A New Structured Interview for Children with Autism Spectrum Disorder Based on the DSM-IV

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Background: *Autism spectrum disorder (ASD) is a common neurodevelopmental disorder in children. The clinical spectrum of ASD includes autism, childhood disintegrative disorder, Asperger syndrome and pervasive developmental disorder not otherwise specified (PDD-NOS). Although the DSM-IV criteria are well accepted for ASD diagnosis, there are some known limitations for clinicians. The most important issue is lack of specific age-appropriate items in each domain. Thus, the DSM-IV needs some modifications in order to be appropriate for clinical use.*
Objective: *To develop a structured interview for children based on the DSM-IV diagnostic criteria of autism and PDD-NOS.*
Material and Method: *From June 2006 to December 2008, 140 Thai children, 121 boys and 19 girls, already diagnosed with ASD, were recruited through the child development clinics of Ramathibodi and Thammasat University Hospitals in Thailand. A 26-item structured interview was developed with scoring according to the DSM-IV diagnostic criteria for autism and PDD-NOS. To test the accuracy of the structured interview and its reliability, 32 children with ASD were selected and interviewed by four clinicians using the new instrument. One clinician interviewed the parents or caregivers, while three others independently took notes and observed the play behavior of the children. All items from the structured interview as scored by each clinician were compared using inter-rater agreement statistics (Kappa). All of the original 140 patients were then clinically diagnosed again using the structured interview and the results were compared with the initial diagnoses.*
Results: *Of the 140 patients originally diagnosed with ASD, 110 and 30 patients were finally diagnosed with the new interview as having autism and PDD-NOS, respectively. The initial diagnoses from 15 cases (10.7%) were changed according to the structured interview. Inter-rater reliability among the four clinicians showed a good level of agreement (Kappa = 0.897) with statistical significance (p<0.001). The authors only compared the items in the structured interview between the autism and PDD-NOS groups from 105 cases aged 2-5 years (79 cases with autism and 26 cases with PDD-NOS) because there were only 4 cases with PDD-NOS in the other age groups. Highly significant differences (p<0.001) in clinical items between patients with autism and patients with PDD-NOS from the final diagnoses were noted in 6 of 8 items in the category of restricted, repetitive and stereotyped patterns of behavior, interests and activities, which were more common in the autism group than the PDD-NOS group. In addition, the autism group had higher frequencies of using finger-pointing to indicate interest rather than verbalization, and idiosyncratic language, than the PDD-NOS group.*
Conclusion: *The newly developed structured interview for Thai children with ASD had a high level of inter-rater reliability between four clinicians. However, most children tested using this structured interview were 2-5 years of age, and the study did not include non-autistic groups. The application of this structured interview needs further study with a wider variety of cases, such as ASD cases from different age groups, children with delayed development and normal children.*

Keywords: *ASD, Autism, Autism spectrum disorder, DSM-IV, PDD*

Autism spectrum disorder (ASD) is a common neurodevelopmental disorder in children. The etiologic pathways leading to an ASD are unclear, but best current theory indicates they are likely caused by a combination of genetic and environmental factors. Over the last 10 years, the prevalence of autism in the UK and the US has increased from 13 per 10,000 children[1] to approximately 1 percent when the studies included all autism spectrum conditions[2,3]. One study in Thailand found the incidence rate of ASD among Thai children aged less than 12 years had increased from 1.43 per 10,000 in 1998 to 6.94 per 10,000 in 2002[4]. This

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increasing prevalence may be due to a higher rate of autism, but it may also be due simply to changes in diagnostic criteria or practices, increasing clinical awareness of the disease, and/or the availability of early intervention funding[5]. In addition, children with autism are increasingly diagnosed at a younger age, and more cases with broader phenotypes have been identified, including pervasive developmental disorder not otherwise specified (PDD-NOS).

The two common classification systems for autism diagnosis used in Thailand are the Diagnostic and Statistical Manual of Mental Disorders, fourth edition (DSM-IV) criteria published by the American Psychological Association[6], and the International Classification of Diseases (ICD) published by the World Health Organization[7]. The DSM-IV criteria for ASD are based on qualitative impairments in social communication, interaction and imagination, with a restricted range of interests and stereotyped repetitive behaviors and mannerisms. The major ASD diseases include autism, childhood disintegrative disorder, Asperger syndrome and PDD-NOS[6].

Although the DSM-IV criteria are well accepted, there are some known limitations for clinicians. The most important issue is lack of specific age-appropriate items in each domain. For example, there are no developmentally appropriate items for assessment in the domains of social interaction or communication. The broader phenotypes and the outcome variations suggest that at the time of diagnosis, children with this neurodevelopmental disorder are at different levels of each developmental aspect. Thus the clinical diagnostic tool, DSM-IV, needs some modifications in order to be appropriate for clinical use, particularly in countries such as Thailand where there are a limited number of specialists and diagnostic tools for ASD.

Material and Method
Participants
The research design was a cross-sectional study. From June 2006 to December 2008, 140 Thai children, 121 boys and 19 girls, diagnosed with ASD were recruited through the child development clinics of Ramathibodi and Thammasat University Hospitals in Thailand. The children were 1-15 years of age, with a current clinical diagnosis of ASD based on their overall clinical assessments through routine clinical practice. All cases had a normal karyotype and normal CGG repeats of the FMR1 gene. Patients had no sensory impairment, no dysmorphic features compatible with

known genetic syndromes, no history of perinatal complications, normal birth weight or no prematurity. The families gave their informed consent for their children to be included in this study, which was approved by the Ethics Committees from both participating medical schools. Prior to the actual study, all children were administered a non-verbal IQ test, the Stanford-Binet Intelligence Scale: 5th edition, and the Vineland Adaptive Behavior Scale: Interview Edition Survey Form.

Structured interview
The new questionnaire was developed by modification of selected social-emotional developmental milestones identified as significant in earlier previous reports[8-10] in order to supplement the DSM-IV criteria more concrete and developmentally appropriate. This structured interview was developed to attempt to achieve clearer distinction between the two major ASDs, autism and PDD-NOS, as diagnosed by the current DSM-IV criteria[6]. The DSM-IV criteria are divided into three domains, defined as (1) qualitative impairments in social interaction, (2) qualitative impairments in communication, and (3) restricted repetitive and stereotyped patterns of behavior, interests, and activities. Each of the three domains has 4 items (1a-1d; 2a-2d and 3a-3d, see Table 1 for details) and 1-3 subitems in each item (i.e. 1a.1, 1a.2, 1a.3 in item 1a). The content validity of the new structured interview was evaluated and approved by other developmental-behavioral pediatricians, psychiatrists and psychologists. When the new structured interview was used in the real interviews with the children previously diagnosed as ASD, each of the new subitems evaluated a particular manifestation often noted in ASD, and was scored as either "present" or "absent". We scored each item as "present" when at least one subitem was present. For example, at least one from subitem 1.a.1, 1.a.2 or 1.a.3 was present, we scored item 1a as "present". The diagnosis of autism based on DSM-IV requires a total of six (or more) "present" items from the three top-level domains with at least two from (1), and one each from (2) and (3). In addition, clinical onset must have been noticed before 3 years of age. In the DSM-IV, PDD-NOS is defined as some pervasive impairment in all areas, but not severe enough in any one area to meet the criteria for autism.

Inter-rater liability
The authors tested the new instrument on 32 known ASD children and interviewed their parents or

Table 1. Chi-square tests of the DSM-IV items in 105 patients with autism (n = 79) and patients with PDD-NOS (n = 26), aged 2-5 years

Item	Chi-square test (*p*-value)
(1) Qualitative impairment in social interaction	
1.a Marked impairment in the use of multiple nonverbal behaviors	
1.a.1 He/she looks at you while you are playing with him or her[8]	0.449 (NS)
1.a.2 Spontaneous use of simple gestures to communicate, such as pointing (protoimperative), nodding, head shaking, waving bye-bye, clapping, begging, raising the arms to be lifted, mime for eating or pee-pee, or others[6]	0.071 (NS)
1.a.3 He/she uses a variety of facial expressions for an emotional response appropriately, i.e., pleased, sad, angry, etc[8]	0.012*
1.b Failure to develop peer relationships appropriate to developmental level	
1.b.1 He/she has in his or her own world[9]	0.104 (NS)
1.b.2 He/she prefer solitary play activity[9]	0.043*
1.b.3 He/she initiates play with another child[8]	0.801 (NS)
1.c Lack of spontaneous seeking to share enjoyment, interests, or achievements with other people	
1.c.1. He/she uses his/her finger to point at, to indicate interest in something or to communicate to get your attention (protodeclarative)[8,9]	***
1.c.2. He/she brings objects to you to show you something[10]	0.035*
1.d Lack of social emotional reciprocity	
1.d.1. No or minimal recognition of other people's happiness or distress[9]	0.052 (NS)
1.d.2. Response to the smiling of others[9]	0.257 (NS)
1.d.3. Response to someone calling the child's name[8,9]	0.006**
(2) Qualitative impairments in communication	
2.a Delay in developing, or total lack of, spoken language	
2.a.1. No spoken language, or delayed spoken language[6]	0.002**
2.a.2. Significant loss of any language at any age[9]	0.341
2.b In individuals with adequate speech, marked impairment in the ability to initiate or sustain a conversation with others	
2.b.1. Marked impairment in the ability to initiate a conversation with others[6]	0.001**
2.b.2. Marked impairment in the ability to sustain a conversation with others[6]	0.447
2.c Stereotyped and repetitive use of language or idiosyncratic language	
2.c.1. Stereotyped and repetitive use of language[6]	0.001**
2.c.2. Idiosyncratic language/neologism language[6]	***
2.d Lack of varied, spontaneous make-believe play or social imitative play appropriate to developmental level	
2.d.1. Limited variety of imaginative or pretend play (cooking, feeding a doll, etc)[9]	0.047*
(3) Restricted repetitive and stereotyped patterns of behavior, interests, and activities	
3.a Encompassing preoccupation with one or more stereotyped and restricted pattern of interest that is abnormal either in intensity or focus	
3.a.1. Playing with a variety of different toys in the same exact way each time[8]	0.184 (NS)
3.a.2. Repetitive play with toys or actions with other things, such as lining up objects, turning light switches on and off[9]	***
3.a.3. Playing properly with small toys (e.g. cars or bricks) without just mouthing, fiddling or dropping them[10]	***
3.a.4. Restricted patterns of interest that are abnormal either in intensity or focus[6]	***
3.b Apparently inflexible adherence to specific, nonfunctional routines or rituals	
3.b.1. Insist on certain routines or rituals, such as wearing a certain jacket or making sure that all his/her toys are in the right place[8]	0.090 (NS)
3.c Stereotyped and repetitive motor mannerisms	
3.c.1. Spins or whirls him/herself around for long periods of time[8]	***
3.c.2. Moves his/her hands or fingers in unusual or repetitive ways[8]	***
3.d Persistent preoccupation with parts of objects	
3.d.1. Preoccupation with parts of objects[6]	***

NS = not significant (*p*>0.05)
Statistical significance * *p*<0.05, ** *p*<0.01, *** *p*<0.001

caregivers, in order to standardize their use of the new instrument. During this trial, one researcher interviewed the parents or caregivers, while three others independently took notes and observed the play behaviors of the children. Each researcher scored each item independently. All researchers took turns as either interviewer or observer. The interviews were also recorded, for further study later if needed. Following these interviews, inter-rater reliability among the clinicians was statistically tested.

Statistics

The authors used inter-rater agreement statistics (Kappa) to test the correlation of the clinical interpretations of the four clinicians, with results expressed in percentages, means and standard deviations. For comparisons, the patients were divided into autism and PDD-NOS groups. Mean ages and non-verbal IQ scores between the patient groups were compared by independent t-test. Numbers of scores as presence or absence in each item from the structured interviews were compared between the patient groups using Chi-square test. Statistical significance was considered at a p-value <0.05.

Results

Inter-rater reliability

Inter-rater reliability among the four clinicians showed a good level of agreement (Kappa = 0.897) with statistical significance (p<0.001).

Demographic data

The ages of the 140 patients ranged from 17 months to 12 years and 1 month (mean 49.4±21.4 months). The non-verbal IQ scores ranged from 42 to 127 (mean 65.2±17.1). One hundred and ten children were finally diagnosed as having autism (96 boys, 14 girls, mean age 48.9±20.3 months), while the remaining 30 children were diagnosed as having PDD-NOS (25 boys, 5 girls, mean age 51.1±25.3 months). Table 2 shows the age groups according to each clinical diagnosis, autism and PDD-NOS. There were no statistically significant differences in the mean ages between boys and girls (p>0.05). However, the mean non-verbal IQ score was statistically, significantly higher in patients with PDD-NOS (75.9±17.8) than patients with autism (62.7±15.9).

The five major clinical presentations in the autism and PDD-NOS groups are shown in Table 3. The common clinical presentations in the combined groups were no meaningful words (45.0%) and delayed speech (37.9%). No meaningful words were more common in the autism group (48.2%) than the PDD-NOS group (33.3%), while delayed speech was more common in the PDD-NOS group (53.3%) than the autism group (33.6%). Hyperactivity was exclusively found in the autism group (7.3%).

Three children whose initial diagnosis was autism from the original clinical assessment had the diagnosis changed to be PDD-NOS based on the new structured interview, while twelve children initially diagnosed as having PDD-NOS had the diagnosis changed to autism after being tested with the structured interview. The overall discrepancy between the initial clinical assessment and the assessment based on the structured interview was 15 of 140 cases (10.7%).

The authors only compared the items in the structured interview between the autism and PDD-NOS groups from cases aged 2-5 years (Table 1) because there were only 4 cases with PDD-NOS in the other age groups (Table 2). There were 79 and 26 cases aged 2-5 years with autism and PDD-NOS, respectively. The following comparisons between autism and PDD-NOS groups were described in 3 domains diagnostic criteria.

(1) Qualitative impairment in social interactions.

(1a) Marked impairment in the use of multiple non-verbal behaviors (3 subitems).

The only subitem that showed a statistically significant difference was subitem 1.a.3 (facial expression), in which the autism group showed less facial expressions for an appropriate emotional response than the PDD-NOS group. For subitems 1.a.1 (avoiding eye contact) and 1.a.2 (spontaneous use of simple gestures to communication), both groups had similar clinical features.

(1b) Failure to develop peer relationships appropriate to developmental level (3 subitems).

For 2 subitems, 1.b.1 (isolation) and 1.b.3 (no initiation of playing with other children), there were no differences in clinical features between the groups, except the children in the autism group were more likely to play alone compared to the PDD-NOS group (subitem 1.b.2).

(1c) Lack of spontaneous seeking to share enjoyment, interests, or achievements with other people (2 subitems).

In both subitems, the autistic children had a higher frequency of being unable or unwilling to share their interests with other people compared to the PDD-NOS children.

(1d) Lack of social emotional reciprocity (3

Table 2. Age groups of the 140 study participants

Age group (years)	Autism number (%)	PDD-NOS number (%)	Total number (%)
1-2	5 (4.6)	0 (0)	5 (3.6)
2-5	79 (71.8)	26 (86.7)	105 (75.0)
5-10	25 (22.7)	3 (10.0)	28 (20.0)
10-15	1 (0.9)	1 (3.3)	2 (1.4)
Total	110 (100)	30 (100)	140 (100)

Table 3. Clinical presentations of participants

Clinical presentation	Autism number (%)	PDD-NOS number (%)	Total number (%)
No meaningful word*	53 (48.2)	10 (33.3)	63 (45.0)
Delayed language*	37 (33.6)	16 (53.4)	53 (37.9)
ASD suspected by parents	7 (6.4)	2 (6.7)	9 (6.4)
ASD suspected by others	3 (2.7)	1 (3.3)	4 (2.9)
Hyperactivity	8 (7.3)	0 (0)	8 (5.7)
Other	2 (1.8)	1 (3.3)	3 (2.1)
Total	110 (100)	30 (100)	140 (100)

* Statistical significance $p<0.05$

subitems)

There were no differences between the groups in clinical subitems 1.d.1 (no or minimal recognition of other people's feelings) and 1.d.2 (no response to the smiling of others), while the clinical feature in subitem 1.d.3 (no response to someone calling the child's name) was more common in the autism group than the PDD-NOS group.

(2) Qualitative impairments in communication.

(2a) Delay in developing, or total lack of, spoken language (2 subitems).

Most ASD cases originally had come to the clinic for evaluation of language problems (Table 3), however, we found that the clinical feature in subitem 2.a.1 (no spoken language or delayed speech) was more common in the autism group than the PDD-NOS group. However, there was no difference between the groups with subitem 2.a.2 (loss of speech after the child was able to speak).

(2b) In individuals with adequate speech, marked impairment in the ability to initiate or sustain a conversation with others (2 subitems).

The autism group had a higher frequency of subitem 2.b.1 (impairment in ability to initiate a conversation with others), than the PDD-NOS group, but both groups had similar frequencies of subitem 2.b.2 (ability to sustain a conversation with others).

(2c) Stereotyped and repetitive use of language or idiosyncratic language (2 subitems), and (2d) Lack of varied, spontaneous make-believe play or social imitative play appropriate to developmental level (1 subitem).

Subitem 2c showed a statistically significant difference between the groups, as the autism group had a higher frequency of stereotypes, repetitive and idiosyncratic language than the PDD-NOS group. The autism group had a lower frequency of imaginative play (subitem 2.d.1) compared to the PDD-NOS group, with borderline statistical significance (p = 0.047).

3). Restricted, repetitive and stereotyped patterns of behavior, interests, and activities.

In these diagnostic criteria, 6 of 8 subitems were more common in the autism group than in the PDD-NOS group with high statistical significance (p<0.001). The two subitems with no statistically significant difference between the groups were subitems 3.a.1 (playing with a variety of different toys in the same exact way each time) and 3.b.1 (insisting on certain routines or rituals).

Discussion

The currently accepted "gold standard" for diagnosing children with ASD under the age of 5 years is clinical judgement[11]. Several studies have found

that routines and rituals based on the DSM-IV diagnostic criteria (item 3b) were not commonly found in very young children (~2-3 years of age)[12-17]. The DSM-IV diagnostic criteria do not seem to consider adequately these items as they apply to very young children, and many physicians have indicated feeling that these items need to be adjusted based on a clinical judgment of age-appropriate behavior[18], with perhaps additional consideration given to how these factors would be different in different cultures. Our study found that repetitive and restricted patterns of interest, stereotyped/repetitive motor mannerisms, and preoccupation with parts of objects were more common in autistic children than PDD-NOS children, at 2-5 years of age. These repetitive behaviors would be helpful to distinguish a child with autism from one with PDD-NOS.

It is difficult to distinguish with any degree of confidence between autistic and PDD-NOS children using only overall clinical evaluation in practice. In the current study, the difference between the initial clinical assessment and the final assessment using the new structured interview was approximately 11%. There are 2 reasons the structured interview may have had better results. First, the structured interview has a systematic checklist with instructions for assessing each item which are easy to follow. Second, there is often a time constraint in outpatient clinics, which means the doctor has less time to ensure the best diagnosis, while in this study, the clinicians had more time to use the structured interview in the research.

In May 2013 the fifth edition of the DSM (DSM-5) was released, and the major changes to the definition of ASD, according to a review by Lecavalier[19], were: (1) the combination of the two core domains of social and communication skills to one domain; (2) no age of onset requirement; and (3) elimination of subtypes (i.e. childhood disintegrative disorder, Asperger syndrome and PDD-NOS). Although there have been a few studies since last May, which have supported the validity of the new criteria in the DSM-5[20,21], there are still those who feel the changes do not go far enough, or should not have been made, and the debate continues[22]. The structured interview developed for this study can be modified for the new diagnostic DSM-5 criteria since the DSM-5 criteria still keep some clinical items for autism and PDD-NOS of the DSM-IV. However, the authors of this current study believe that DSM-IV will still be used in Thailand for a few years until the new DSM-5 is well established in clinical practice.

Limitations of the study

This newly developed structured interview based on the DSM-IV criteria compared autism and PDD-NOS in children aged only 2-5 years, therefore the authors cannot say if it would improve diagnostic accuracy in other age groups. In addition, this study did not include non-autistic groups (normally developing children, or those with a developmental language disorder or globally delayed development); therefore, the authors could not evaluate the sensitivity and specificity of the new structured interview. The authors acknowledge these limitations, and although the authors believe the structured interview is a potentially useful tool to help distinguish these diseases more accurately, the authors understand that this structured interview needs further study and to be standardized with the currently developed Thai ADOS and Thai ADI-R.

Potential conflicts of interest

None.

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แบบสัมภาษณ์ใหม่ตามเกณฑ์ DSM-IV เพื่อวินิจฉัยเด็กออทิซึมสเปคตรัม

ทิพวรรณ หรรษคุณาชัย, รวิวรรณ รุ่งไพรวัลย์, ทัศนวัต สมบุญธรรม, พรพรต ลิ้มประเสริฐ, นิชรา เรืองดารกานนท์

ภูมิหลัง: ออทิซึมสเปคตรัมเป็นกลุ่มโรคที่มีความผิดปกติของพัฒนาการระบบประสาทที่พบบ่อย ออทิซึมสเปคตรัม ประกอบด้วยโรคออทิซึม กลุ่มอาการแอสเปอร์เกอร์ childhood disintegrative disorder และ pervasive developmental disorder not otherwise specified (PDD-NOS) ถึงแม้ว่า DSM-IV เป็นเกณฑ์การวินิจฉัยสำหรับ ออทิซึมสเปคตรัมที่ได้รับการยอมรับแต่ในทางปฏิบัติยังมีข้อจำกัดสำหรับแพทย์ผู้ใช้ โดยเฉพาะ DSM-IV ไม่มีรายละเอียดการประเมินให้เหมาะสมกับการพัฒนาของเด็กแต่ละวัย ดังนั้นการปรับปรุงแบบสัมภาษณ์ขึ้นใหม่ตามเกณฑ์ DSM-IV จึงมี ความจำเป็นเพื่อประโยชน์ในการนำมาใช้ทางคลินิกอย่างเหมาะสมกับอายุของเด็กแต่ละช่วงวัย

วัตถุประสงค์: เพื่อพัฒนาแบบสัมภาษณ์ตามเกณฑ์ DSM-IV เพื่อวินิจฉัยเด็กออทิซึมและ PDD-NOS

วัสดุและวิธีการ: ตั้งแต่เดือนมิถุนายน พ.ศ. 2549 ถึงเดือนธันวาคม พ.ศ. 2551 คณะศึกษาจากโรงพยาบาลรามาธิบดีและ โรงพยาบาลธรรมศาสตร์เฉลิมพระเกียรติ ได้คัดเลือกเด็กไทยที่ได้รับการวินิจฉัยขั้นต้นว่าเป็นกลุ่มอาการออทิซึมสเปคตรัมจากคลินิกพัฒนาการเด็ก จำนวน 140 ราย เป็นเด็กชาย 121 ราย และเด็กหญิง 19 ราย คณะศึกษาได้พัฒนาแบบสัมภาษณ์ตามเกณฑ์ DSM-IV จำนวน 26 ข้อ สำหรับวินิจฉัยเด็กออทิซึม และ PDD-NOS และเพื่อทดสอบแบบสัมภาษณ์ว่ามีความน่าเชื่อถือและเที่ยงตรง แพทย์ทั้ง 4 คน ได้ใช้แบบสัมภาษณ์นี้ประเมินเด็กที่ถูกคัดเลือกข้างต้น 32 ราย โดยมีแพทย์ 1 คน สัมภาษณ์พ่อแม่หรือผู้ดูแลเด็ก แพทย์อีก 3 คนจดบันทึกและสังเกตพฤติกรรมของเด็กไปพร้อมกันแต่เป็นอิสระต่อกัน ผลการประเมินจากแพทย์ทั้ง 4 คนนำมาเปรียบเทียบโดยใช้สถิติ inter-rater agreement (kappa) ส่วนผลการประเมินเด็ก 140 ราย โดยใช้แบบ สัมภาษณ์นำมาเปรียบเทียบกับผลการประเมินขั้นต้น

ผลการศึกษา: เด็ก 140 รายได้รับการวินิจฉัยสุดท้ายจากแบบสัมภาษณ์เป็นออทิซึม 110 ราย และ PDD-NOS 30 ราย การวินิจฉัยสุดท้ายแตกต่าง ไปจากการวินิจฉัยขั้นต้น 15 ราย คิดเป็นร้อยละ 10.7 ผลการประเมินความเที่ยงตรง inter-rater ระหว่างแพทย์ 4 คนอยู่ในเกณฑ์ดี (Kappa = 0.897) และมีนัยสำคัญทางสถิติ (p<0.001) คณะศึกษาเปรียบเทียบแบบสัมภาษณ์แต่ละข้อเฉพาะในกลุ่มเด็กอายุ 2-5 ปี จำนวน 105 ราย เพราะมีเด็ก PDD-NOS เพียง 4 รายในช่วงอายุอื่น ผลการเปรียบเทียบพบว่ากลุ่มเด็กออทิซึม มีพฤติกรรม ความสนใจ และกิจกรรม แบบซ้ำ ๆ เป็นรูปแบบจำเพาะ มากกว่ากลุ่มเด็ก PDD-NOS อย่างมีนัยสำคัญทางสถิติ (p<0.001) โดยพบ 6 ข้อจาก 8 ข้อในกลุ่มวินิจฉัยนี้ นอกจากนี้กลุ่มเด็กออทิซึมมีพฤติกรรม ที่พบได้บ่อยกว่ากลุ่มเด็ก PDD-NOS อีก 2 แบบคือ การใช้นิ้วชี้บอกความต้องการแทนการพูด และมีภาษาพูดแบบ idiosyncratic

สรุป: ผลการประเมินความเที่ยงตรงแบบสัมภาษณ์ที่พัฒนาขึ้นใหม่มี inter-rater ระหว่างแพทย์ 4 คนอยู่ในเกณฑ์ดี แต่การศึกษานี้ทำในกลุ่มเด็กอายุ 2-5 ปี เป็นส่วนใหญ่และไม่ได้ศึกษาในเด็กที่ไม่เป็นออทิซึมสเปคตรัม ดังนั้นแบบสัมภาษณ์นี้จำเป็นต้องมีการศึกษาเพิ่มเติมในกลุ่มอื่น ๆ เช่น เด็กออทิซึม สเปคตรัมอายุต่าง ๆ เด็กพัฒนาการล่าช้าและเด็กปกติ เป็นต้น