

ปัจจัยที่มีความสัมพันธ์กับพฤติกรรมของมารดาในการส่งเสริมทักษะการคิดเชิงบริหาร ของเด็กวัยก่อนเรียน

Factors Related to Maternal Behaviors in Promoting Executive Functions of Preschool Children

นิพนธ์ต้นฉบับ

Original Article

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บทคัดย่อ

วัตถุประสงค์: เพื่อศึกษาพฤติกรรมของมารดาในการส่งเสริมทักษะการคิดเชิงบริหารของเด็กวัยก่อนเรียน และปัจจัยที่เกี่ยวข้องกับพฤติกรรม วิธีการศึกษา: การศึกษาความสัมพันธ์มีกลุ่มตัวอย่าง คือ มารดาเด็กวัยก่อนเรียนที่เข้ารับบริการในศูนย์พัฒนาเด็กเล็ก 3 แห่งในเขตเทศบาลเมือง จังหวัดชลบุรี จำนวน 101 คน จากการสุ่มอย่างง่าย เก็บข้อมูลระหว่างสิงหาคมถึงกันยายน พ.ศ. 2566 โดยใช้แบบสอบถามจำนวน 7 ชุด ประกอบด้วยแบบสอบถามข้อมูลทางประชากรศาสตร์ ความเครียดของมารดา สภาพแวดล้อมที่บ้าน พฤติกรรมการใช้หน้าจอของมารดา ความสัมพันธ์ระหว่างมารดาและบุตร การสนับสนุนของครอบครัว และพฤติกรรมของมารดาในการส่งเสริมทักษะการคิดเชิงบริหารเด็กวัยก่อนเรียน ทดสอบความสัมพันธ์ด้วยสหสัมพันธ์ของเพียร์สันหรือสเปียร์แมนตามความเหมาะสม **ผลการศึกษา:** คะแนนเฉลี่ยพฤติกรรมของมารดาในการส่งเสริมทักษะการคิดเชิงบริหารเด็กวัยก่อนเรียนโดยรวมอยู่ในระดับมาก ($M = 106.15, SD = 12.14$) และสัมพันธ์ทางลบกับความเครียดของมารดาและพฤติกรรมการใช้หน้าจอของมารดาอย่างมีนัยสำคัญทางสถิติ ($r = -0.21$ และ -0.196 ตามลำดับ, P -value < 0.05 ทั้งหมด) และทางบวกกับสภาพแวดล้อมที่บ้าน ความสัมพันธ์ระหว่างมารดาและบุตร และการสนับสนุนของครอบครัวอย่างมีนัยสำคัญทางสถิติ ($r = 0.521, 0.488$ และ 0.543 ตามลำดับ, P -value < 0.01 ทั้งหมด) สรุป: พฤติกรรมของมารดาในการส่งเสริมทักษะการคิดเชิงบริหารเด็กวัยก่อนเรียนสัมพันธ์ทางลบกับความเครียดของมารดาและพฤติกรรมการใช้หน้าจอของมารดา และทางบวกกับสภาพแวดล้อมที่บ้าน ความสัมพันธ์ระหว่างมารดาและบุตร และการสนับสนุนของครอบครัว

คำสำคัญ: พฤติกรรมมารดา; ทักษะการคิดเชิงบริหาร; เด็กวัยก่อนเรียน; ปัจจัยสัมพันธ์

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Abstract

Objective: To determine the level of executive functions (EF) promoting behavior of the mothers of preschool children and its related factors.

Methods: This correlational research had 101 mothers of preschool children receiving services at three municipal child development centers in Chonburi province as the sample recruited by simple random sampling. Data were collected between August and September 2023 using a questionnaire with 7 parts to assess demographic characteristics, maternal stress, home environment, mothers' screen-use behaviors, child-mother relationship, family support, and mother's EF promoting behavior on preschool children. Data were analyzed using Pearson's correlation test or Spearman's correlation test, as appropriate. **Results:** The overall mean score of maternal behavior in promoting EFs in preschool children was at a high level ($M = 106.15, SD = 12.14$). The EF promoting behavior was negatively correlated with maternal stress and screen-use behavior ($r = -0.21$ and -0.196 , respectively, P -value < 0.05 , for both) and positively correlated with home environment, mother-child relationship, and family support ($r = 0.521, 0.488$, and 0.543 , respectively, P -value < 0.01 , for all). **Conclusion:** The EF promoting behavior was negatively correlated with maternal stress and screen-use behavior and positively correlated with home environment, mother-child relationship, and family support

Keywords: maternal behaviors; executive functions; preschool children; relative factors

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Introduction

Executive functions (EFs) are defined as a high-level brain function to control the person's emotion, thinking, action, self-control, impulsiveness, attentiveness, aim setting, decision making, taking action, maintenance of the action until achieving the goal.¹ EFs facilitate individuals respond to the everchanging environment with flexibility.² EFs are controlled by frontal lobe by coordinating with other parts of the brain.³ EFs are prominently developed in children aged 3 – 6 years

or preschool children.⁴ Since their brain is immensely developed with complicate neuron networks and synapses, frontal lobe development is associated with EFs of the children.⁵ With frontal lobe's functions of goal setting, task planning, creativity, and control of emotion and behavior, this phase of brain development is referred to as the golden period for EFs skill development.³ Therefore, the best age for promoting and developing EF skills is preschool children.

EFs among Thai preschool was found to be at lower than a standard. A study of Chutabhakdikul et al reported that among 2,965 Thai children aged 2 – 6 years, about one-third (28.32%) had EF scores that were lower than the standard (i.e., T score < 45).³ They also reported that more than 30% of these children had EF behavioral problem (i.e., T score > 55). Regarding geographical differences, 13.65% of children in the east of Thailand had EFs lower than standard (T score < 45) and 36.59% had EF behavioral problem (T score > 55). This study indicated that preschool children had problems of EFs than those in other regions of Thailand.³ The defects of EFs in children could affect the one in their adulthood.⁶

Children with low EFs are more likely to lose self-control, self-inhibition, and self-management. Once reaching adulthood, they face physical problems such as cardiovascular disorders, respiratory disorders, and oral health problems.^{7,8} These children with low EFs also face psychological problems such as poor emotional control and aggressive behaviors, alcohol consumption behavior, smoking, substance abuse, adolescent pregnancy, divorce, crimes, and sexually transmitted disease than their counterparts with high EFs.³ Therefore, promotion of EFs in preschool children is crucial for preparing adult with tools for successful and happy life.⁹

In promoting EFs in preschool children, mothers have a crucial role since they are the person closest to the children.¹⁰ They already have maternal roles of supporting, advising and enforcing EFs in preschool children.¹¹ From a report on literacy of raising early childhood children in 2019, 73.3% of the main caregiver of the children were the mother.¹² Of these mothers, most had their rearing literacy at a fair level (48.3%) and poor level (12.9%). This suggests that more than half of the mothers had a literacy of raising early childhood children low level which was inadequate to raise early childhood children.

A study revealed that mothers had a high level of perceived obstacles to promoting child development of EF could have a negative effect on the mother's EF promoting behavior ($\beta = -0.686$, P-value < 0.001).¹³ Obstacles included no understanding, no knowledge, no time available, low income and inconvenience.¹³ The problems also included mothers with a lack of discipline in raising children, strict raising, a high stress level, no time for interacting with children, and a poor screen-use behavior.¹³ These obstacles and problems indicate that the mother had a poor promotion

behavior for child development and child EF skills which could negatively affect EF skill development among preschool children. Thus, mothers is one of the crucial factors who potentially promote EF of preschool children.

Based on the PRECEDE-PROCEED Model of Green and Kreuter, individuals' behaviors are a result of various factors.¹⁴ To change a given behavior, relevant factors must be understood. The model classifies factors into three groups namely pre-disposing, enabling, and reinforcing factors. Pre-disposing factors were innate characteristics of the person. Enabling factors are influenced by environment and influence the behavior directly. Reinforcing factors exert their support for the behavior additional to the first two groups of factors. In the context of EF skills of the preschool children, the mother's behavior in promoting such skills is critical. Preschool children's EFs depends largely on the promotion from their mothers. The mothers thus need knowledge and understanding in promoting and supporting the children's EFs.¹³ However, factors that influence the mother's EF promoting behavior have to be understood. Based on the PRECEDE-PROCEED Model and previous studies, factors influencing the mother's EF promoting behavior for preschool children include the maternal stress as a predisposing factor, home environment and the mother's screen-use behaviors as enabling factors, and mother-child relationship and family support as reinforcing factors.¹⁴

Studies on factors associated with mother behavior in promoting EFs in preschool children have been scarce. A study shows that the mothers' perceived obstacle was found to be predictive of their behavior of promoting the children's EFs.¹³ In this present study, we aimed to determine factors affecting their behaviors in promoting EFs of preschool children. Findings could be useful in planning programs or campaign for the mother to promote EFs of their children.

Specifically, this present aimed to determine the mothers' behavior in promoting EFs of their preschool children, and to assess the associations between the mother's behavior and various factors including the maternal stress, home environment, mothers' screen use behaviors, mother-child relationship, and family support. Accordingly, it was hypothesized that the mother's behavior in promoting EFs in preschool children was negatively associated with maternal stress and mothers' screen use, positively associated with home environment, mother-child relationship, and family support.

Conceptually, based on the third step of PRECEDE-PROCEED Model of Green and Kreuter^{1,4}, the mother's behavior of promoting EFs for preschool children could be influenced by a predisposing factor of the maternal stress from daily living, family care, and child rearing. If not being able to cope with the stress, the mother could be negatively affected especially their behavior to promote EFs of their children.^{15,16} Enabling factors of behaviors of promoting EFs could include home environment where learning-promoting home environment could reinforce the mother to cultivate EF promoting behavior toward her child.¹⁷ As an enabling factor, the mother's appropriate screen use with limited time was found to be associated with EF promoting behavior of the mother; on the other hand, inappropriate screen use with unlimited time could dampen the mother's EF promoting behavior on her child.¹⁸⁻²¹ For reinforcing factors, a good mother-child relationship could lead to a better mother's EF promoting behavior.⁶ Mothers with good family support could also help continuously develop their EF promoting behavior.^{17,22,48-50} Independent effect of each factor on EFs was tested in our study.

Methods

In this correlational study, study population was the mothers of preschool children attending municipal child development centers in Chonburi province. The study sample was the mothers of the children who met the eligibility criteria. To be eligible, they had to be 18 years old or older, be the caregiver of their child of age of 3 – 6 years old, living with the child at the same household, able read, write and communicate in Thai language. Those who were mothers of children with development defect or learning disability screened by the Developmental Surveillance and Promotion Manual (DSPM) or those take care of by grandparents or others as the main caregiver other than the mother were excluded.

The sample size was estimated based on power analysis. Type I error was set at a type I error of 5% while power at 80%.²³ With a medium effect size of 0.30 from a previous study, a sample size of 84 participants was required.²⁴ To compensate for a 20% incomplete data²³, a total size of 101 was needed. The sample size was estimated using G*Power software program.

The study sample was selected from the study population using a multi-stage sampling. Based on the 30% sample rule²⁵, three of the nine municipal child development centers in Chonburi province were randomly selected without replacement. To select 101 children from the three centers, the sample size was proportional to the number of children registered in each center, i.e., 26, 13 and 62 children. In each center, the number of children selected was also proportional to the total number of children in each class. Children aged 3 – 6 years old were randomly selected without replacement.

Research instruments

The 7-part questionnaire was used to collect data. The first part collected demographic characteristics of the children including age, sex, order of the child, and the mothers including age, marital status, education level, occupation, and family monthly income. The second part assessed stress. The original questionnaire was based on the work of Cohen²⁶ which was translated to Thai language by Wongpakaran and Wongpakaran.²⁷ The questionnaire consisted of 10 items with a 5-point rating scale ranging from 0-never, to 1-rarely, 2-sometimes, 3-occasionally, and 4-frequently. With a total score of 0 – 40 points, higher scores indicate higher stress and vice versa.

In the third part, home environment was assessed using the questionnaire of Sangsai and colleagues.^{2,8} The 36 questions represent 7 aspects of home environment including communication and language response (6 items), physical environment (7 items), maternal responsivity (6 items), stimulation of learning (6 items), role model (4 items), activities (4 items), and punishment (3 items). The response was a yes/no format with the possible total score of 0 – 36 points where higher scores mean more appropriate home environment and vice versa.

The fourth part evaluated screen-use behavior of the mother using the parent's screen-use behavior questionnaire.²⁹ The 7 questions are rated with a 4-point rating scale ranging from 4-always, to 3-often, 2-sometimes, and 1-never. With a possible total score of 7 – 28 points, higher scores indicate higher level of screen-use behavior of the mother and vice versa.

The fifth part assessed mother-child relationship using the questionnaire of Chivanon and Phaktoop.^{3,0} The 26-item questionnaire had a 5-point rating scale ranging from 1-the least to 2-little, 3-moderate, 4-a lot, and 5-the most. With a

possible total score of 26 – 130 points, higher scores indicate a higher level of good relationship and vice versa.

The sixth part assessed family support using the family support questionnaire³¹ modified by the researcher. Of the 14 items, three aspects of support were identified including emotional support (5 items), material support (5 items), and information support (4 items). The response was a 5-point rating scale ranging from 1-never true to 2-slightly true, 3-half true, 4 -mostly true, and 5-always true. With a possible total score of 14 – 70 points, higher scores indicate higher social support and vice versa.

The last part evaluated EF promoting behavior of the mother on preschool children. The questionnaire was developed by the researcher based on literature and related documents. The 24 questions were classified as functional memory (5 items), self-inhibition (4 items), thinking flexibility (5 items), emotional control (5 items), and management plan (5 items). The response was a 5-point rating scale ranging from 1-never to 2-once a week, 3-a few times per week, 4-four-to-six times per week, and 5-everyday. With a possible total score of 24 – 120 points, higher scores indicate better EF promoting behavior of the mother on preschool children and vice versa.

Research quality assurance

The EF promoting behavior of the mother on preschool children questionnaire was tested for content validity using three experts, namely one pediatrician, one nursing faculty member in child nursing and one nurse specialized in child development with EF training. Questionnaire of EF promoting behavior of the mother was found to have a high content validity with an index of 0.92. For internal consistency reliability, parts 2 – 7 of the questionnaire were tested in 30 individuals with characteristics comparable to the participants. Internal consistency reliability of parts 2 – 7 were at high level with Cronbach's alpha coefficients of 0.81, 0.83, 0.83, 0.91, and 0.95, respectively.

Participants ethical protection

The research project was approved by the Ethics Committee for Human Study of Burapha University (approval number: G-HS039/2566; approval date: July 7, 2023). The researcher asked participants for permission before the study by providing objectives, process, benefits, and voluntary and confidential nature of the study. Written informed consent was

obtained before participation. Participants could withdraw from the study at any time with no negative impact on the service they received. Results of the study were presented as summary not data of individual participants.

Data collection procedure

Once approved for ethical protection, the researcher requested directors of the three selected municipal child development centers in Chonburi province permission for study conduct. Teacher advising each selected class was approached to seek assistance in approaching the children and their mothers at the end of the class. Study conduct for each mother was scheduled for the mother's convenience. Once written informed consent was obtained, the questionnaire was given to the mother with verbal explanation. The mother was instructed how to complete the questionnaire at home and return it the next day morning.

Data analysis

Descriptive statistics including mean with standard deviation and frequency with percentage was used to summarize demographic characteristics and scores of each of study variables. Associations between the mother's EF promoting behavior for preschool children and maternal stress, home environment, screen-use behavior of the mother, mother-child relationship, and family support were tested using Pearson's product moment correlation coefficient or Spearman's correlation coefficient, as appropriate. Statistical significance was set at a type I error of 5% or P-value < 0.05. All statistical analyses were performed using the software program SPSS version 20.

Results

Of the 101 participants, these mothers of preschool children were 32.60 years of age by average ($SD = 6.64$, range = 21 – 52) and had a monthly family income of 26,382.87 baht by average ($SD = 11,710.13$, range = 9,000 - 60,000). Majority of them were married (87%), with senior high school diploma or vocational school diploma (34.7%) followed by junior high school diploma and bachelor's degree (21.8% each), private company employee (40.6%) followed by self-owned business (31.7%), and never given knowledge about EF promoting skill for preschool children (65.3%).

EF promoting behavior of the mother on preschool children was at 106.15 points by average ($SD = 12.14$, range

= 62 - 120) (Table 1). For each aspect of the behavior, the highest score was found in functional memory (mean = 22.13, SD = 2.50, range = 15 – 25 points), followed by emotional control (22.09, SD = 2.87, range = 9 – 25 points), management planning (mean = 21.51, SD = 3.56, range = 10 – 25 points), thought flexibility (mean = 21.34, SD = 3.53, range = 9 – 25), and inhibition (mean = 19.09, SD = 1.64, range = 12 - 20) (Table 1).

Table 1 Scores of executive functions promoting behavior of the mother of preschool children (N = 101).

Executive function promoting behavior	Mean	SD	Possible range	Range
Overall	106.15	12.14	24 - 120	62 - 120
By domains				
Memory	22.13	2.50	5 - 25	15 - 25
Self-inhibition	19.09	1.64	4 - 20	12 - 20
Thinking flexibility	21.34	3.53	5 - 25	9 - 25
Emotional control	22.09	2.87	5 - 25	9 - 25
Management plan	21.51	3.56	5 - 25	10 - 25

It was found that EF promoting behavior was significantly, positively correlated with home environment, child-mother relationship, family support at a moderate level ($r = 0.521, 0.488$ and 0.543 , respectively, P -value < 0.01 for all). On the other hand, the behavior was significantly, negatively correlated with stress and screen-use of the mother at a low level ($r = -0.214$ and -0.196 , respectively, P -value < 0.05 , for both) (Table 2).

Table 2 Correlations between scores of executive functions (EF) promoting behavior of the mother of preschool children and its influencing factors (N = 101).

Influencing factors	Correlation with EF promoting behavior (r) [†]
Maternal stress	-0.214* [†]
Home environment	0.521* [†]
Mother's screen-use behavior	-0.196* [†]
Mother-child relationship	0.488* [§]
Family support	0.543* [†]

* P -value < 0.05 , [†] P -value < 0.01 .

[†] Pearson's product moment correlation coefficient.

[§] Spearman's correlation coefficient.

Discussions and Conclusion

The EF promoting behavior of the mother on preschool children was at 106.15 point of the possible total score of 120 points which was considered high. Based on the PRECEDE-

PROCEED Model of Green and Kreuter¹⁴, the person's behavior is influenced by internal and external factors either pre-disposing, enabling, or reinforcing one. With a mean age of 32.60 years, these mothers were suitable for having children with their readiness in physical, mental and financial health, and rearing ability.³² Since most mothers were married (87%), these mothers could be supported by the family in promoting EFs. These mothers also have senior high school diploma or vocational school diploma (34.7%) followed by bachelor's degree (21.8%) which could allow them to select and access the source of knowledge for child development. A study of Wacharasin and colleagues showed that the mother's education was positively associated with the knowledge of child development ($r = 0.32$, P -value < 0.05).³³ Other studies also indicated that knowledge was positively associated with child developing behavior of the mother.^{34,35} This suggests that higher education offers individuals to gain more EF behavior. Mothers with no knowledge about EF promotion have been given DSPM manual after delivery. These mothers have been followed for their child development. In 2019, how to promote EFs for the child was included DSPM manual which could help the mothers comprehensively promote EFs for their children. This could lead to a high level of EF promoting behavior among the mothers in our study.

The maternal stress was negatively associated with EF promoting behavior of the mother on preschool children with statistical significance ($r = -0.214$, P -value < 0.05). This means that mothers with higher stress had lower level of EF promoting behavior. Based on the PRECEDE-PROCEED Model of Green and Kreuter¹⁴, predisposing factors influence certain behavior. Maternal stress as one of the predisposing factors negatively affects EF promoting behavior of the mother on pre-school children. Mothers usually face stress from daily living with burdens from work, economics, and family care. If unable to handle the stress properly, the mothers could become weak, tired, fluctuated, uninterested, and eventually isolated.³⁶ Mothers with high stress were reported to have less interaction with their children and less time talking, playing and participating activities together. This could lead to less EF promoting behavior of the mother.¹⁵ In a study of Ueda et al, the maternal stress was associated with authoritarian parenting.³⁷ With its strict parenting style, authoritative parenting does not serve the child's needs with control by force, punishment when not meeting expectation, parent's detachment, and parent's refusal on the child.³⁸ Authoritative

parenting thus damages mother-child relationships. A study of Mak and colleagues suggests that the maternal stress was positively associated with negative parenting style meaning that mothers with more stress are more likely to raise their children with negative parenting including child negligence, verbal abuse, punishment, and corporal punishment.³⁹ This parenting style inhibits child development of EFs of preschool children.

Home environment was found to be positively correlated with the mother's EF promoting behavior on preschool children with statistical significance ($r = 0.521$, P-value < 0.01). This suggests that a good home environment helps the mother to promote more EFs on their children. Good home environment consists of safe physical surroundings suitable for living and learning. Mothers could also act as the environment for the children in language development learning stimulation, role model, and disciplinary action. These positive effects of the mother benefit the EF development. Based on the PRECEDE-PROCEED Model, home environment affects behavior directly which allows for easy conduct of the behavior.¹⁴ Environments that allows the mother to perform EF promotion on children include reading tales to the children, playing child-developing games with children, and feeling safe to walk around the house with children. A study indicates the importance of home environment on EF promoting behavior of the mother on preschool children with a positive relationship between the mother's play promoting behavior and home environment ($r = 0.275$, P-value < 0.0).^{1,7} Home environment was also associated with better relationship between parents and children and allowed parents to express child development promoting behavior.⁴⁰ A study of O'Dwyer and colleagues also suggests that good home environment allows the mother to promote the preschool children's play.⁴¹

The mother's screen-use behavior was negatively correlated with EF promoting behavior on preschool children with statistical significance ($r = -0.196$, P-value < 0.05). More screen use means less EF promotion by the mother. In the modern time, it is almost impossible to avoid screen use since electronic device is used more for communication and information access. Based on the PRECEDE-PROCEED Model, enabling factors affect the behavior directly either promoting or inhibiting.¹⁴ Poor screen use of the mother inhibits EF promoting behavior of the mother. A study of Kabali and co-workers showed that the parent's screen use was associated with a decrease in responses to children's needs.

⁴² Previous studies also indicate that screen use of the mother leads to the mother's indifference or negligence toward children, decreased interaction, response and interest to the children.¹⁸⁻²¹

Mother-child relationship was positively correlated with EF promoting behavior of the mother on preschool children with statistical significance ($r = 0.542$, P-value < 0.01). Good child-mother relationship could facilitate EF promoting behavior of the mother by more attentive child rearing, responding to the child's needs physically and psychologically including nutrition care, hygiene, child development, comforting child when ill or uncomfortable, and participating with children in playing and activities.⁶ With such participations and care, children would feel safe and secured emotionally and ready to learn. On the other hand, poor child-mother relationship would lead to stressful and detrimental child rearing of the mother.^{4,3} Such relationship was also found in a few previous studies.^{44,45}

Family support was positively correlated with EF promoting behavior if the behavior on preschool children with statistical significance ($r = 0.543$, P-value < 0.01). The mother with family support promotes more EF for her child. Emotionally, mothers with family support would receive love, comfort, affection, and reinforcement to promote EF for their children from their family members. The mothers also receive information, news, and advice about promoting EF for children. For material and service support, the mothers are offered financial help, household burden relief, and media and books for EF promotion. Based on Green and Kreuter, family support as a reinforcement factor originated from individuals asserts its effect by stimulating the expression of health behavior.¹⁴ The mothers with family support would have less stress and perform more maternal functions to promote children growth and development of their age. Family support thus allows the mothers to deliver EF promotion for their children. In Thai context, family support was positively associated with brain development prompting behavior of the mother on the fetus ($r = 0.426$, P-value < 0.01)³⁵ and with child development promoting behavior of main caregiver on pre-term babies ($r = 0.216$, P-value < 0.05).⁴⁷ Other studies also suggest social support is also positively associated with positive behavior of the mother in promoting development of preschool children.^{17,22,48-50} Social support is also positively associated with positive parenting and reinforcement of the mother.^{51,52}

Based on our findings, nurses, healthcare providers and child caregiver could promote EF promoting behavior of the mother for their preschool children through encouraging positive factors and prohibiting negative factors. Nursing schools could use the findings in training students. Directors of child development centers could plan programs or activities that help promote EF promoting behavior of the mother on their preschool children. For future research, more factors influencing EF promoting behavior among the mothers of preschool children should be explored. These include family monthly income, and knowledge and attitude of the mother. Other persons relevant to promoting EF of preschool children other than the mother such as teachers and caregivers at the child development centers should be studied. Programs or activities to promote the mother EF promoting behavior for preschool children should be developed and tested for effectiveness.

This present study has certain limitations. The mothers included were only those who were primary or main caregiver of the children. Generalization of the results to mothers who are not such caregiver is thus limited.

In conclusion, the present study in the mothers of preschool children at the child development centers in Chonburi province of Thailand found that executive functions promoting behavior of the mother of preschool children was positively correlated with home environment, mother-child relationship, and family support, and negatively correlated with the maternal stress and the mother's screen-use behavior.

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