism of 160 people in Istanbul[11]. The study also found that knowledge of autism had the difference significant between educational levels (p-value<0.05).

All participant in our survey had heard about ASD. This rate is higher than in previous study on 348 health staffs in Pakistan in 2011, had only 44.6% of them heard about ASD [12]. However, the sufficient knowledge of ASD of people in Hanoi, Vietnam was relatively lower than other countries. A study on 1024 subjects in Northern Ireland, there was more than 80% respondents had full knowledge of ASD and over 60% of has been exposed to children with autism in their area[13].

According to our survey, there as 97.3% of people had incomplete knowledge of ASD. This result is consistent with the percentage in a study by Liu on knowledge and attitude of autism on 471 preschool teachers in China in 2016 [14]. In Liu's study in 2016, a total of 471 preschool teachers in Guangzhou and Foshan, China had finished the questionnaire related to knowledge of ASD. Most of the teachers answered correct the questions related the normal development in healthy children (50%). In contrast, 83% of participant responded not correct the questions related knowledge of autism. There was a significant difference knowledge of autism and the area (the preschool teacher who lived in Guangzhou had more knowledge than people in Foshan, p-value less than 0.0001). The knowledge of autism had also the relationship with education level (p-value <0.05) and type of school (p-value =0.023). Another study by Syriopoulou et al inGreek in 2016 on knowledge of ASD of 171 teachers and 50 parents who had children with autism, the majority of study participants said that the cooperation and communication between teachers and parents play an important role in autism interventions[15]. The early detection rate for autistic children who had aged under 3 in our survey was relatively low. The late treatment would affect the progress of the children. therefore, intervention should focus on increasing the knowledge as well as the practice of early detection of children with autism for their family.

6. Conclusion

The increasing incidence of autism children is raising many difficulties not only for themselves and their families but also for the whole society. The result showed that the knowledge about ASD of community in Hanoi, Vietnam was still limited. The government need to have many activities to enhance their knowledge on autism for the community. In addition, we also focused on the early intervention for ASD children.

7. List of abbreviations

ASD: Autism spectrum disorder

8. Declarations

Ethics approval and consent to participate

The study protocol was reviewed and approved by the Institutional Review Board of Vinmec Research Institute of Stem Cell and Gene Technology on July 25, 2017. The reference number for the ethics committee is 04/2017/QD-VNC. The committee evaluated the ethical aspects of the study in accordance with The World Medical Association's Declaration of Helsinki. The study was explained in detail to participants. Informed consent was obtained well before participant enrollment in all cases.

Consent for publication

Informed consent was obtained well before patient enrollment in all cases. This consent included their agreement to the publication of indirect identifiers for participants, such as age and gender.

Competing interests

The authors have declared that no competing interests exist.

Authors' contribution
KTN, PHN: participated in the study concept, design and data collection. KTN: performed data analysis. KTN, PHN participated in the interpretation of the data and drafted the manuscript. All authors have read and approved the final version of the manuscript.

References

[1] National Institute of Neurological Disorders and Stroke. What is autism spectrum disorder [https://www.ninds.nih.gov/Disorders/Patient-Caregiver-Education/Fact-Sheets/Autism-Spectrum-Disorder-Fact-Sheet]

[2] Valsamma E, Jane G: Parental Quality of Life in Autism Spectrum Disorder: Current Status and Future Directions. 2016.

[3] Rice CE, Rosanoff M, Dawson G, Durkin MS, Croen LA, Singer A *et al*: Evaluating Changes in the Prevalence of the Autism Spectrum Disorders (ASDs). *Public health reviews* 2012, 34(2):1-22.

[4] Kim YS, Leventhal BL, Koh YJ, Fombonne E, Laska E, Lim EC *et al*: Prevalence of autism spectrum disorders in a total population sample. *The American journal of psychiatry* 2011, 168(9):904-912.

[5] Giang H, Ha T: Some epidemiological characteristics of autistic children treated at National Children Hospital from 2000 to 2007. *Journal of Practical Medicine* 2008, 4:104-107.

[6] Howlin P, Asgharian A: The diagnosis of autism and Asperger syndrome: findings from a survey of 770 families. *Developmental medicine and child neurology* 1999, 41(12):834-839.

[7] Filipek PA, Accardo PJ, Ashwal S, Baranek GT, Cook EH, Jr., Dawson G *et al*: Practice parameter: screening and diagnosis of autism: report of the Quality Standards Subcommittee of the American Academy of Neurology and the Child Neurology Society. *Neurology* 2000, 55(4):468-479.

[8] Neni SW, Latif AZ, Wong SY, Lua PL: Awareness, knowledge and attitudes towards epilepsy among rural populations in East Coast Peninsular Malaysia: a preliminary exploration. *Seizure* 2010, 19(5):280-290.

[9] Heidgerken AD, Geffken G, Modi A, Frakey L: A survey of autism knowledge in a health care setting. *Journal of autism and developmental disorders* 2005, 35(3):323-330.

[10] Campbell JM, Barger BD: Middle school students' knowledge of autism. *Journal of autism and developmental disorders* 2011, 41(6):732-740.

[11] Surmen A, Hidiroglu S, Usta HH, Awiwi M, Oguz AS, Karavus M *et al*: A study exploring knowledge, attitudes and behaviours towards autism among adults applying to a Family Health Center in Istanbul. *Northern Clinics of Istanbul* 2015, 2(1):13-18.

[12] Rahbar MH, Ibrahim K, Assassi P: Knowledge and attitude of general practitioners regarding autism in Karachi, Pakistan. *J Autism Dev Disord* 2011, 41(4):465-474.

[13] Dillenburger K, Jordan JA, McKerr L, Devine P, Keenan M: Awareness and knowledge of autism and autism interventions: A general population survey *Research in Autism Spectrum Disorders* 2012, 7(12):1558-1567.

[14] Liu Y, Li J, Zheng Q, Zaroff CM, Hall BJ, Li X *et al*: Knowledge, attitudes, and perceptions of autism spectrum disorder in a stratified sampling of preschool teachers in China. *BMC Psychiatry* 2016, 16:142.

[15] Syriopoulou-Delli CK, Cassimos DC, Polychronopoulou SA: Collaboration between teachers and parents of children with ASD on issues of education. *Res Dev Disabil* 2016, 55:330-345.

Table 1: Demographic characteristics of study participant (N= 489)

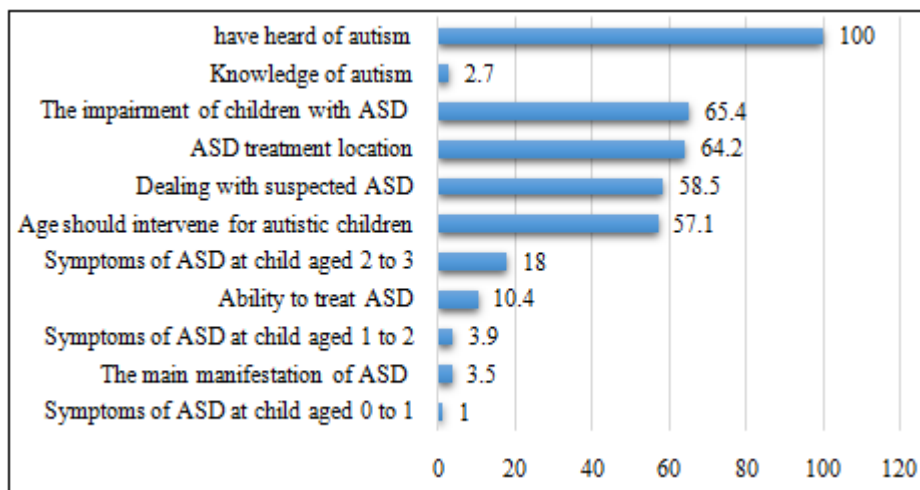|		N	Pecent (%)
Gender	*Male*	132	27.0
	Female	357	73.0
Age in years	*<48*	336	68.7
	≥48	153	31.3
Education level	*Middle school (primary/secondary school)*	128	26.2
	High school	183	37.4
	Higher education	178	36.4
Employment	*Yes*	434	88.7
	No (unemployment)	55	11.3

Figure 1: The proportion of participant had the right knowledge on ASD (%)

Table 3: Multivariate logistic regression models of knowledge of autism

		Knowledge adjusted OR (95% CI)
Gender	*Male*	Ref
	Female	0.84 (0.25-2.82)
Age in years	*<48*	Ref
	≥48	2.01 (0.62-6.53)
Education level	*Middle school*	Ref
	High school	1.53 (0.14-17.4)
	Higher education	9.17 (1.09-76.6) *
Employment	*Yes*	Ref
	No (unemployment)	1.13 (0.14-9.36)

* *p*-value <0.05