

Prevalence and Factors Related to Behavioral and Emotional Problems among Preschool Children in Bangkok, Thailand

Sineenat Teekavanich MD*, Sasitorn Chantaratin MD*
Sudarat Sirisakpanit MSc*, Jariya Tarugsa MD*

* Department of Pediatrics, Faculty of Medicine Siriraj Hospital, Mahidol University, Bangkok, Thailand

Background: Negative biological and environmental factors results in behavioral and emotional problems that can progress into more serious psychiatric conditions. Despite an increase in identification of behavioral and emotional problems in young children worldwide, epidemiological data in Thai population are limited.

Objective: To assess the prevalence of various behavioral and emotional problems and their associated factors in Thai preschoolers in Bangkok.

Material and Method: A cross-sectional study of 463 preschool children aged 4-6 years was performed from August to October 2014. The psychosocial problems were measured using the parent version of the Strengths and Difficulties Questionnaire (SDQ). Several demographic variables and their associations with the identified problems were also examined and analyzed by Chi-square and Binary logistic regression.

Results: Common behavioral and emotional difficulties reported by parents were eating problems (33.6%), games/TV addiction (28.9%), and sibling rivalry (22.9%). The total difficulties scores of SDQ revealed that 11.9% of children were at risk of behavioral and emotional problems. From the SDQ-subscale-scores analysis, the most prevalent problem was hyperactivity (24%), followed by emotional symptoms (11.9%), prosocial difficulties (11.2%), conduct problems (9.5%), and peer problems (3.7%). Factors associated with the preschool behavioral and emotional problems included parental divorce (OR = 3.3 [95% CI, 1.4-7.9]), severe conflicts in family (OR = 2.7 [95% CI, 1.1-6.6]), parent and child health problems (OR = 2.8 [95% CI, 1.2-6.7] and 2.4 [95% CI, 1.0-5.6], respectively), and chronic illness of family members (OR = 5.13 [95% CI, 2.1-12.4]).

Conclusion: Preschool behavioral and emotional problems in Thailand are common. Parents often reported more behavioral problems than emotional ones. Identification of risk factors can imply effective early interventions.

Keywords: Behavioral problem, Emotional problem, Risk factor, Preschool children, SDQ

J Med Assoc Thai 2017; 100 (2): 175-182

Full text. e-Journal : <http://www.jmatonline.com>

Childhood behavioral and emotional problems are common and often causing impairment or distress. Since the past few decades, the increase in the prevalence of behavioral and emotional disorders in many countries across cultures reflected challenges in youth mental health across cultures worldwide^(1,2). This concerning trend was recognized for over 40 years in western societies leading to an introduction of ‘the new

morbidity’ in pediatric practice⁽³⁾. The new morbidity causing significant functional impairment includes behavioral and school-related problems, emotional and family relationship difficulties and adjustment issues following the impact of psychological and social adversities such as poverty, abuse and neglect. Examples of the alarming statistics in psychosocial health include the recent clinical report by the American Academy of Pediatrics which reveals the prevalence of 11% to 20% for children having a behavioral or emotional disorder at any given time. Moreover, developmental and behavioral disorders have now become the top 5 chronic pediatrics conditions impairing children’s psychosocial functions⁽⁴⁾. Cross-sectional rates of

Correspondence to:

Tarugsa J, Division of Child and Adolescent Psychiatry, Department of Pediatrics, Faculty of Medicine Siriraj Hospital, Mahidol University, Bangkok 10700, Thailand.

Phone: +66-2-4195830-31, Fax: +66-2-4198796

E-mail: jariya.tar@mahidol.ac.th

preschool psychiatric disorders at somewhere between 15% and 25% have been reported in studies using semi-structure diagnostic tools^(5,6). These common problems included attention deficit hyperactivity disorder (ADHD), oppositional defiant disorder (ODD), conduct disorders, anxiety disorders and depressive disorders. Other epidemiological studies of preschool psychopathology, using checklist measures, have estimated the prevalence of psychiatric disorders among preschoolers at a number between 7% and 25%. This high prevalence validated the presence of preschool psychopathology with onset during early years and the importance of early identification and intervention^(5,7,8).

Factors associated with behavioral and emotional problems have been examined in a number of studies. Economic disadvantage is among the most common risks for emotional and behavioral problems in most studies^(4,9). In young children, problems are often located in the relationships between parents and children example includes problems with child rearing as a result of parental difficulties or pathological parenting. In contrast, children's developmental difficulties or psychiatric symptoms can also affect parenting capacities which then increase family conflict. Other common risks are children not staying with biological parents, separated parents, maternal stress and low maternal education^(1,2,10,11).

In Thailand, epidemiological data of preschool behavioral and emotional problems are limited. There were only two studies describing preschool behavioral problems so far. The more recent one was conducted in 600 children aged 1-to 5-year-olds who lived in the northern Bangkok from October 1995 to February 1996, using a behavioral questionnaire developed by the author. The study demonstrated the prevalence of common behavioral problems as followed: eating problems (35.3%), emotional problems (27.7%), temper tantrums (25.8%), hyperactivity (24.7%), and aggressive behavior (21.7%)⁽¹²⁾. The other study conducted in 1986 showed that 34.9% of children aged 4 – 6 years old had psychosocial problems⁽¹³⁾. Relatively high prevalence was reported in both studies. Presently, there has been no study performed in relation to factors associated with preschool behavioral and emotional problems.

Therefore, the objective of the present study was to assess the prevalence of behavioral and emotional problems, and their associated factors in Thai

preschoolers, which may allow early identification and socio-cultural specific preventive intervention.

Material and Method

The present study was approved by the Siriraj Institutional Review Board (COA no. Si 424/2014, SIRB 362/2557-EC3). Three public kindergarten/primary schools in Bangkok were randomly drawn to participate in the study. Recruitment of subjects and data collection took place at the participating schools from August to October 2014. The principals and teachers of the participating schools received a complete description of the study. The teachers were asked to give all the parents of children aged 4- to 6-years-old a letter of invitation describing participant informations, together with a form of informed and voluntary consent to participate in the study and research questionnaires. If the parents agreed to participate, they subsequently gave written consent, answered the SDQ for 4- to 12-years-old children, Thai version, and provided the information in relation to demographic data and current child rearing problems.

The SDQ is a brief 25-item behavioral screening instrument that can be administered to parents and teachers of children aged 4- to 16-years-old and to 11- to 16-years-old themselves⁽¹⁴⁾. The SDQ comprises of five subscales measuring hyperactivity/inattention, conduct problems, emotional symptoms, peer problems, and prosocial behaviors, the only subscale that measures children's positive behavioral attributes. The sum of four problem scores represent a total difficulties score (TDS) with a cut-off indicating 'clinical range' at the 90th percentile. Therefore, children who have significant emotional/behavioral symptoms to obtain the TDS above the cut-off are at risk of having psychiatric disorder. There is also cut-off each subscale scores to identify cases at risk of having mental disorders relevant to the each emotional/behavioral symptom. Its free availability and good psychometric properties are demonstrated in several studies resulting in widespread use of the SDQ as a screening tool in different settings in many countries⁽¹⁵⁾. The study of the normative data and psychometric properties of the SDQ-Thai version in a large and representative nationwide sample has shown satisfactory reliability⁽¹⁶⁾.

Demographic variables related to the children's emotional and behavioral problems were gathered. These included parents' education and marital status,

Table 1. Characteristics of parents and families

Characteristics	Number	Percent
Main caregiver (n = 457)		
Father/mother	406	88.8
Other	51	11.2
Caregiver education (n = 451)		
Elementary school	41	9.1
High school	126	27.8
Bachelor degree	260	57.5
Master degree or higher	24	5.3
Number of children (n = 458)		
1	162	35.4
>1	296	64.6
Order of sibling (n = 455)		
First	257	56.5
Second or more	198	43.5
Marital status of parent (n = 462)		
Married	370	80.1
Separated	60	13.0
Divorced	26	5.6
Widowed	6	1.3
Income/month (n = 460)		
<5,000	7	1.5
5,000–10,000	84	18.3
10,001–30,000	225	48.9
30,001–50,000	100	21.7
>50,000	44	9.6

number of children in the family, family income, and various family stressors^(10,11,17). Items of common child rearing and behavioral problems not asked by SDQ were displayed in a checklist. Parents were asked to indicate the problem items they concerned about their children which included eating, sleep and elimination difficulties; sibling rivalry, and different developmental and learning problems.

Of the 870 families invited, 630 (72.4%) agreed to participate and returned the completed questionnaires to the teachers. Of 630 questionnaires returned, 463 (73.5%) had sufficient information for analysis. Data analysis was carried out using SPSS software. Univariate frequencies of categorical data and means (\pm SD) of continuous variables were displayed. Chi-

square test and binary logistic regression were used to examine the association between sociodemographic variables and behavioral/emotional problems, and the relationships were expressed in odds ratio.

Results

The sociodemographic characteristics of the children and parents were shown in Table 1. The majority of the primary caregivers who responded to the questionnaires were married parents who had more than one child in the family. Most of them had a bachelor degree and a monthly income between 10,000 and 30,000 Baht. 73.4% of the children were kindergartens. Others were first grade students (22.7%) and pre-kindergartens (3.9%).

Table 2. Parental concerned problems

Problems	Number (n = 463)	Percent
Eating problem	156	33.6
Sleep problem	58	12.5
Enuresis	60	13.0
Encopresis	22	4.7
Language problem	60	13.0
Gross motor problem	15	3.2
Fine motor problem	14	3.0
Social problem	17	3.7
Self help problem	18	3.9
Learning problem	40	8.6
Repetitive behavior	77	16.6
Child rearing problem	106	22.9
TV/Game addict	134	28.9
Hyperactivity	8	1.6
Other	29	6.3

Table 3. SDQ scores analysis

Dependent variables	Behavior problems n (%)		Scores			
			Normal group		Risk group	
	Normal	Risk	Range	Mean	Range	Mean
Total	408 (88.1)	55 (11.9)	0-15	8.3 (\pm 3.5)	16-25	18.8 (\pm 2.5)
Emotion	408 (88.1)	55 (11.9)	0-3	1.1 (\pm 1.1)	4-10	5.3 (\pm 1.5)
Conduct	419 (90.5)	44 (9.5)	0-3	1.3 (\pm 0.9)	4-8	4.8 (\pm 1.1)
Hyperactivity	352 (76.0)	111 (24.0)	0-5	2.7 (\pm 1.6)	6-10	7.1 (\pm 1.3)
Peer	446 (96.3)	17 (3.7)	0-5	2.4 (\pm 1.4)	6-9	6.6 (\pm 0.9)
Prosocial	411 (88.8)	52 (11.2)	5-10	7.4 (\pm 1.6)	0-4	3.2 (\pm 1.0)

When items of common behavioral and developmental problems provided, most parents (75%) reported that they concerned about their children behaviors. Table 2 showed the rates of each problem with the three most common behavioral problems being: (1) eating difficulties, (2) Game/TV addiction and (3) sibling rivalry. Other problems identified were repetitive behaviors, enuresis, language problems, sleep problems, and learning problems. Among the reporting caregivers only 18.1% sought consultation with professionals. Of the 48.8% consulting physicians were pediatricians, 26.2% were general practitioners and 20.2% were child psychiatrists.

Table 3 presented numbers and percentages of children having the TDS and subscale scores within normal and clinical range (risk group). Mean scores (\pm SD) of children in both groups, together with the lowest and the highest scores of children in the risk group were also displayed. Of the 408 children who had complete data on all four problem subscales, 55 (11.9%) had the TDS in clinical ranges and subsequently were cases at risk of having psychiatric disorders. From the subscale scores analysis, a substantial number of children (24%) were at risk of having ADHD. In contrast to difficulty-based report, children's strength, the prosocial behavior, was also identified in

Table 4. Association between behavior problems and risk factors in family

Dependent variables	Behavior problems		χ^2	p-value	OR	95% CI
	n (%)					
	Normal (n = 408)	Risk (n = 55)				
Parental divorce						
No	388 (83.8%)	47 (10.2%)				
Yes	20 (4.3%)	8 (1.7%)	7.933	0.005*	3.302	1.378 to 7.914
Death in family						
No	363 (78.4%)	52 (11.2%)				
Yes	45 (9.7%)	3 (0.6%)	1.621	0.203	0.465	0.140 to 1.552
Change school/job problem						
No	324 (70.0%)	41 (8.9%)				
Yes	84 (18.1%)	14 (3.0%)	0.688	0.407	1.317	0.686 to 2.529
Conflict in family						
No	387 (83.6%)	48 (10.4%)				
Yes	21 (4.5%)	7 (1.5%)	4.901	0.027*	2.688	1.086 to 6.653
Child health problem						
No	381 (82.3%)	47 (10.2%)				
Yes	27 (5.8%)	8 (1.7%)	4.359	0.037*	2.402	1.032 to 5.592
Parental health problem						
No	385 (83.2%)	47 (10.2%)				
Yes	23 (5.0%)	8 (1.7%)	6.157	0.013*	2.849	1.206 to 6.730
Chronic illness in family						
No	393 (84.9%)	46 (9.9%)				
Yes	15 (3.2%)	9 (1.9%)	15.873	<0.001*	5.126	2.124 to 12.371
Financial problem (n = 407)						
No	259 (56.1%)	32 (6.9%)				
Yes	148 (32.0%)	23 (5.0%)	0.618	0.432	1.258	0.709 to 2.230

*significant ($p < 0.05$)

the majority of the subjects with the prosocial scores within the normal range (88.8%). Moreover, 65% of children were reported having all scales score within the normal range.

When examining which of the sociodemographic characteristics and family stressors were related to the behavioral and emotional problems identified by the TDS, these associated factors included parental divorce (OR = 3.3 [95% CI, 1.4-7.9]), severe conflicts in family (OR = 2.7 [95% CI, 1.1-6.6]), parent and child health problems (OR = 2.8 [95% CI, 1.2-6.7] and 2.4

[95% CI, 1.0-5.6], respectively), and chronic illness of family members (OR = 5.13 [95% CI, 2.1-12.4]) as shown in Table 4.

Discussion

The prevalence of preschool behavioral and emotional problems at 11.9% was in line with other international studies. The present project might be the first study in Thailand using the standard checklist measure in preschoolers. In 2005, the previous only epidemiological study using SDQ was conducted in

5-to 16-year-olds Thai children with the prevalence of behavioral and emotional problems at 20.1%⁽¹⁶⁾.

Early detection and intervention may prevent such an increase in rates of psychopathology in later childhood. Among the five areas of difficulties, hyperactivity was the most prevalent, unlike the rates of hyperactive symptoms reported by subjective parental concerns. Only 1.6% of parents concerned about their children being hyperactive. It is interesting that significant hyperactive symptoms rated by SDQ did not concern most parents. These contrasting results showed the importance of the impact of the problems on parents and families. In addition, hyperactivity in most kindergarten classes is well tolerated and underestimated.

In Thailand, eating difficulty has long been the most concerned problem reported by parents in both the previous and the present study. This is not the case in western societies where parents reported eating and feeding problems only in very young age group such as infants and toddlers. Culture issues and parental values: chubby being a symbol of healthy, and satisfaction with parental nurturing role may be in play here. The previous study also implied the inadequate parental education in relation to developmental appropriate eating behavior and normal growth rates that affects children's intake and healthy eating habits. Since eating problems involve both nutrition and relationship issues, it should be further investigated in the future. Other common behavioral problems were TV/Games addiction and sibling rivalry which usually found in typical child development. Both problems related to child rearing or parenting practices that should be raised awareness in clinicians to give timely and informative anticipatory guidance.

In the present study, divorce, family conflict and health problems in the family were factors associated with preschool behavioral and emotional problems. Unlike many other studies that low parental education and poverty were among the strongest risks of childhood behavioral and emotional problems^(10,17,18). The underlying reason may be related to the distribution of the samples: most parents in the present study were from middle class families with degree-graduate education and average monthly income.

Conclusion

Preschool behavioral and emotional problems in Thailand are common and diverse, which parents often

reported more behavioral problems than the emotional ones. Identification of certain risk factors can imply early intervention aiming at reducing exposure to psychosocial adversity in early years. Significant risk factors included parents divorce, severe family conflicts, and health problems of child, parents and family members. Screening of mental health problems in children at risks is a standard of care, and cost-effectiveness can be achieved by given early intervention is a key. Both parental concerns and standard questionnaires are needed for effective screening. The implication should also be endorsed in policies to improve qualities of the well child cares in Thailand.

What is already known on this topic?

Behavioral and emotional problems are common in preschool children. The prevalence was reportedly around 7% - 25%. Previous studies showed the increase of behavioral and emotional problems in young children worldwide. In Thailand, epidemiological data of preschool behavioral and emotional problems are limited. There were only two studies describing preschool behavioral problems, which published several years ago in 1987 and 1999. Both studies showed relatively high prevalence of preschool behavioral problems. However, there has been no study performed in relation to factors associated with preschool emotional/behavior problems in Thailand.

What this study adds?

This project is the first study in Thailand using a standard checklist measure in preschoolers. The prevalence of preschool emotional and behavioral problems at 11.9% was in line with other international studies. In this study, divorce, family conflict and health problems in the family were factors associated with psychosocial problems. Determining profiles of emotional and behavioral problems and their associated factors among Thai preschool children, may allow early identification and socio-cultural specific preventive intervention. Screening of mental health problems in children at risk is a standard of care. The well child visits are among important opportunities to address psychosocial concerns.

Limitation

The present study involved subjects living in specific area of Bangkok, therefore it may not repre-

sent various characteristics of different population. Different characteristic of samples and various methods of giving information will be required for more generalization.

Acknowledgement

The present research was supported by the Research Development Fund, Faculty of Medicine, Siriraj Hospital.

Potential conflicts of interest

None.

References

1. Horwitz SM, Leaf PJ, Leventhal JM, Forsyth B, Speechley KN. Identification and management of psychosocial and developmental problems in community-based, primary care pediatric practices. *Pediatrics* 1992; 89: 480-5.
2. Kelleher KJ, McNerny TK, Gardner WP, Childs GE, Wasserman RC. Increasing identification of psychosocial problems: 1979-1996. *Pediatrics* 2000; 105: 1313-21.
3. American Academy of Pediatrics. The new morbidity revisited: a renewed commitment to the psychosocial aspects of pediatric care. Committee on Psychosocial Aspects of Child and Family Health. *Pediatrics* 2001; 108: 1227-30.
4. Weitzman C, Wegner L. Promoting optimal development: screening for behavioral and emotional problems. *Pediatrics* 2015; 135: 384-95.
5. Egger HL, Angold A. Common emotional and behavioral disorders in preschool children: presentation, nosology, and epidemiology. *J Child Psychol Psychiatry* 2006; 47: 313-37.
6. Egger HL, Erkanli A, Keeler G, Potts E, Walter BK, Angold A. Test-Retest Reliability of the Preschool Age Psychiatric Assessment (PAPA). *J Am Acad Child Adolesc Psychiatry* 2006; 45: 538-49.
7. Lavigne JV, Gibbons RD, Christoffel KK, Arend R, Rosenbaum D, Binns H, et al. Prevalence rates and correlates of psychiatric disorders among preschool children. *J Am Acad Child Adolesc Psychiatry* 1996; 35: 204-14.
8. Wilens TE, Biederman J, Brown S, Monuteaux M, Prince J, Spencer TJ. Patterns of psychopathology and dysfunction in clinically referred preschoolers. *J Dev Behav Pediatr* 2002; 23: S31-S36.
9. Qi CH, Kaiser AP. Behavior problems of preschool children from low-income families: review of the literature. *Top Early Child Spec Educ* 2003; 23: 188-216.
10. Richman N. Behaviour problems in pre-school children: family and social factors. *Br J Psychiatry* 1977; 131: 523-7.
11. Beautrais AL, Fergusson DM, Shannon FT. Family life events and behavioral problems in pre-school-aged children. *Pediatrics* 1982; 70: 774-9.
12. Kolkijkovin V. Common behavioral problems in preschool children: a study of community in the northern Bangkok. *J Psychiatr Assoc Thai* 1999; 44: 228-38.
13. Meksupa O, Otrakul A, Srisorrachatr S. Prevalence of mental problem in Bangkok. *J Psychiatr Assoc Thai* 1987; 32: 97-110.
14. Goodman R. Psychometric properties of the strengths and difficulties questionnaire. *J Am Acad Child Adolesc Psychiatry* 2001; 40: 1337-45.
15. Stone LL, Otten R, Engels RC, Vermulst AA, Janssens JM. Psychometric properties of the parent and teacher versions of the strengths and difficulties questionnaire for 4- to 12-year-olds: a review. *Clin Child Fam Psychol Rev* 2010; 13: 254-74.
16. Woener W, Nuanmanee S, Becker A, Wongpiromsarn Y, Mongkol A. Normative data and psychometric properties of the Thai version of the strengths and difficulties questionnaire (SDQ). *J Ment Health Thai* 2011; 19: 43-57.
17. Keenan K, Wakschlag LS. More than the terrible twos: the nature and severity of behavior problems in clinic-referred preschool children. *J Abnorm Child Psychol* 2000; 28: 33-46.
18. Holtz CA, Fox RA, Meurer JR. Incidence of behavior problems in toddlers and preschool children from families living in poverty. *J Psychol* 2015; 149: 161-74.

ความชุกและปัจจัยที่มีความสัมพันธ์กับการเกิดปัญหาพฤติกรรมและอารมณ์ของเด็กก่อนวัยเรียนในกรุงเทพมหานคร

สินีนาด ทีนวานิช, ศศิธร จันทรทิน, สุดารัตน์ สิริศักดิ์พาณิชย์, จริญญา ทะรักษา

ภูมิหลัง: ปัจจัยเสี่ยงด้านชีวภาพและสิ่งแวดล้อมสามารถส่งผลทำให้เกิดปัญหาพฤติกรรมและอารมณ์และโรคทางจิตเวชได้หากไม่ได้รับการแก้ไขแต่แรก ความชุกของปัญหาพฤติกรรมและอารมณ์ในเด็กวัยก่อนเรียนเพิ่มมากขึ้นทั่วโลก แต่ในประเทศไทยยังมีข้อมูลในเรื่องนี้จำกัด

วัตถุประสงค์: เพื่อศึกษาความชุกและปัจจัยที่มีความสัมพันธ์กับการเกิดปัญหาพฤติกรรมและอารมณ์ของเด็กวัยก่อนเรียน

วัสดุและวิธีการ: เป็นการศึกษาแบบ descriptive, cross sectional study ในเด็กอายุ 4-6 ปี จากโรงเรียนในกรุงเทพมหานคร จำนวน 463 ราย โดยให้ผู้ปกครองตอบแบบสอบถามข้อมูลทั่วไป ปัจจัยเสี่ยงต่างๆ และแบบประเมินปัญหาพฤติกรรมและอารมณ์ในเด็กโดยใช้แบบประเมิน Strengths and Difficulties Questionnaire (SDQ) การวิเคราะห์ข้อมูลใช้สถิติแบบพรรณนา, Chi-square และ Binary logistic regression

ผลการศึกษา: ปัญหาพฤติกรรมและอารมณ์ที่พบบ่อย 3 อันดับแรก ได้แก่ ปัญหาการกิน (33.6%), ปัญหาติดเกมส์/โทรทัศน์ (28.9%) และปัญหาพี่น้องอิจฉากัน (22.9%) จากแบบประเมิน SDQ พบว่าความชุกของปัญหาพฤติกรรมและอารมณ์ในภาพรวมเท่ากับ 11.9% โดยพบความชุกของปัญหาที่แบ่งเป็น 5 ด้าน ได้แก่ ปัญหาพฤติกรรมอยู่ไม่นิ่ง/สมาธิสั้น 24%, ปัญหาอารมณ์ 11.9%, ปัญหาด้านสัมพันธ์ทางสังคม 11.2%, พฤติกรรมเกร 9.5%, และปัญหาความสัมพันธ์กับเพื่อน 3.7% ปัจจัยที่สัมพันธ์กับปัญหาพฤติกรรมและอารมณ์ของเด็กวัยก่อนเรียน ได้แก่ ปัญหาการหย่าร้างของบิดามารดา (OR = 3.3 [95% CI, 1.4-7.9]), ปัญหาความขัดแย้งรุนแรงในครอบครัว (OR = 2.7 [95% CI, 1.1-6.6]), ปัญหาสุขภาพของบิดามารดาและเด็ก (OR = 2.8 [95% CI, 1.2-6.7]) และ 2.4 [95% CI, 1.0-5.6]) และปัญหาการเจ็บป่วยเรื้อรังของสมาชิกในครอบครัว (OR = 5.13 [95% CI, 2.1-12.4]).

สรุป: ปัญหาพฤติกรรมและอารมณ์เป็นปัญหาที่พบบ่อยในเด็กก่อนวัยเรียน โดยพบว่าผู้ปกครองจะรายงานปัญหาด้านพฤติกรรมของเด็กซึ่งเห็นได้ชัดเจนมากกว่าปัญหาทางอารมณ์ การศึกษานี้พบปัจจัยที่มีความสัมพันธ์ต่อการเกิดปัญหาพฤติกรรมและอารมณ์ของเด็กก่อนวัยเรียนหลายปัจจัย ซึ่งจะเป็นประโยชน์ในการวางแผนการช่วยเหลือเด็กและครอบครัวเพื่อป้องกันการเกิดปัญหาหรือโรคทางจิตเวชในอนาคต
