ความสัมพันธ์ระหว่างการกำกับอารมณ์ของเด็ก สุขภาวะทางจิตของเด็ก และสมรรถนะในการเลี้ยงดูบุตรของผู้ปกครอง ในเด็กประถมวัยในกรุงเทพมหานคร

พิมพ์ประพันธ์ อุไรกุล*, **ปริชวัน จันทร์ศิริ***, **จิรดา ประสาทพรศิริโชค***
**ภาควิชาจิตเวชศาสตร์ คณะแพทยศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย*

บทคัดย่อ

วัตถุประสงค์ การศึกษานี้มีวัตถุประสงค์เพื่อศึกษาความสัมพันธ์ระหว่างการกำกับอารมณ์ของเด็ก สมรรถนะในการเลี้ยงดูบุตรของผู้ปกครอง และสุขภาวะทางจิตของเด็กอายุ 8 - 12 ปี ณ โรงเรียนแห่งหนึ่งในกรุงเทพมหานคร

วิธีการศึกษา การศึกษาแบบภาคตัดขวางนี้ ศึกษาในโรงเรียนสาธิตแห่งหนึ่งในกรุงเทพมหานคร ระหว่างเดือนมีนาคม ถึงเดือนพฤษภาคม 2566 โดยใช้แบบสอบถามไม่ระบุตัวตน ประกอบด้วยข้อมูลทั่วไป แบบวัดการกำกับอารมณ์ในเด็ก (ERQ-CA/HIF) แบบประเมินจุดแข็งและจุดอ่อนทั้งฉบับเด็กประเมินตนเองและฉบับผู้ปกครองประเมิน (SDQ) และแบบวัดการรับรู้สมรรถนะในการเป็นบิดามารดา (PSOC) โดยเด็กนักเรียนอายุ 8 - 12 ปี กับผู้ดูแลหลักทั้งหมดถูกคัดเข้า จากนั้นเด็กที่มีโรคกลุ่มความผิดปกติทางพัฒนาการและระบบประสาท หรือมีข้อจำกัดด้านการอ่านเขียน ถูกคัดออกจากการศึกษา ผู้ดูแลที่มีโรคประจำตัวทางจิตเวชก็ถูกคัดออกเช่นกัน โดยคำนวณทางสถิติเพื่อหาความสัมพันธ์ระหว่างตัวแปรต่างๆ ด้วย Pearson's correlation และเปรียบเทียบความแตกต่างระหว่างกลุ่มที่มีลักษณะแตกต่างกันด้วย dependent T-test, independent T-test และ one-way ANOVA การศึกษานี้ได้รับการอนุมัติจากคณะกรรมการจริยธรรมฯ เรียบร้อยแล้ว

ผลการศึกษา เด็กและผู้ปกครองจำนวนทั้งสิ้น 306 คู่ ผ่านเกณฑ์เข้าร่วมวิจัย อายุเฉลี่ยของเด็กและผู้ปกครองคือ 9.8 และ 44.9 ตามลำดับ ผู้เข้าร่วมวิจัยส่วนใหญ่มีรายได้ครอบครัวต่อเดือน และระดับการศึกษาของผู้ปกครองอยู่ในระดับสูง การศึกษาวิจัยนี้ไม่พบความสัมพันธ์ระหว่างการกำกับอารมณ์ของเด็กกับการรับรู้สมรรถนะในการเลี้ยงดูบุตรของผู้ปกครอง แต่พบความสัมพันธ์ทางลบระดับต่ำถึงปานกลาง ระหว่างการกำกับอารมณ์ของเด็กกับปัญหาสุขภาวะทางจิตทุกด้าน ทั้งฉบับเด็กประเมินตนเองและผู้ปกครองประเมิน (r = -.19 ถึง -.31) อารมณ์ทางลบของเด็กกับสมรรถนะในการเลี้ยงดูบุตร (r = -.16 ถึง -.19) และสมรรถนะในการเลี้ยงดูบุตรกับปัญหาสุขภาวะทางจิตฉบับผู้ปกครองประเมิน (r = -.12 ถึง -.29) นอกจากนี้ยังพบความสัมพันธ์ทางบวกระดับต่ำถึงปานกลาง ระหว่างอารมณ์ทางบวกกับพฤติกรรมดีทางสังคม (r = .12 ถึง .24) ในส่วนของอารมณ์ทางลบนั้นมีความสัมพันธ์ทางบวกกับปัญหาสุขภาวะทางจิตระดับปานกลางในด้านอารมณ์ (r = .62) และระดับต่ำในด้านอื่นๆ (r = .23 ถึง .30)

สรุป การศึกษาวิจัยนี้พบความสัมพันธ์ระหว่างการกำกับอารมณ์ของเด็กกับสุขภาวะทางจิตของเด็ก ในขณะที่การรับรู้สมรรถนะในการเป็นบิดามารดาก็สัมพันธ์กับสุขภาวะทางจิตของเด็กเช่นกัน โดยเฉพาะด้านพฤติกรรมดีทางสังคมและปัญหาสมาธิ การศึกษาวิจัยนี้ไม่พบความสัมพันธ์ระหว่างการกำกับอารมณ์ของเด็กกับการรับรู้สมรรถนะในการเป็นบิดามารดา ซึ่งเป็นที่น่าสงสัยว่าผู้ปกครองตระหนักถึงอิทธิพลของตนเองต่อการกำกับอารมณ์ของเด็กหรือไม่ การศึกษานี้มีข้อจำกัดหลายประการด้านระเบียบวิธีวิจัยและการขยายผล โดยได้มีการแนะนำแนวทางสำหรับการศึกษาวิจัยต่อในอนาคตไว้แล้ว

คำสำคัญ การกำกับอารมณ์ สมรรถนะในการเลี้ยงดูบุตร สุขภาวะทางจิตในเด็ก ปัญหาสุขภาพจิต

Corresponding author: ปริชวัน จันทร์ศิริ
โรงพยาบาลจุฬาลงกรณ์ สภากาชาดไทย
E-mail: parichawan.C@chula.ac.th
วันรับ : 7 มกราคม 2567 วันแก้ไข : 7 มีนาคม 2567 วันตอบรับ : 21 มีนาคม 2567

The Association Between Child Emotion Regulation, Child Mental Health Status, and Parental Competence in School-Aged Children in Bangkok, Thailand

Pimprapan Ooraikul*, Parichawan Chandarasiri*, Jirada Prasartpornsirichoke*
*Department of Psychiatry, Faculty of Medicine, Chulalongkorn University

ABSTRACT

Objective: This study aimed to examine the relationship between child emotion regulation, child mental health status, and parental competence in non-clinical 8 to 12-year-old children in a school in Bangkok, Thailand.

Methods: This cross-sectional study was conducted in a demonstrative school in Bangkok from March to May 2023 using an anonymous survey. Measurements consisted of demographic data, ERQ-CA/HIF for child emotion regulation, self-rated and parent-rated SDQ for child mental health status, and PSOC for parental competence. All available children aged 8-12 years and their primary caregivers were included, then children with neurodevelopmental disorder(s) and academic disadvantages were excluded. Parents with major psychiatric disorder(s) were also excluded. Informed consent was given, and ethical approval was granted. The relationship between factors was analyzed using Pearson's correlation. Dependent T-test, independent T-test, and one-way ANOVA were used to compare groups with different demographics.

Results: A total of 306 child-parent dyads were eligible for the study. The mean age of the children and the parents were 9.8 and 44.9 years respectively. Most of the participants had high household income and high parental education. No association between child emotion regulation and parental competence was found. However, there were weak to moderate negative associations between child emotion regulation and all psychological symptoms (r = -.19 to -.31); negative emotions and parental competence (r = -.16 to -.19); and parental competence and parent-rated psychological symptoms (r = -.12 to -.29). Weak to moderate positive associations between child emotion regulation and prosocial behaviors (r = .12 to .24) were also found, whereas negative emotions were moderately associated with emotional problems (r = .62), and weakly with all other psychological symptoms (r = .23 to .30).

Conclusion: This study found that emotion regulation is positively associated with prosocial behavior and negatively associated with mental health problems, while parental competence is associated with child's mental health outcomes, particularly prosocial behaviors and attention problems. However, no association between child emotion regulation and parental competence was found which raised an urgent question of whether parents realize their important role in coaching their child's emotion regulation. There were several limitations. More research is needed to better understand the relationship between emotion regulation, mental health, and perceived parental competence in Thai culture, with improvements for the future as suggested.

Keywords: emotion regulation, children mental health, child psychological symptoms, parental competence, parent self-efficacy

Corresponding author: Parichawan Chandarasiri
E-mail: parichawan.C@chula.ac.th
Received 7 January 2024 Revised 7 March 2024 Accepted 21 March 2024

INTRODUCTION

A person's mental health is influenced by individual biological factors, psychological factors, family, culture, and social constructs that change over time.[1] One of the key determinants of mental health is emotional regulation (ER). ER is commonly defined as the process by which individuals influence the experience of their emotions, both positive and negative.[2] Research on ER and adult psychopathology has shown certain correlations, indicating that ER is a transdiagnostic factor for several mental disorders and a protective factor against psychopathology.[3,4] Similar patterns were observed in studies conducted on children and adolescents.[5,6]

There is a rigorous body of research on ER during the infant through preschool years. Infant temperament, mother-child dyadic interaction, and attachment are acknowledged as fundamental components for emotion development and regulation in the early years of life. However, there is still a knowledge gap in post-early childhood,[7] the period when cognitive control and awareness of emotion emerge as the neural pathway between prefrontal cortex and amygdala continues to mature.[8] It is also the time when other environmental factors start to influence the development of emotion,[9] and thus alter the child-parent dynamic.

The overall quality of this child-parent dynamic interaction can be reflected by the parent's evaluation of their own abilities in caregiving, namely "perceived parental competence". [10] Child characteristics, emotional and behavioral problems, influence perceived parental competence.[11-13] For example, externalizing problems of children could predict parental competence,[14] and predict a lower level of parental support,[15] which in turn modify the child's ER. On the other hand, if they felt competent, mothers engaged more in positive parenting,[16] even those with depression.[17] In summary, perceived parental competence is intertwined with parent-child relationship and child outcomes.[18,19] In addition to ensuring physical comfort and encouraging academic success, parents also play an enormous part in coaching their child's emotions, usually without consciously knowing. Whether perceived parental competence is correlated with child's ER is yet to be examined.

Investigating mental health-related issues needs to consider the importance of culture. The majority of empirical research on ER was conducted in western countries,[20,21] however, appropriate emotional responses and social behaviors vary. For example, collectivistic cultures like those in Asia typically discourage the expression of emotions to maintain harmony.[22-24] Thailand is also classified as collectivism, implying that Thai people value conformity over individualism.[25,26] In Thailand, there are very few studies on ER and their correlation with mental health in adult, and even fewer in children and adolescents. Most studies on children ER in Thailand to date are experimental studies focusing on the efficacy of interventions for children with mental health problems, and others mainly focused on either preschoolers or adolescents.[27-32]

In this study, we aimed to investigate the relationship between child's ER, child's psychological symptoms, and parental competence in non-clinical school-aged children. If child's ER is correlated with perceived parental competence, it might be helpful to explore further on their causal relationship to design preventive programs or policies promoting children's mental health in the future. And if they are indeed unconnected, further inspection to explain why it is so might be needed.

METHODS

This is a cross-sectional study collecting data during March - May 2023, using a questionnaire survey as a tool, from child-parent dyads in a demonstrative school located in Bangkok, Thailand. All participants, both students and parents, provided their informed assent and consent before handing back the answers. This study followed the Declaration of Helsinki. Ethical approval was granted by the Institutional Review Board of the Faculty of Medicine, Chulalongkorn University, Bangkok, Thailand (IRB Number 0683/65, COA Number 1607/2022).

Participants

There are two major types of schools in Thailand: public and private schools. Most of the students are in public schools which include government and demonstrative schools. Demonstrative schools usually have a screening system for children with neurodevelopmental and psychiatric disorders while disordered students in government schools are more likely to remain undetected which would not be ideal for our study design. Due to limited resources, this study was carried out in only one school well situated for the researchers.

The inclusion criteria included: (1) children aged 8 to 12 years old; (2) children whose participating parent is legally responsible; and (3) children whose participating parent is the primary caregiver, for example, those who spend time regularly with the child, or are together with the child for more than 2 years.

The exclusion criteria were: (1) children with any kind of neurodevelopment disorder(s) such as intellectual disability, learning disorder, autistic spectrum disorder, and attention-deficit hyperactivity disorder; (2) children who can neither read nor write Thai as well as their academic year requirement; (3) parents with a diagnosis of major psychiatric disorder(s) such as major depressive disorder, bipolar disorder, and schizophrenia; and (4) participants who did not answer a major part of the questionnaire or did not answer the questions that determine eligibility to be included in the study.

We obtained permission from the school before conducting the survey. The calculated sample size was 270 using the Taro Yamane formula [$n = N/1 + Ne^2$], given that the estimated population (N) was 840 and error margin (e) was 0.05. To prevent anticipated errors in data collection, the calculated sample size was increased by 10% to 297. Furthermore, the estimated response rate was 30-40%, so we intended to collect the data from every classroom that had children who met the inclusion criteria rather by than randomization. A researcher visited the school in person to describe the details to the students before handing out the anonymous survey. Since some classrooms were not available at that time, only 660 questionnaires were launched.

Demographic Data

Demographic data of children, including age, sex, underlying conditions and educational limitations was provided by their parents. The parent's data consisted of age, sex, parental role, marital status, educational degree, monthly household income range, legal responsibility for the child, time spent with the child, and parental psychiatric history. Marital status and monthly household income was included because they are possible confounders of parental competence.

Emotion Regulation

ER was measured using How I Feel: A Self-Report Measure of Emotional Arousal and Regulation for Children (HIF) and a part of Emotion Regulation Questionnaire for Children and Adolescents (ERQ-CA). HIF measures positive and negative emotional arousal and the ability to regulate those emotions.[33] There is evidence that the questionnaire is reliable and valid (Cronbach's Alpha values for the 3 subscales are .82, .86, and .77) across age 8 - 12, regardless of the level of schooling, sex, and different ethnicities and socioeconomic statuses.[5,34] ERQ-CA was adapted from the adult Emotion Regulation Questionnaire[35] for children aged 9 - 12,[36] measuring the use of cognitive reappraisal, an adaptive ER strategy flourishing in middle childhood.

They were translated to Thai and adjusted as one tool, ERQ-CA/HIF, by Duangporn Kittisunthorn.[30] Honorary specialists have inspected the linguistic components and deemed suitable for school-aged children. It was tried out for preliminary inspection of tool quality in 100 students and analyzed for corrected item-total correlation (CITC). The Cronbach's Alpha Coefficient of the whole questionnaire is .874. The Cronbach's Alpha Coefficient of emotion regulation, positive emotions, negative emotions, and awareness of the ability to regulate are .810, .834, .887, and .895 respectively.

ERQ-CA/HIF was divided into four parts: (1) the use of cognitive reappraisal as ER; (2) the quality of positive emotions; (3) the quality of negative emotions; (4) the awareness of the ability to regulate emotions. Each question uses a five-point Likert scale. A higher score on each subscale represents a greater ER ability, a greater intensity and frequency of positive emotions and negative emotions, and a better awareness of their ER ability. This study used the first 3 parts in the analysis.

Children Mental Health

Children mental health status was evaluated by both the child and the parent using The Strength and Difficulties Questionnaire (SDQ),[37] translated to Thai by Panpimol Lortrakul et al. and publicly launched by Thailand's Ministry of Public Health and modified by Youngyud Wongpiromsarn et al,.[38] The Cronbach's Alpha Coefficient is .73. The SDQ consists of 25 items under five subscales of prosocial skills, emotional symptoms, behavioral problems, attention, and peer relationship. Emotion and relationship domains are considered internalizing symptoms while behavior and attention domains are considered externalizing. A higher score on prosocial skills reflects strength while a higher score on the remaining domains reflects difficulties. The categorical interpretation of the self-report version of this questionnaire was designed for children aged 10 and above, therefore, we used the raw scores in this study to give insight into how children evaluate themselves compared to the parents.

Parental Competence

This study used Parenting Sense of Competence scale (PSOC) which is one of the most commonly used tools for measuring parental competence/self-efficacy. Even though it was meant for parents of newborn children at first when presented by Gibaud-Wallston and Wandersman (1978) at the American Psychological Association, it was later adapted and tested for older children.[39] It has been validated in both normative and at-risk populations.[40,41] The Thai version was developed by Tatirat Suwansujarid who also launched a study for validation of this measurement in Thai fathers compared to Thai mothers.[42] There were 2 subscales which are skills/knowledge and perceived value/comfort. A higher total score suggests the parent's higher sense of competence. The Cronbach's Alpha Coefficient is .78

Statistical Analysis

Data were analyzed via SPSS version 28.0. Descriptive data of the participants were defined by number, percentage, mean, and standard deviation. The scoring of ERQ-CA/HIF, SDQ, and PSOC was presented in mean and standard deviation. Independent and dependent T-test, and one-way ANOVA were used to determine a significant mean difference between different demographic groups. Pearson's correlation was used to analyze the correlation between each continuous variable. Statistical significance was set at $P < .050$ (two-tailed). Missing data was dealt by imputing mean values of the item since the order of the questions in each measurement was not grouped together and the result showed normal distribution. There were 18 samples that had missing data of less than 5 items. When more than 5 items or an essential part of the data was missing, the candidate was excluded as depicted in Fig 1.

RESULTS

Fig 1 shows the flow chart of participant recruitment. The response rate was 47.7%. Among the 387 returned questionnaires, 17 did not meet inclusion criteria, 20 met exclusion criteria and 44 were missing a large part of the data so they were all discarded (20.9%).

Descriptive Characteristics

The mean age (standard deviation) of the child group and parent group was 9.8 (±1.23) and 44.9 (±6.29) respectively. 48.4% of the students were girls while the majority of the parents were mothers (74.8%). 25.2% of the parents were male and only one of them was uncle. Most of the participants had similar societal backgrounds, including high family income, high parental education, and married parents (see Table 1).

TABLE 1 Descriptive characteristics of the participants

Characteristics	n (%)
Child age (years)	
8	60 (19.6)
9	67 (21.9)
10	80 (26.1)
11	74 (24.2)
12	25 (8.2)
Grade	
Grade 3	85 (27.8)
Grade 4	66 (21.6)
Grade 5	85 (27.8)
Grade 6	70 (22.9)
Child sex	
Male	158 (51.6)
Female	148 (48.4)
Parent sex	
Male	77 (25.2)
Female	229 (74.8)
Parental relationship	
Father	76 (24.8)
Mother	229 (74.8)
Uncle	1 (0.3)
Parental education	
High school	3 (1.0)
Bachelor	107 (35.0)
Master	152 (49.7)
PhD	44 (14.4)
Monthly Household income (THB)	
Less than 20,000	4 (1.3)
20,000 - 44,000	37 (12.1)
44,000 - 68,000	45 (14.7)
68,000 - 96,000	56 (18.3)
More than 96,000	164 (53.6)
Marital status	
Married	284 (92.8)
Living separately	6 (2.0)
Divorced	10 (3.3)
Widowed	6 (2.0)

Correlation between Factors

The Pearson's correlation coefficients (r) of (-).80 to 1 is considered strong, (-).50 to .80 is considered moderate, and (-).20 to .50 is considered weak. The majority of the results fell under a weak to moderate degree, but we also include significant correlations ($P < .010$) that had coefficients below (-).20. Table 2 presents the mean scores (standard deviation) and correlations among emotion regulation (ERQ-CA/HIF), parental competence (PSOC), and children's mental health status (SDQ), which can be categorized in pairs as described below:

Child's emotion regulation and parental competence

No association between child's emotion regulation and perceived parental competence was found. However, the negative emotions subscale was negatively associated with perceived parenting skill (r = -.16) and perceived parenting value (r = -.19)

Child's emotion regulation and mental health

While ER was negatively associated with self-evaluated emotion, behavior, attention, and peer relationship problems (r = -.25, -.31, -.29, -.19 respectively) and positively associated with prosocial behaviors (r = .24), it was barely associated with only parent-rated prosocial behaviors and relationship problems (r = .12, -.11). Higher scores of positive emotions were associated with more prosocial behaviors (r = .23) and fewer emotion and relationship problems (r = -.13, -.15) Conversely, negative emotions were positively associated with the mentioned psychological domains (r = .62, .30, .26, .23) in self-report but not in parent's report.

Child's mental health and parental competence

All domains of child's mental health outcomes were associated with parental competence in parent's answers (r = -.12 to -.29). On the other hand, perceived parenting value was associated with the child's account of emotional problems (r = -.12), whereas perceived parenting skill was associated with prosocial behaviors (r= .12) and attention problems (r = -.17).

Comparison between Groups

Apart from the primary objective, we analyzed differences between child and parent reports of mental health status, as well as the influence of age and gender on children's ER and mental health. Children reported significantly higher SDQ difficulties and lower prosocial skill scores than parents ($P < .001$ in prosocial, emotion, behavior, and attention domains; $P = .010$ in peer relationship domain) as shown in Supplement 1.

Table 3 compares the scores of boys and girls. Girls were more aware of negative emotions ($P < .001$) and reported more emotional problems ($P < .001$). Parents of the boys rated a higher score on attention ($P < .001$) and behavioral problems ($P = .044$), but not the children themselves, while older children (Grade 5-6) reported lower ER ($P = .015$) and rated themselves as having more behavioral ($P = .002$), attention ($P = .004$), and peer relationship problems ($P = .014$), as presented in Table 4.

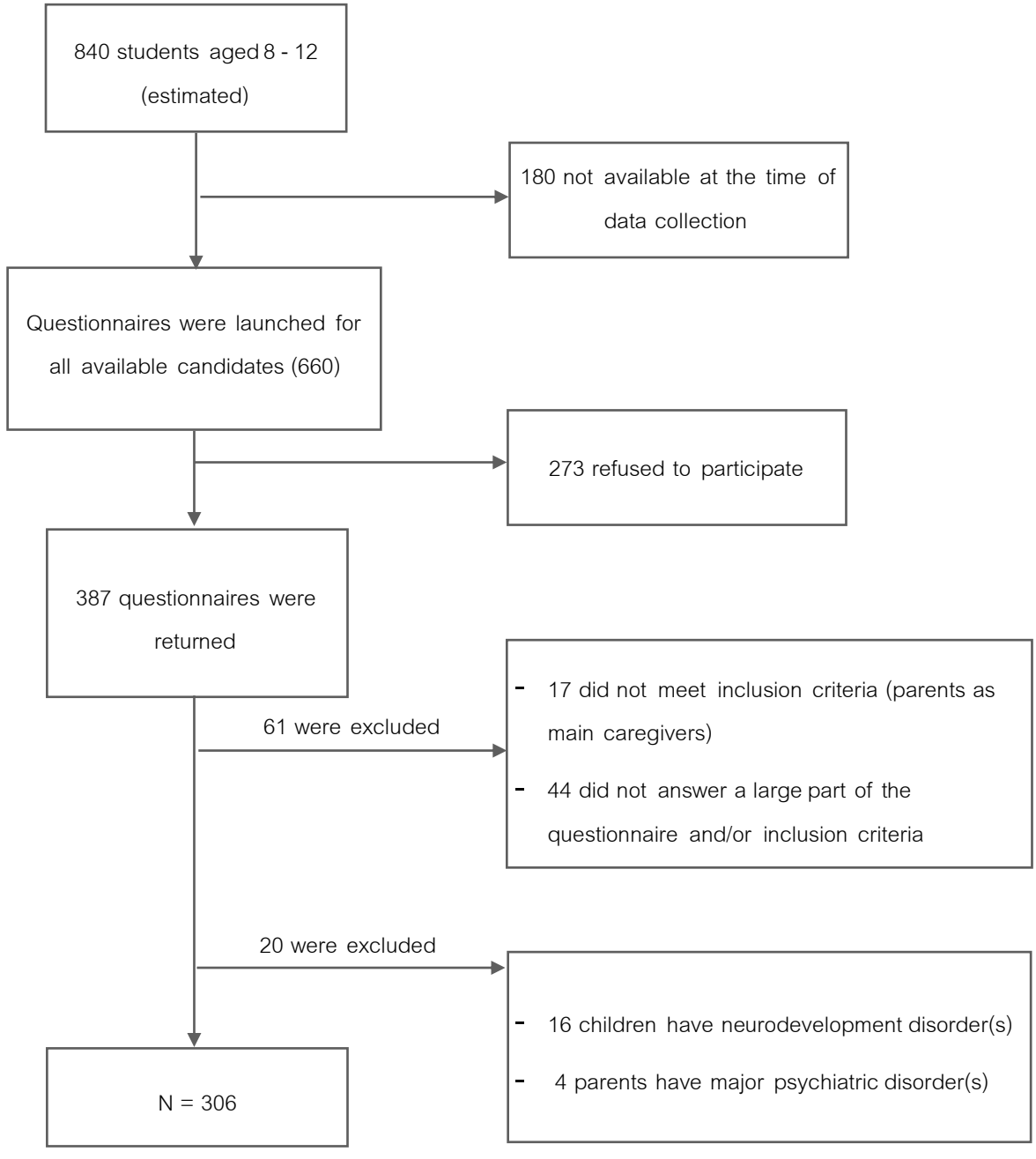

FIG 1 Flow chart of participant recruitment

TABLE 2 Mean scores and Pearson's correlations among variables

		Mean	S.D.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	ER	21.3	3.86	1														
2	PE	29.3	5.54	.41**	1													
3	NE	33.4	8.26	-.24**	-.04	1												
4	PSOC_Skill	37.0	5.14	.05	.06	-.16**	1											
5	PSOC_Value	39.4	6.70	.01	-.08	-.19**	.49**	1										
6	C_Prosocial	6.8	1.94	.24**	.23**	-.06	.12*	.00	1									
7	C_Emotion	3.3	2.52	-.25**	-.13*	.62**	-.10	-.12*	-.08	1								
8	C_Behavior	2.5	1.69	-.31**	-.10	.30**	-.06	-.06	-.27**	.21**	1							
9	C_Attention	3.2	2.30	-.29**	-.10	.26**	-.17**	-.10	-.22**	.29**	.39**	1						
10	C_Relationship	2.4	1.67	-.19**	-.15**	.23**	-.09	-.04	-.12*	.27**	.17**	.23**	1					
11	P_Prosocial	7.3	1.92	.12**	.10	-.04	.21**	.13*	.39**	-.03	-.17**	-.09	.03	1				
12	P_Emotion	1.7	1.79	-.03	-.07	.11	-.22**	-.26**	-.01	.39**	-.03	.01	.04	-.14*	1			
13	P_Behavior	1.3	1.04	-.10	-.09	.06	-.28**	-.29**	-.11	.01	.28**	.30**	.06	-.25**	.09	1		
14	P_Attention	2.5	2.22	-.07	.04	.32	-.22**	-.22**	-.04	-.03	.20**	.46**	.19**	-.22**	.13*	.41**	1	
15	P_Relationship	2.1	1.43	-.11*	-.08	.08	-.09	-.20**	-.01	.15*	.11*	.13*	.42**	-.09	.20**	.09	.20**	1

**. Correlation is significant at the 0.01 level (2-tailed). *. Correlation is significant at the 0.05 level (2-tailed).

Abbreviations: ER = Emotional regulation, PE = Positive emotions, NE = Negative emotions, PSOC_skill = Perceived parenting skill, PSOC_Value = Perceived parenting value, C_Prosocial = Child-rated prosocial behaviors, C_Emotion = Child-rated emotional problems, C_Behavior = Child-rated behavioral problems, C_Attention = Child-rated attention problems, C_Relationship = Child-rated relationship problems, P_Prosocial = Parent-rated prosocial behaviors, P_Emotion = Parent-rated emotional problems, P_Behavior = Parent-rated behavioral problems, P_Attention = Parent-rated attention problems, P_Relationship = Parent-rated relationship problems,

TABLE 3 Independent T-test comparing the differences that child's sex and age had on ERQ-CA/HIF and SDQ scores.

Outcome Variables		Boys Mean (S.D.)	Girls Mean (S.D.)	t	Mean diff.	*P*-value	Cohen's d	Grade 3-4 Mean (S.D.)	Grade 5-6 Mean (S.D.)	t	Mean diff.	P-value	Cohen's d
ERQ-CA/HIF													
ER		21.4 (4.05)	21.2 (3.67)	0.44	0.20	.660	3.87	21.9 (3.69)	20.8 (3.97)	2.45	1.07	.015*	3.83
PE		29.6 (5.70)	29.0 (5.38)	0.86	0.54	.390	5.55	29.8 (5.58)	28.8 (5.49)	1.40	0.88	.164	5.54
NE		31.8 (7.74)	35.0 (8.50)	-3.42	-3.17	<.001**	8.12	32.9 (8.09)	33.9 (8.42)	-1.10	-1.04	.270	8.26
SDQ													
Prosocial	Child-rated	6.7 (1.88)	6.9 (2.02)	-.74	-0.16	.460	1.94	6.9 (1.98)	6.7 (1.90)	1.01	0.22	.320	1.94
	Parent-rated	7.1 (1.86)	7.4 (1.97)	-1.40	-0.31	.160	1.91	7.4 (1.91)	7.1 (1.92)	1.23	0.27	.220	1.91
Emotion	Child-rated	2.8 (2.11)	3.8 (2.78)	-3.87	-1.10	< .001**	2.46	3.0 (2.43)	3.5 (2.58)	-1.68	-0.48	.090	2.51
	Parent-rated	1.6 (1.65)	1.8 (1.93)	-1.34	-0.27	.180	1.79	1.7 (1.78)	1.6 (1.80)	0.50	0.10	.620	1.79
Behavior	Child-rated	2.6 (1.80)	2.4 (1.55)	1.08	0.21	.280	1.69	2.2 (1.52)	2.8 (1.79)	-3.13	-0.59	.002*	1.66
	Parent-rated	1.4 (1.10)	1.1 (0.98)	2.02	0.24	.044*	1.04	1.3 (1.07)	1.2 (1.02)	0.66	0.08	.510	1.05
Attention	Child-rated	3.4 (2.25)	3.0 (2.35)	1.29	0.34	.200	2.29	2.8 (2.03)	3.6 (2.48)	-2.91	-0.75	.004*	2.27
	Parent-rated	3.1 (2.41)	1.9 (1.81)	4.91	1.19	< .001**	2.14	2.5 (2.16)	2.5 (2.28)	-0.08	-0.20	.940	2.22
Relationship	Child-rated	2.5 (1.73)	2.3 (1.60)	1.01	0.19	.310	1.67	2.1 (1.47)	2.6 (1.82)	-2.48	-0.47	.014*	1.65
	Parent-rated	2.2 (1.55)	2.0 (1.28)	1.69	2.74	.090	1.42	2.0 (1.49)	2.2 (1.36)	-0.82	-0.16	.410	1.43

* Significant at p <0.05, ** Significant at p <0.01

Abbreviations: Mean diff. = Mean difference, ERQ-CA/HIF = Adapted Emotion Regulation Questionnaire for Children and Adolescents (ERQ-CA) and How I Feel (HIF), ER = Emotional regulation, PE = Positive emotions, NE = Negative emotions, SDQ = Strengths and Difficulties Questionnaire

DISCUSSION

This study examined the relationship between the child's emotion regulation (ER), child's mental health, and perceived parental competence in community samples in the context of Thai culture. Notably, there was no association between child's ER and parental competence, but all other factors were related (Table 2) as will be discussed below. It is important to note that nearly all Pearson's correlation coefficients (r) in this study had only a weak to moderate level of strength even if they are significant at the .010 level.

Compared to existing interventional studies in Thailand,[28,30,31] the mean ER score in this study was higher. It could be because this study was conducted in non-clinical children, and/or might be affected by non-response bias. The prevalence of children's mental health problems in this study (see Supplement 1) was lower than that of primary school students in Thailand as reported in a recent survey.[43] Certain population characteristics such as high family income and parental education might be accountable since low socioeconomic status and low parental education predict mental health problems in children and adolescents.[44] Likewise, household income was known to affect parental competence,[45] but the population in our study was homogeneously financially well, and thus the distinction could not be observed.

There was no association between child's ER and parental competence in this study even though parents value their child's ability to regulate emotions as it helps maintain harmony,[23,32] and children in a collectivistic culture use greater ER.[46] The reason behind this might be that most parents are not aware that they hold the power to coach their child's emotion,[47] thus do not regard their child's ER as a part of parental competence. However, child's ER was positively associated with both self-evaluated (r = .24) and parent-rated prosocial behavior (r = .19). Further speculation revealed that children with higher scores of positive emotions recounted more prosocial behaviors (r = .23) and fewer emotion and relationship problems (r = -.13, -.15), substantiating the current theory of prosocial development through empathy.[48-50] Positive emotions can be seen very early in infants and can elicit positive social interactions from caregivers, reinforcing the positive state. When they grow up, they become interested in other people's feelings and can share emotional states (i.e. empathy), therefore engaging more in prosocial behaviors and having good relationships. A possible explanation for why this study found no association between child's positive emotions and parental competence is that positive emotions are more difficult to discern than negative emotions and prosocial behaviors.[51]

Child-rated prosocial behaviors (r = .12), along with attention problems (r = -.17), were also correlated with perceived parenting skill. Since Thai parents tend to be protective and involved in their children's lives and take their child's outcomes as their responsibility,[52] they might feel more capable if the child is "socially good" and "studious" as desired by society. Similarly, perceived parenting value was associated with child's account of emotional problems (r = -.12) and negative emotions (r = -.19). Causality cannot be determined in this study, but the relationship was likely bidirectional and perhaps mediated by underlying factors such as attachment and boundary. Further research is helpful to elucidate this assumption.

Regarding the parent's evaluation of child's psychological problems, all domains were associated with parental competence (see Table 2). To date, there still are contradictory explanations. While a recent systematic review discovered that children's problematic behaviors unidirectionally predicted lower parental competence,[53] another suggested that parental competence predicts child's behavioral problems and social adjustment.[19] Other longitudinal studies concluded that parents shape their child's ER by the way they react to child's negative emotions.[54,55] Well-designed longitudinal studies in Thailand are necessary to look into this subject.

On the other hand, internalizing symptoms, as well as emotional processes, are better speculated by self-report.[56,57] The result consequently showed that ER was negatively associated with emotion, behavior,

attention, and peer relationship problems (r = -.25, -.31, -.29, -.19 respectively), while negative emotions were positively associated with those psychological domains (r = .62, .30, .26, .23). Moreover, as presented in Table 3, girls expressed higher levels of negative emotions ($p < .001$) and emotional problems ($p < .001$) compared to boys, aligning with previous studies indicating gender differences in emotion regulation and mental health.[58,59]

In addition to the primary objective, we found a significant disparity in mental health outcomes between child and parent reports. Parents rated their child as having lower mental health problems which could be a result of the social desirability bias of the parents. It is also plausible that the children in our study viewed themselves as more disruptive since many of them were younger than standard age for the same academic year, therefore facing more pressure to perform beyond their developmental level. Thai families with middle to upper income usually prioritize achievement, therefore the children tend to be more self-critical.[60] This attitude was also reflected in child's report of lower ER ability ($P = .015$) and more behavioral ($P = .002$), attention ($P = .004$), and peer relationship problems ($P = .014$) in older (Grade 5-6) compared to younger (Grade 3-4) students, which is incompatible with previous findings,[61] implicating that contextual factors are relevant to mental health.

Most outcomes were consistent with prevailing literature in terms of ER and its association with mental health. This study raised an urgent matter that parents, at least those in our study who had low socioeconomic risks, might not realize the magnitude of their Importance as their child's emotion coach and model. Previous mental health-promoting policies might not have an impact as much as they should because of this missing link. Further investigation to test this hypothesis is needed. This study also highlighted the role of positive emotions in prosocial behavior development.

Strengths, Limitations, and Future Directions

This study is the first of its kind to measure the subjective emotional regulation (ER) of non-clinical school-aged children in Thailand and to examine the association between children's ER and perceived parental competence. This added to the gap in knowledge of emotion. The study also used the multiple informants method to evaluate psychological symptoms, which made the results more reliable. As stated above, we urged researchers to examine whether parents realize that they are significant to their child's emotion development.

Nevertheless, there were several limitations. Firstly, this is a cross-sectional study which means that it cannot describe the causal direction of the correlations. Future studies should consider using other types of methodologies e.g. longitudinal design or other analysis models such as path analysis. Secondly, the population was from a single school with similar backgrounds, so the results may not be generalized to other populations. Conducting research in more diverse samples is recommended. Thirdly, most of the correlation coefficients were weak to moderate, implying that there might be other confounding factors, for instance, the study did not measure child temperament and attachment which are established factors influencing a child's ER. Lastly, emotions are widely varied. Deconstructing emotions, especially those categorized as positive, and analyzing them separately could be insightful. We recommended future researchers to explore more positive emotions and their merit on mental health.

CONCLUSION

This study found that emotion regulation is positively associated with prosocial behavior and negatively associated with mental health problems, while parental competence is associated with child's mental health outcomes, particularly prosocial behaviors and attention problems. No association between child's emotion regulation and parental competence was found therefore it raised an urgent question whether parents realize their Important role in coaching their child's emotion regulation. The study also highlights the influence of certain population characteristics, such as family income and parental education, in mental health status. Further

research is needed to better understand the intricate relationship between emotion regulation, mental health, and perceived parental competence in Thai culture.

Acknowledgement

We would like to thank all the participants for completing the survey and the school for helpful collaboration.

Conflict of Interest

The authors declare that they have no competing interests.

REFERENCE

1. Freeman M. The world mental health report: transforming mental health for all. World Psychiatry 2022; 21(3): 391-2.
2. Gross JJ. The emerging field of emotion regulation: An integrative review. Rev Gen Psychol 1998; 2(3): 271-99.
3. Berking M, Wupperman P. Emotion regulation and mental health: recent findings, current challenges, and future directions. Curr Opin Psychiatry 2012; 25(2): 128-34.
4. Sloan E, Hall K, Moulding R, Bryce S, Mildred H, Staiger PK. Emotion regulation as a transdiagnostic treatment construct across anxiety, depression, substance, eating and borderline personality disorders: A systematic review. Clin Psychol Rev 2017; 57: 141-63.
5. Zeman J, Cassano M, Perry-Parrish C, Stegall S. Emotion regulation in children and adolescents. J Dev Behav Pediatr 2006; 27(2): 155-68.
6. Schafer JO, Naumann E, Holmes EA, Tuschen-Caffier B, Samson AC. Emotion regulation strategies in depressive and anxiety symptoms in youth: A meta-analytic review. J Youth Adolesc 2017; 46(2): 261-76.
7. Bariola E, Gullone E, Hughes EK. Child and adolescent emotion regulation: the role of parental emotion regulation and expression. Clin Child Fam Psychol Rev 2011; 14(2): 198-212.
8. Willner CJ, Hoffmann JD, Bailey CS, Harrison AP, Garcia B, Ng ZJ, et al. The development of cognitive reappraisal from early childhood through adolescence: A systematic review and methodological recommendations. Front Psychol 2022; 13: 875964.
9. Crowell JA. Development of emotion regulation in typically developing children. Child Adolesc Psychiatr Clin N Am 2021; 30(3): 467-74.
10. Montigny F, Lacharité C. Perceived parental efficacy: concept analysis. J Adv Nurs 2005; 49(4): 387-96.
11. Eisenberg N, Cumberland A, Spinrad TL. Parental socialization of emotion. Psychol Inq 1998; 9(4): 241-73.
12. Rutherford HJV, Wallace NS, Laurent HK, Mayes LC. Emotion regulation in parenthood. Dev Rev 2015; 36: 1-14.
13. Hajal NJ, Paley B. Parental emotion and emotion regulation: A critical target of study for research and intervention to promote child emotion socialization. Dev Psychol 2020; 56(3): 403-17.
14. Slagt M, Dekovic M, de Haan AD, van den Akker AL, Prinzie P. Longitudinal associations between mothers' and fathers' sense of competence and children's externalizing problems: the mediating role of parenting. Dev Psychol 2012; 48(6): 1554-62.
15. Elam KK, Chassin L, Eisenberg N, Spinrad TL. Marital stress and children's externalizing behavior as predictors of mothers' and fathers' parenting. Dev Psychopathol 2017; 29(4): 1305-18.
16. Hill NE, Bush KR. Relationships between parenting environment and children's mental health among African American and European American mothers and children. J Marriage Fam 2001; 63(4): 954-66.
17. Knoche LL, Givens JE, Sheridan SM. Risk and protective factors for children of adolescents: Maternal depression and parental sense of competence. J Child Fam Stud 2007; 16(5): 684-95.
18. Jones TL, Prinz RJ. Potential roles of parental self-efficacy in parent and child adjustment: a review. Clin Psychol Rev 2005; 25(3): 341-63.
19. Albanese AM, Russo GR, Geller PA. The role of parental self-efficacy in parent and child well-being: A systematic review of associated outcomes. Child Care Health Dev 2019; 45(3): 333-63.
20. Dunbar AS, Leerkes EM, Coard SI, Supple AJ, Calkins S. An integrative conceptual model of parental racial/ethnic and emotion socialization and links to children's social-emotional development among African American families. Child Dev Perspect 2017; 11(1): 16-22.
21. Labella MH. The sociocultural context of emotion socialization in African American families. Clin Psychol Rev 2018; 59: 1-15.
22. Morelen D, Thomassin K. Emotion socialization and ethnicity: an examination of practices and outcomes in African American, Asian American, and Latin American families. Yale J Biol Med 2013; 86(2): 168-78.
23. Morelen D, Jacob ML, Suveg C, Jones A, Thomassin K. Family emotion expressivity, emotion regulation, and the link to psychopathology: Examination across race. Br J Psychol 2013; 104(2): 149-66.
24. Suveg C, Raley JN, Morelen D, Wang W, Han RZ, Campion S. Child and family emotional functioning: A cross-national examination of families from China and the United States. J Child Fam Stud 2014; 23(8): 1444-54.
25. Hofstede G. Cultures and organizations: Software of the mind. 3rd ed: New York: McGraw-Hill Professional; 2010.
26. Pannapat Pruksakit AK. The perspective of Chinese teachers toward Thai students in learning environment. Proceedings of the Burapha University International Conference 2016. 2016.
27. Lertsrimongkol P. Effects of an emotional regulation training program on teamwork skills of sixth grade students. Master [thesis]. Bangkok: Chulalongkorn University; 2011.
28. Chaiwong S. Effects of cognitive behavior therapy group counseling on emotion regulation and related factors of children of divorce. Master [thesis]. Bangkok: Chulalongkorn University; 2013.

29. Thanidawan Wanthaneeyakul PK. The effect of individual solution focus brief therapy on emotion regulation of adolescent mothers. Research Methodology & Cognitive Science. 2015; 13: 18-26.
30. Kittisunthorn D. Effect of cognitive behavior therapy group counseling on resilience and emotion regulation in middle childhood. Master [thesis]. Bangkok: Chulalongkorn University; 2016.
31. Samart S. The effects of cognitive behavior of group counseling on emotion regulation of Chonburi juvenile delinquency at the observation. JTJS 2018; 11(1): 25-37.
32. Yong GH, Lin MH, Toh TH, Marsh NV. Social-emotional development of children in Asia: A systematic review. Behav Sci 2023; 13(2).
33. Walden TA, Harris VS, Catron TF. How I feel: a self-report measure of emotional arousal and regulation for children. Psychol Assess 2003; 15(3): 399-412.
34. Ciucci E, Baroncelli A, Grazzani I, Ornaghi V, Caprin C. Emotional arousal and regulation: Further evidence of the validity of the "How I Feel" questionnaire for use with school-age children. J Sch Health 2016; 86(3): 195-203.
35. Gross JJ, John OP. Individual differences in two emotion regulation processes: implications for affect, relationships, and well-being. J Pers Soc Psychol 2003; 85(2): 348-62.
36. Gullone E, Taffe J. The Emotion Regulation Questionnaire for Children and Adolescents (ERQ-CA): a psychometric evaluation. Psychol Assess 2012; 24(2): 409-17.
37. Goodman R, Ford T, Corbin T, Meltzer H. Using the Strengths and Difficulties Questionnaire (SDQ) multi-informant algorithm to screen looked-after children for psychiatric disorders. Eur Child Adolesc Psychiatry 2004; 13 Suppl 2: II 25-31.
38. Youngyud Wongpiromsarn PW, Supavadee Nuanmanee, Wolfgang Woener, Apichai Mongkol. Strengths and Difficulties Questionnaire (SDQ) Thai improved version: change and administration. J Ment Health Thai 2012; 19(2): 128-34.
39. Mash CJEJ. A measure of parenting satisfaction and efficacy. J Clin Child Psychol 1989; 18(2): 167-75.
40. Gilmore L, Cuskelly M. Factor structure of the Parenting Sense of Competence scale using a normative sample. Child Care Health Dev 2009; 35(1): 48-55.
41. Nunes C, Ayala-Nunes L, Ferreira LI, Pechorro P, Freitas D, Martins C, et al. Parenting Sense of Competence: Psychometrics and invariance among a community and an at-risk samples of Portuguese parents. Healthc 2022; 11(1): 15.
42. Suwansujarid T, Vatanasomboon P, Gaylord N, Lapvongwatana P. Validation of the parenting sense of competence scale in fathers: Thai version. Southeast Asian J Trop Med Public Health 2013; 44(5): 916-26.
43. Pudpong N, Julchoo S, Sinam P, Uansri S, Kunpeuk W, Suphanchaimat R. Psychosocial problems among primary school children in Thailand during the COVID-19 pandemic, 2022. Pediatric Health Med Ther 2023; 14: 159-68.
44. Reiss F, Meyrose A-K, Otto C, Lampert T, Klasen F, Ravens-Sieberer U. Socioeconomic status, stressful life situations and mental health problems in children and adolescents: Results of the German BELLA cohort-study. Plos One 2019; 14(3): e0213700.
45. Fang Y, Boelens M, Windhorst DA, Raat H, van Grieken A. Factors associated with parenting self-efficacy: A systematic review. J Adv Nurs 2021; 77(6): 2641-61.
46. Teuber Z, Schreiber S, Rueth J-E, Lohaus A. Emotion regulation among Chinese and German children and adolescents: a binational comparative study. Curr Psychol 2023; 42(28): 24641-55.
47. Nimkannon O, Weinstein B. Influence of emotion regulation and empathy on Thai parenting behavior: A path analytic model. Schol Human Sciences 2015; 6(2).
48. Davis M, Suveg C. Focusing on the positive: a review of the role of child positive affect in developmental psychopathology. Clin Child Fam Psychol Rev 2014; 17(2): 97-124.
49. Hammond SI, Drummond JK. Rethinking emotions in the context of infants' prosocial behavior: The role of interest and positive emotions. Dev Psychol 2019; 55(9): 1882-8.
50. Eisenberg N. Considering the role of positive emotion in the early emergence of prosocial behavior: Commentary on Hammond and Drummond (2019). Dev Psychol 2020; 56(4): 843-5.
51. Kim G, Walden T, Harris V, Karrass J, Catron T. Positive emotion, negative emotion, and emotion control in the externalizing problems of school-aged children. Child Psychiatry Hum De. 2007; 37(3): 221-39.
52. Yotanyamaneewong S, Tapanya S. Education and Parenting in Thailand. In: Sorbring E, Lansford JE, editors. School systems, parent behavior, and academic achievement: An international perspective. Cham: Springer International Publishing; 2019. p. 111-21.
53. Glatz T, Lippold M, Chung G, Jensen TM. A systematic review of parental self-efficacy among parents of school-age children and adolescents. Adolesc Res Rev 2023; 9: 75-91.
54. Peisch V, Dale C, Parent J, Burt K. Parent socialization of coping and child emotion regulation abilities: A longitudinal examination. Fam Process 2020; 59(4): 1722-36.
55. Perry NB, Dollar JM, Calkins SD, Keane SP, Shanahan L. Maternal socialization of child emotion and adolescent adjustment: Indirect effects through emotion regulation. Dev Psychol 2020; 56(3): 541-52.
56. Becker A, Hagenberg N, Roessner V, Woerner W, Rothenberger A. Evaluation of the self-reported SDQ in a clinical setting: do self-reports tell us more than ratings by adult informants? Eur Child Adolesc Psychiatry 2004; 13 (Suppl 2): II17-24.
57. Vazire S. Who knows what about a person? The self–other knowledge asymmetry (SOKA) model. J Pers Soc Psychol 2010; 98(2): 281-300.
58. Cunningham JN, Kliewer W, Garner PW. Emotion socialization, child emotion understanding and regulation, and adjustment in urban African American families: differential associations across child gender. Dev Psychopathol 2009; 21(1): 261-83.
59. Sanchis-Sanchis A, Grau MD, Moliner AR, Morales-Murillo CP. Effects of age and gender in emotion regulation of children and adolescents. Front Psychol 2020; 11: 946.
60. Tapanya S. Attributions and attitudes of mothers and fathers in Thailand. Parent Sci Pract 2011; 11(2-3): 190-8.
61. Lopez-Perez B, Pacella D. Interpersonal emotion regulation in children: Age, gender, and cross-cultural differences using a serious game. Emotion 2021; 21(1): 17-27.

Supplement Data

Supplement 1 Paired T-test of self-report and parent-report SDQ scores

SDQ	Parent-rated Mean (S.D.)	Child-rated Mean (S.D.)	t	*P*-value	Cohen's d
Prosocial	7.3 (1.92)	6.8 (1.94)	3.85	< .001**	2.12
Emotion	1.7 (1.79)	3.3 (2.52)	-11.37	< .001**	2.45
Behavior	1.3 (1.04)	2.5 (1.69)	-12.96	< .001**	1.72
Attention	2.5 (2.22)	3.2 (2.30)	-5.34	< .001**	2.34
Relationship	2.1 (1.43)	2.4 (1.67)	-2.58	.010*	1.68

* Significant at $p < 0.5$ ** Significant at $p < 0.01$

Abbreviation: SDQ = Strengths and Difficulties Questionnaire

Supplement 2 One-way ANOVA analysis of parental competence between different marital status groups

Outcome Variables	Marital Status	Mean (S.D.)	df	Mean Square	F	*P*-value
Perceived Skills	Married	37.0 (5.12)	3	15.23	0.57	.667
	Separated	39.7 (5.50)				
	Divorced	37.4 (6.17)				
	Widowed	36.7 (4.80)				
Perceived Value	Married	39.3 (6.61)	3	21.41	0.74	.699
	Separated	40.5 (9.95)				
	Divorced	37.8 (8.32)				
	Widowed	41.7 (5.43)				

Supplement 3 One-way ANOVA of outcome variables between different monthly household income groups

Outcome Variables	Household Income (THB/month)	Mean (S.D.)	df	Mean Square	F	*P*-value
ERQ-CA/HIF						
ER	<20k	24.8 (2.22)	4	17.82	1.20	.261
	20k - 44k	21.8 (4.05)				
	44k - 68k	21.5 (3.48)				
	68k - 96k	20.9 (3.90)				
	>96k	21.2 (3.92)				
PE	<20k	33.0 (5.29)	4	48.06	1.58	.155
	20k - 44k	28.9 (6.10)				
	44k - 68k	29.0 (5.36)				
	68k - 96k	30.667 (5.32)				
	>96k	28.9 (5.50)				

Supplement 3 One-way ANOVA of outcome variables between different monthly household income groups (con.)

Outcome Variables		Household Income (THB/month)	Mean (S.D.)	df	Mean Square	F	*P*-value
NE		<20k	35.8 (6.65)	4	51.21	0.75	.606
		20k - 44k	32.1 (8.59)				
		44k - 68k	33.2 (8.15)				
		68k - 96k	34.8 (7.89)				
		>96k	33.2 (8.38)				
PSOC							
Perceived Skills		<20k	36.3 (2.87)	4	0.93	0.04	.963
		20k - 44k	37.0 (5.11)				
		44k - 68k	37.0 (5.35)				
		68k - 96k	37.2 (4.54)				
		>96k	37.0 (5.37)				
Perceived Value		<20k	39.0 (9.90)	4	12.07	0.27	.919
		20k - 44k	40.2 (6.78)				
		44k - 68k	39.3 (7.19)				
		68k - 96k	39.7 (6.28)				
		>96k	39.1 (6.70)				
SDQ							
Prosocial	Child-rated	<20k	7.8 (2.06)	4	2.65	0.70	.713
		20k - 44k	6.5 (1.80)				
		44k - 68k	7.0 (1.84)				
		68k - 96k	6.6 (2.23)				
		>96k	6.9 (1.90)				
	Parent-rated	<20k	8.3 (2.22)	4	3.39	0.92	.390
		20k - 44k	7.3 (1.63)				
		44k - 68k	7.5 (1.97)				
		68k - 96k	7.5 (1.95)				
		>96k	7.1 (1.94)				
Emotion	Child-rated	<20k	2.8 (1.26)	4	5.79	0.91	.388
		20k - 44k	2.6 (2.47)				
		44k - 68k	3.3 (2.43)				
		68k - 96k	3.4 (2.43)				
		>96k	3.4 (2.60)				
	Parent-rated	<20k	2.3 (2.63)	4	1.28	0.40	.830
		20k - 44k	1.5 (1.64)				
		44k - 68k	1.6 (1.74)				
		68k - 96k	1.5 (1.56)				
		>96k	1.8 (1.90)				

Supplement 3 One-way ANOVA of outcome variables between different monthly household income groups (con.)

Outcome Variables		Household Income (THB/month)	Mean (S.D.)	df	Mean Square	F	*P*-value
Behavior	Child-rated	<20k	1.8 (0.96)				
		20k - 44k	2.0 (1.35)				
		44k - 68k	2.3 (1.48)	4	4.76	1.69	.128
		68k - 96k	2.6 (1.90)				
		>96k	2.7 (1.73)				
	Parent-rated	<20k	1.3 (0.96)				
		20k - 44k	1.2 (1.02)				
		44k - 68k	1.2 (1.00)	4	0.48	0.44	.732
		68k - 96k	1.1 (0.96)				
		>96k	1.3 (1.10)				
Attention	Child-rated	<20k	2.3 (1.89)				
		20k - 44k	3.2 (2.40)				
		44k - 68k	3.0 (2.39)	4	2.59	0.49	.681
		68k - 96k	3.5 (2.42)				
		>96k	3.2 (2.22)				
	Parent-rated	<20k	1.8 (2.06)				
		20k - 44k	2.3 (1.77)				
		44k - 68k	2.6 (2.59)	4	1.92	0.39	.732
		68k - 96k	2.7 (2.44)				
		>96k	2.5 (2.14)				
Relationship	Child-rated	<20k	2.3 (2.63)				
		20k - 44k	2.2 (1.58)				
		44k - 68k	1.8 (1.30)	4	4.66	1.69	.115
		68k - 96k	2.4 (1.52)				
		>96k	2.5 (1.78)				
	Parent-rated	<20k	3.0 (1.41)				
		20k - 44k	2.0 (1.33)				
		44k - 68k	2.3 (1.33)	4	3.63	0.13	.082
		68k - 96k	1.8 (1.28)				
		>96k	2.2 (1.50)				

Abbreviations: ERQ-CA/HIF = Adapted Emotion Regulation Questionnaire for Children and Adolescents (ERQ-CA) and How I Feel (HIF), ER = Emotional Regulation, PE = Positive emotions, NE = Negative emotions, PSOC = Parenting Sense of Competence Scale SDQ = Strengths and Difficulties Questionnaire