Predictions of Toddlers’ Development of Effortful Control with Parental Beliefs about Children’s Emotion

Chang Chia-Hui1, Shuju Lee2, Huahui Chiou2, and Ishien Li2*

1Department of Social Welfare, National Chung Cheng University, Taiwan
2Department of Child Care and Education, Hungkuang University, Taiwan

Abstract

The results of this study indicate the critical role of parents’ emotion-related beliefs in toddlers’ development of effortful control (EC). We assessed EC and negative affectivity characteristics of 94 Taiwanese children through their parents’ reports on the scales of the Early Childhood Behavior Questionnaire at two different points in time: at 24 and 30 months of age. We also assessed their parents’ emotion-related beliefs through the Parent’s Beliefs about Children’s Emotions (PBACE) questionnaire. The PBACE predicted the change in EC six months later, controlled for the children’s EC and negative affects at 24 months old. Three different aspects of PBACE significantly predicted the development in EC: parental beliefs about the value of acceptance of children’s negative emotions, manipulative nature of the emotions of children, and autonomy of children’s emotions (non-supportive meta-emotions). While parental beliefs about the manipulative nature and autonomy of children’s emotions decreased the growth of EC, valuing and/or accepting children’s negative emotions positively predicted an increase in EC. In seeking to promote young children’s development of EC, it is important for parental care giving educators to point out the importance of supportive emotion-related beliefs, whereas non-supportive meta-emotions may hinder the growth of emotion regulatory capability in early childhood.

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ABBREVIATIONS

EC: Effortful Control; PBACE: Parents’ Beliefs About Children’s Emotions; ECBQ: Early Childhood Behavior Questionnaire

INTRODUCTION

Effortful control (EC) is a dimension of temperament related to the self-regulation of emotional reactivity and behavior. Numerous studies have indicated the importance of EC for optimal development in emotional and other relevant areas. High EC is related to more effective emotional regulation [1], the development of conscience [2], compliance [3], and social as well as academic competence [4]. Low EC, on the other hand, is related to difficulties such as emotional dysregulation and externalizing problems in infancy and early childhood [5]. Although the advantages of high EC are clear, we know little about how EC develops in early childhood in relation to parents’ emotion-related beliefs. Studies examining potentially important contributors to the development of EC are of relative scarcity, particularly within infancy and toddlerhood [6]. This study aims to investigate the impact of different aspects of parental beliefs about children’s emotions on the development of EC in early childhood.

EC, defined as temperamental self-regulatory capacity, reflects individual differences in the ability to voluntarily deploy attention, detect errors, and activate a subdominant response in place of a more automatic/dominant response [7,8]. For example, when asked NOT to, a child with low EC would often run around the house, touch an attractive item, or play with something forbidden anyway. The measurable characteristics in EC of young children include inhibitory control, low-intensity pleasure, and attentional capacity [9].

EC begins to emerge at the end of the first year of life and becomes more mature in the preschool years [10]. Individual differences in EC are believed to be both due to biological factors and affected over time by environmental influences (e.g., parenting) during early childhood. EC may be amenable to socialization practices, and the socialization of emotional regulation by parents is considered to be among the most critical influences, especially in infancy and early childhood [11,12].

Sociization of emotion, especially the socialization of children’s understanding, experience, expression, and regulation of emotion, are in part defined by parental beliefs and attitudes [13]. Parents’ emotion-related beliefs vary, which leads to differential emotional acknowledgement, validation, and scaffolding [14-17]. There has been a growing interest in examining the impact of parental beliefs on children’s social-emotional development [17,18]. Studying parents’ emotion-related beliefs is important, as emotion is central to parenting, and parental beliefs play a vital role in guiding parental behaviors [16,19].

*Corresponding author
Ishien Li, Department of Child Care and Education, Hungkuang University, Shalu District, Taichung 43302, Taiwan, Tel: 886-04-2631-8652; Fax: 886-04-2633-3331; Email: ishien@gmail.com
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Keywords

- Emotion: Effortful control; Parenting: Parental beliefs; Early childhood
PARENTS’ EMOTION-RELATED BELIEFS

Recent theories and empirical studies suggest that parents’ emotion-related beliefs guide a number of emotion-related socialization behaviors [13,20]. Specifically, meta-emotion theory proposes that parents who value emotion experience as an opportunity for intimacy are involved in behaviors that are instructive of, responsive to, and encouraging of children’s emotions, while parents who view emotions as problematic tend to ignore or minimize children’s emotions [16].

Parents’ emotion-related beliefs affect how parents perceive and react to their children’s emotions [21], which comprises a key aspect of emotional socialization because these beliefs may both motivate parental reactions to children’s behavior and organize seemingly disparate aspects of parent and child behavior and the parent-child relationship[16,19,22]. Thus, understanding the relationship between parents’ emotion-related beliefs and EC in early childhood may facilitate the timely development of EC.

INFLUENCES OF PARENTS’ EMOTION-RELATED BELIEFS ON EC

Based on the meta-emotion theory, parents’ emotion-related beliefs can predict EC—the emotion-regulation capacity of children because parental belief is a specific parenting approach related to emotion-related parenting behaviors that help children have greater understanding and management of emotions and thus facilitate children’s development in self-regulation of emotions and behaviors [16]. One attempt at linking parents’ emotion-related beliefs to EC found that parents with stronger emotion-supportive beliefs reported that their children have greater EC and less negative emotions [23]. According to Day (2014)[23], children learn through parental socialization and observational learning. However, this study measured the broad construct of emotion-coaching philosophy (e.g., awareness/respect of feelings) rather than specific dimensions of parents’ emotion-related beliefs.

Parental beliefs about children’s positive and negative emotions are multifaceted and related with parental supportive and non-supportive reactions [21]. Supportive parenting may contribute to a secure attachment, which, in turn, influences the child’s regulation abilities [24]. Moreover, supportive parenting would help children invest in internalizing their parents’ goals and motivate them to learn from interactions with their parents [25]. However, when children’s emotions are not supported (e.g., ignored or minimized), children may experience heightened arousal, which would interfere with their abilities to process information and self-regulate [26]. Therefore, it could be argued that the supportive and non-supportive beliefs about emotion may be related to parental emotional socialization in emotion regulation and thus affect young children’s effortful control (i.e., regulation of inhibitory control, low-intensity pleasure, and attentional capacity).

Negative affect (i.e., a child’s disposition to experience negative emotional arousals such as anger, distress, and sadness) has been shown to make emotional regulation difficult and hinder the development of EC. Being overwhelmed by negative affect makes coping with and focusing on tasks difficult [27]. Negative affectivity also has a negative impact on cognitive processes such as working memory, attention, and inhibitory control that are needed for self-regulation and EC [28]. Although some studies found no association between negative affectivity and self-regulation [29], negative affect was controlled for as a possible covariate in this study.

Based on the research results of measurement of parents’ beliefs about children’s emotions by Halberstadt and colleagues [21], we propose a meta-emotion model by which parents contribute to young children’s developing EC with specific beliefs about children’s emotions: (1) the negative consequences of children’s emotions, (2) the manipulative nature of children’s emotions, (3) children’s control of their own emotions, (4) the autonomy of children’s emotions, (5) the stability of children’s emotions, (6) the value/acceptance of children’s negative emotions, and (7) parental knowledge of children’s emotions. In the present study, we test the degree to which the seven dimensions relate to children’s development of EC. Below, we discuss how each of these dimensions of parents’ emotion-related beliefs could influence EC.

EC and parental belief about the negative consequences of children’s emotions

Parents who have the belief that children’s emotions can have negative consequences tend to alleviate emotions and are less expressive of their own emotions [16,21]. Some parents may even consider their children’s positive emotions to be inappropriate, although positive emotions are by definition pleasant and desirable. Whether this is because of social norms or parental intolerance, parents sometimes respond to children’s emotions in an invalidating manner, by restricting, dampening, or punishing their child’s emotions. Children who receive such suppressive socialization responses to their emotions over time may learn to suppress their emotions and may fail to develop adaptive skills in regulating their emotions [30]. Therefore, such parental beliefs may decrease EC.

EC and parental belief about the manipulative nature of children’s emotions

This belief that children use emotions to manipulate others makes parents less sympathetic and thus less supportive of their children’s emotions [21] or makes them have empathic over-arousal, which in turn lead to a self-concerned response rather than supportive behaviors directed toward their children [31]. These parents tend to fear losing control of their children and are likely to invalidate the emotions. Parental ignorance may lead to children suppressing their emotions and difficulty in emotion regulation and development of EC [16], as children may experience heightened arousal, which interferes with the abilities of information processing and self-regulation [26]. Moreover, parents who believe that children use emotions to manipulate others may show a perceptual bias in over-identifying cues of insincerity. Such beliefs may make children feel guilty and not know how to exercise self-control and thus hinder the development of EC.

EC and parental belief about children’s control of their own emotions

Parents who believe that children are capable of controlling their emotions tend to lower their support of children’s emotions...
Such beliefs may hinder the development of EC, given that (1) children who cannot look to their parents for understanding and orientation to regulate their emotions feel more vulnerable and have less control over their emotions [16], and (2) less support of children’s emotions predicts lower self-regulation [26,32].

**EC and parental belief about the autonomy of children’s emotions**

This dimension refers specifically to the extent to which parents expect children to work through their emotions on their own. Parents with this belief are minimally supportive or non-supportive of the children’s feelings [21]. On the other hand, parents who believe that it is their responsibility to guide children’s emotions are more likely to (1) be involved in the socialization of children’s emotional regulation [16,33] and (2) accurately recognize children’s emotions and discuss emotions with children [21,34]. Therefore, we may expect that parents’ beliefs about the autonomy of children’s emotions will lead to low parental support and hinder the development of EC.

**EC and parental belief about the stability of children’s emotions**

This belief dimension refers to the extent to which parents believe that children’s emotional styles are stable across their development. This belief is associated with less support of emotions and less motivation to address children’s emotions [21]. Moreover, parents with this belief may have better recall for trait rather than situational information about children’s emotions. Therefore, lacking proper guidance in emotion regulation, children may be unsuccessful in developing adaptive skills in regulating their emotions [30] and hence may decrease their EC.

**EC and parental belief about the valuing and/or accepting of children’s negative emotions**

This belief refers to the extent to which parents value/accept their children’s negative emotions and view children’s negative emotions as a chance to learn [21]. Parents who value/accept their children’s negative emotions are more supportive of their children’s negative emotions, more willing to talk about emotions and to help their children understand and express their emotions, and more willing to utilize the chance to form an emotional connection with their child, primarily for the purposes of intimacy and teaching [16,21]. Therefore, it can be argued that parental belief about the value of children’s negative emotions can increase EC.

**EC and parental belief about parental knowledge of children’s emotions**

This belief in the importance of monitoring their children’s emotions is related to parental sensitivity [35] and parental communication and involvement [36]. Parents who believe that it is important for them to know what their children are feeling tend to be more supportive of their children’s emotions [21], and with better parent-child relationships, this leads to high EC [32]. Thus, it can be argued that beliefs about parental knowledge of children’s emotions can increase EC.

**THE PRESENT STUDY**

EC, as an important measure of children’s emotional self-regulation, has not been investigated for how it relates to parents’ emotion-related beliefs. Therefore, the goal of this study was to add to the emerging literature investigating family environmental precursors to EC by examining the impact of different aspects of parental beliefs on the development of EC in early childhood. As described above, we hypothesized that toddlers’ development of EC would be negatively related to parental non-supportive emotion-related beliefs (i.e., the negative consequences of children’s emotions as well as the manipulative nature, self-control, autonomy, and stability of children’s emotions) and positively related to parents’ supportive emotion-related beliefs (i.e., value/acceptance and parental knowledge of children’s emotions).

**MATERIALS AND METHODS**

**Participants and procedure**

The participants included 94 parents of toddlers, recruited from a community-based toddlers’ activity center sponsored by the Social Affairs Bureau of Taichung City Government in central Taiwan. This center provides free appointment-based child development activities to citizens with children within an age range of one to three, with three activities a day, five days in a week. About 450 families registered for the program to borrow books and toys and join story times and a variety of other age-appropriate developmental activities. Half (53%) of the registered parents were high school graduates, and 47% attended college or graduate school. From the registered families, all parents with children within the age range of one and a half to two years old were initially contacted by phone and asked if they were interested in participation and could be contacted six months later. One hundred and two out of the 150 contacted parents were willing to participate and filled out the questionnaires at home. Informed consent forms and questionnaires were mailed to the parents when their children were approximately 24 months old (Time 1). When the children were about 30 months old (Time 2), another set of questionnaires was sent to the 102 mothers, and 94 of them filled out and returned the questionnaires to the center. The children were 47% male and 53% female.

At Time 1, mothers completed questionnaires including the Early Childhood Behavior Questionnaire (ECBQ) to evaluate their children’s temperaments and the Parent’s Beliefs about Children’s Emotions (PBACE) questionnaire to assess emotion-related parenting beliefs. At Time 2, mothers continued to complete ECBQs.

**Measures of EC and negative affect**

The traditional Chinese (i.e., the parents’ primary language) version of the Early Childhood Behavior Questionnaire (ECBQ) was used to assess EC and negative affect-related temperament. Most alpha coefficients of the subscales were over .80, indicating very good internal consistency [9]. Parents were asked to read each description pertaining to their children’s behaviors in daily life and circle the frequency on a seven-point Likert scale (never, very rarely, less than half the time, half the time, more than half the time, almost always, and always). These responses reflect
the relative frequency of specified child reactions/behaviors exhibited in the past week and do not apply (N/A) if the event did not occur within the time span of interest. The ECBQ measures three constructs-EC, negative affectivity, and surgency/extraversion. Previous studies have reported good validity and reliability for all ECBQ subscales [9].

The EC scale in ECBQ includes questions from the inhibitory control, low-intensity pleasure, and attentional capacity (i.e., attentional focusing and attentional shifting) subscales. Inhibitory control is defined as the capacity to stop, moderate, or refrain from a behavior under instruction (12 items; sample items: “When asked to do so, how often was your child able to stop an ongoing activity?” and “lower his or her voice?”). Low intensity pleasure refers to pleasure or enjoyment related to situations involving low intensity, rate, complexity, novelty, and incongruity (11 items; sample items: “While a story was being read to your child, how often did s/he show enjoyment to the story?” and “During daily or evening quiet time with you and your child, how often did your child enjoy just being talked to?”). Attentional focusing indicates sustained duration of orienting towards an object of attention and resisting distraction, while attentional shifting denotes the ability to transfer attentional focus from one activity/task to another (24 items; sample items: “When engaged in play with his/her favorite toy, how often did your child play for more than 10 minutes?” and “While playing outdoors, how often did your child look immediately when you pointed at something?”). Cronbach’s alphas for EC are .72 and .70 for this study at Time 1 and Time 2, respectively. Negative affect is characterized by discomfort, sadness, and frustration. Discomfort is defined as an amount of negative affect related to sensory qualities of stimulation. Sadness refers to tearfulness or lowered mood related to suffering, disappointment, or loss. Frustration denotes negative affect related to disruption of ongoing tasks or goal blocking. Cronbach’s alphas for negative affect are .73 and .73 for this study at Time 1 and Time 2, respectively.

**Measures of Parent’s Beliefs about Children’s Emotions (PBACE)**

Parents’ emotion-related beliefs were assessed through a questionnaire called Parents’ Beliefs about Children’s Emotions (PBACE). Good evidence of construct validity and measurement invariance across ethnic groups was demonstrated [21]. The seven dimensions of parents’ beliefs about children’s emotions include two dimensions related to supportive parental beliefs (including value/acceptance of children’s negative emotions and parental knowledge about children’s emotions) and five dimensions of less-supportive beliefs (including costs of positive/negative consequences of children’s emotions, the manipulative nature of children’s emotions, and the control, autonomy, and stability of children’s emotions).

In this study, the item information about the scales that we used from the PBACE were (1) the costs of positivity/negative consequences of children’s emotions (four items; sample items: “When children are too happy, they can get out of control” and “Children who feel emotions strongly are likely to face a lot of trouble in life”; α = .77 for this sample), (2) the manipulative nature of children’s emotions (four items; sample item: “Children use emotions to manipulate others”; α = .77 for this sample), (3) children’s control of their own emotions (four items; sample items: “Children can control their emotions” and “When children are very angry, they can control what they show to others”; α = .86 for this sample), (4) the autonomy of children’s emotions (three items; sample item: “It’s usually best to let a child work through their negative feelings on their own”; α = .77 for this sample), (5) the stability of children’s emotions (four items; sample item: “Children’s emotions last for long periods of time” and “Children’s emotional styles tend to stay the same over time”; α = .73 for this sample), (6) value/acceptance of children’s negative emotions (four items; sample item: “The experience of anger can be a useful motivation for action”; α = .85 for this sample), and (7) parental knowledge of children’s emotions (three items; sample item: “Parents should encourage their child to tell them everything they are feeling”; α = .94 for this sample).

The scores representing each belief were computed by finding the mean of the items.

**ANALYSIS PERFORMED**

Descriptive analysis results of the subscales pertaining to the factors of EC (i.e., inhibitory control, low-intensity pleasure, and attentional capacity) were obtained. The means of these measures in Time 1 and Time 2 were compared to verify the existence of significant differences in development by means of t-tests. Next, we determined the contribution of the seven dimensions of parents’ emotion-related beliefs in PBACE as a whole while controlling for variance/individual differences in EC and negative affect at Time 1. Finally, we examined which of the specific dimensions of PBACE could make a specific contribution to explain the individual variations observed in the development of EC in this sample of children. Therefore, the PBACE subscales were used in a hierarchical regression analysis to determine their possible predictive value on the dependent EC scores at Time 2.

In the hierarchical regression analysis, two models were applied. In model 1, EC and negative scores at Time 1 were introduced as independent variables. In model 2, besides the abovementioned variables (i.e., the block1 variables), the seven dimensions of PBACE (i.e., the block 2 variables) were entered as predictor variables. The seven dimensions of PBACE include the parental belief dimensions about the costs of positivity/negative consequences of children’s emotions, the manipulative nature of children’s emotions, children’s control of their own emotions, the autonomy of children’s emotions, the stability of children’s emotions, the value/acceptance of children’s negative emotions, and parental knowledge of children’s emotions.

**RESULTS AND DISCUSSION**

The EC scores of all children changed between Time 1 (Mean=3.89; SD=0.68) when the children were 24 months old and Time 2 (Mean=4.08; SD=0.57) when they were 30 months old (see Table 1). Table 2 shows the results of the hierarchical regression analysis predicting EC. In model 1, predictive variables (i.e., EC and negative effect of the children at Time 1, which were controlled for in model 2) accounted for 36.6% of the variance in EC at Time 2. Both EC and negative affect were significant predictors of EC at Time 2. In model 2, when seven of the PBACE dimensions were added, the explained variance rose to 49.4%, and the change in F was significant (p<0.05; R² change...
This indicates that in addition to variance in the first model, the overall variance explained by the PBACE dimensions is significant. PBACE variables made a significant contribution in predicting EC at Time 2 (i.e., the development of EC), when previous EC and negative effect of the children were statistically controlled for.

Model 2 in Table 2 shows that the dimensions of value/acceptance of children’s negative emotions and parental knowledge of children’s emotions are positively associated with EC at Time 2, and the other dimensions of PBACE have negative contributions to EC at Time 2, while holding EC and negative effect of the children at Time 1 constant. Among the dimensions of PBACE, parental beliefs about the value of / acceptance of children’s negative emotions have a significant positive contribution (significant value of standardized $\beta = .020$) on the growth of EC. Both parental beliefs about the manipulative nature of children’s emotions (significant value of standardized $\beta = .022$) and parental beliefs about the autonomy of children’s emotions (significant value of standardized $\beta = .003$) have significant negative contributions to the development of EC.

The results of this study provide support for the impact of parental beliefs about emotions on the development of toddlers’ effortful control (EC). Significant associations were found between specific parental emotion-related beliefs and the development of EC when the existing temperamental EC and negative affect were taken into account. While the results are consistent with the literature in that the broad construct of meta-emotion is associated with children’s emotion regulation [23],

### Table 1: Comparison of child characteristics at 24 months old (T1) and 30 months old (T2).

<table>
<thead>
<tr>
<th>Child characteristics obtained with ECBQ</th>
<th>Time</th>
<th>Mean</th>
<th>SD</th>
<th>T</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>EC</td>
<td>T1</td>
<td>3.89</td>
<td>0.68</td>
<td>-3.19</td>
<td>.002*</td>
</tr>
<tr>
<td></td>
<td>T2</td>
<td>4.08</td>
<td>0.57</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Inhibitory control</td>
<td>T1</td>
<td>4.09</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>T2</td>
<td>4.11</td>
<td>1.03</td>
<td></td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>Attention capability</td>
<td>T1</td>
<td>3.92</td>
<td>0.51</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>T2</td>
<td>3.97</td>
<td>0.79</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Low-intensity pleasure</td>
<td>T1</td>
<td>4.72</td>
<td>0.90</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>T2</td>
<td>4.83</td>
<td>0.88</td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Negative affect</td>
<td>T1</td>
<td>3.22</td>
<td>0.65</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>T2</td>
<td>3.08</td>
<td>0.65</td>
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<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>Discomfort</td>
<td>T1</td>
<td>3.24</td>
<td>1.32</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>T2</td>
<td>2.70</td>
<td>0.89</td>
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<tr>
<td>Sadness</td>
<td>T1</td>
<td>3.61</td>
<td>0.88</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>T2</td>
<td>3.40</td>
<td>0.80</td>
<td></td>
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<td></td>
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<tr>
<td>Frustration</td>
<td>T1</td>
<td>3.41</td>
<td>0.84</td>
<td></td>
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<tr>
<td></td>
<td>T2</td>
<td>3.45</td>
<td>0.89</td>
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</tbody>
</table>

**Note.** Child characteristics assessed with the Early Childhood Behavior Questionnaire (ECBQ) include effortful control (EC) and negative effect. EC includes three factors: inhibitory control, attention capability, and low intensity pleasure. Negative affect is comprised of discomfort, sadness, and frustration. *Significant at the p < .05 level.

### Table 2: Hierarchical regression—with EC at 30 months old (T2) as a dependent variable.

<table>
<thead>
<tr>
<th>Predictors</th>
<th>Standardized $\beta$</th>
<th>Sig. of $\beta$</th>
<th>$R^2$</th>
<th>Change in $R^2$</th>
<th>Change in F</th>
<th>Sig. of change in F</th>
<th>Df</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Model 1</strong></td>
<td></td>
<td></td>
<td>.366</td>
<td>.366</td>
<td>27.368</td>
<td>.000</td>
<td>2,95</td>
<td>&lt;.001*</td>
</tr>
<tr>
<td>EC at T1</td>
<td>0.531</td>
<td>&lt;.001*</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Negative affect at T1</td>
<td>-0.248</td>
<td>.003*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Model 2</strong></td>
<td></td>
<td></td>
<td>.494</td>
<td>.128</td>
<td>3.187</td>
<td>.005</td>
<td>9,88</td>
<td>&lt;.001*</td>
</tr>
<tr>
<td>EC at T1</td>
<td>0.452</td>
<td>&lt;.001*</td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>Negative affect at T1</td>
<td>-0.276</td>
<td>.002*</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Costs of emotions at T1</td>
<td>-0.144</td>
<td>.173</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manipulative nature at T1</td>
<td>-0.268</td>
<td>.022*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control at T1</td>
<td>-0.050</td>
<td>.606</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Autonomy at T1</td>
<td>-0.298</td>
<td>.003*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stability at T1</td>
<td>-0.015</td>
<td>.857</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Value/acceptance at T1</td>
<td>0.310</td>
<td>.020*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parental knowledge at T1</td>
<td>0.142</td>
<td>.156</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note:** EC stands for effortful control. In model 1, the predictors are EC and negative effect of children at 24 months old (T1). In model 2, the predictors are the seven dimensions of parental emotion-related beliefs, besides EC and negative effect of children at T1. *Significant at the p < .05 level.
this study contributes to the field by showing the impact of the
definite dimensions of parents’ emotion-related beliefs on young
children’s development in self-regulation of emotion, as early as
24 months old.

As expected, the supportive dimensions of parental beliefs (i.e.,
value/acceptance of children’s negative emotions and parental
knowledge of children’s emotions) are positively associated with
the development of EC, while the other dimensions are negatively
associated with change in EC. In particular, significant growth of
EC is a consequence of parental beliefs about value/acceptance
of children’s negative emotions, and parental beliefs about the
manipulative nature of children’s emotions and autonomy of
children’s emotions significantly suppressed the growth of EC.

Our findings indicate a significant relationship between
parents’ emotion-related beliefs and toddlers’ development of EC
and hence the importance of understanding parents’ beliefs. It is
important for related parenting programs and parent/caregiver
educators to encourage supportive beliefs such as value/
acceptance of children’s negative emotions and point out that
interventions for both children’s behavior and parenting may be
effective through the detection of specific non-supportive beliefs,
such as the manipulative nature and autonomy of children’s
emotions (i.e., the non-supportive meta-emotions).

The effect of parental belief about costs of positive/negative
consequences of children’s emotions was not significant,
although the association was in the expected direction. The association between costs of positive/negative consequences of
children’s emotions and EC have been attenuated due to
socially desirable responses. According to Halberstadt and
colleagues (2013)[21], the dimension of costs of positive/
negative consequences of children’s emotions was related to
social desirability, which was shown in the assessment of
discriminate validity in relation to parents’ tendency to respond
to the questions in socially favorable ways. Although the chance
of socially desirable responses may be lower since parents
completed the questionnaires at home, parental concerns about
behaving in ways deemed socially desirable may still confound
their perception about children’s emotions.

The association between the parental belief dimension
about parental knowledge and development of EC was barely
significant. This could have been because the children in this
study were too young. Items in the PBACE addressing parental
knowledge of children’s emotions were assessed as a way of
communicating to their children. Responses to these statements
may be influenced by the ages and language skills of the children
studied (e.g., parents should encourage their child to tell what
he/she is feeling; it is important for children to tell their parents
everything that they are feeling).

The relationship between the other two dimensions of PBACE
(i.e., the parental beliefs about children’s control of their own
emotions and the stability of children’s emotions) and children’s
development of EC were not found in this sample. Although
we assessed the contribution of children’s control of their own
emotions and stability of children’s emotions, we found that these
dimensions hardly decrease children’s development of EC. Such
results do not indicate that these dimensions are not important
in parental socialization of EC. Instead, there may be confounding
factors pertaining to cultural values or developmental stage
differences in parenting behaviors that need to be further
investigated in future research.

Parental socialization behaviors have been shown to
mediate the influence of parents’ emotion-related beliefs
and cultural factors (i.e., norms and values about emotions)
on children’s social-emotional development in general[5,9].
However, although culture and ethnicity can influence parents’
beliefs about emotion in the family, the association between
parental beliefs and child development outcomes remains across
multiple cultural groups [19,37]. For example, Perez-Rivera and
Dunsmore (2011)[38] found that Latino mothers with a stronger
belief that children can learn about emotions on their own had
children with lower emotional understanding, whereas mothers
with greater Anglo acculturation had children with better
emotional understanding, granting that Latino populations in
general have a tendency to emphasize collectivism, while Euro-
American populations tend to emphasize individualism [39],
and the varying emphases impact parents’ socialization goals
and children’s emotional understanding. Little study has been
done to investigate the cultural context of a Taiwanese family in
relation to emotional socialization. Yet, it is reasonable to expect
that the associations between the parental emotion-related
beliefs and child development of EC found in this study remains
in other samples (in western countries or more isolated and
hence less westernized sections of Taiwan), although a variance
in parents’ goals and beliefs with regard to emotions may exist
due to cultural differences.

Several methodological considerations need to be taken into
account when the findings of this investigation are interpreted.
Although significant effects of some dimensions of the PBACE in
the predicted direction emerged, effects of some other dimensions
tended to be weak. Part of the explanation for this may lie in the
way the constructs were measured. For example, as previously
mentioned, the items assessing parents’ knowledge about
children’s emotions were based on communication between
parents and their children. Responses to these statements may
be influenced by the age and the language skills of the children
studied. Therefore, future research may need to develop tools
for improved measurement of parents’ emotion-related beliefs
about children in early childhood.

We wish to take the first step in examining the parental
beliefs about children’s emotions as emotion-related parenting
precursors of EC in the early developmental stages-infancy and
toddlerhood. Such information would be helpful in learning how
to best build effective interventions (e.g., whether certain groups
of parents should be the main targets of interventions).

CONCLUSION

In sum, the results of this study show that parental beliefs
about children’s emotions have a significant impact on young
children’s development of EC. There was a linkage found
between parents’ emotion-related beliefs as a whole and the
development of EC when children’s pre-existing temperaments
were taken into account. Further analyses established that
there are significant associations between certain dimensions
of parents’ emotion-related beliefs and change in EC. The results indicated the critical role of parents’ emotion-related beliefs in helping young children’s development of EC. The results suggest that understanding parents’ emotion-related beliefs will be helpful for pediatrician and early childhood researchers seeking to promote young children’s development of EC.

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REFERENCES


