

Research Article

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

Chang Chia-Hui¹, Shuju Lee², Huahui Chiou², and Ishien Li^{2*}¹Department of Social Welfare, National Chung Cheng University, Taiwan²Department of Child Care and Education, Hungkuang University, Taiwan

*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: liishien@gmail.com

Submitted: 13 February 2017

Accepted: 14 July 2017

Published: 17 July 2017

ISSN: 2373-9312

Copyright

© 2017 Li et al.

OPEN ACCESS

Keywords

• Emotion; Effortful control; Parenting; Parental beliefs; Early childhood

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. When the children were 24 months old, 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 and 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.

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].

Socialization 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].

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 guilt 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

[21]. 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 their 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 enjoy listening 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 interruption 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"; $\alpha = .77$ for this sample), (2) the manipulative nature of children's emotions (four items; sample item: "Children use emotions to manipulate others"; $\alpha = .77$ 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"; $\alpha = .86$ 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"; $\alpha = .77$ 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"; $\alpha = .73$ 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"; $\alpha = .85$ 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"; $\alpha = .94$ 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 ($p < .05$; R^2 change

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

Child characteristics obtained with ECBQ	Time	Mean	SD	T	P
EC	T1	3.89	0.68	-3.19	.002*
	T2	4.08	0.57		
Inhibitory control	T1	4.09	1.00		
	T2	4.11	1.03		
Attention capability	T1	3.92	0.51		
	T2	3.97	0.79		
Low-intensity pleasure	T1	4.72	0.90		
	T2	4.83	0.88		
Negative affect	T1	3.22	0.65	2.56	.012*
	T2	3.08	0.65		
Discomfort	T1	3.24	1.32		
	T2	2.70	0.89		
Sadness	T1	3.61	0.88		
	T2	3.40	0.80		
Frustration	T1	3.41	0.84		
	T2	3.45	0.89		

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 30months old (T2) as a dependent variable.

Predictors	Standardized β	Sig. of β	R ²	Change in R ²	Change in F	Sig. of change in F	Df	p
Model 1			.366	.366	27.368	.000	2,95	<.001*
EC at T1	0.531	<.001*						
Negative affect at T1	-0.248	.003*						
Model 2			.494	.128	3.187	.005	9,88	<.001*
EC at T1	0.452	<.001*						
Negative affect at T1	-0.276	.002*						
Costs of emotions at T1	-0.144	.173						
Manipulative nature at T1	-0.268	.022*						
Control at T1	-0.050	.606						
Autonomy at T1	-0.298	.003*						
Stability at T1	-0.015	.857						
Value/acceptance at T1	0.310	.020*						
Parental knowledge at T1	0.142	.156						

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.

= 12.8%). 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],

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 may 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.

ACKNOWLEDGEMENTS

This study was supported by 103-2410-H-241-001 from the Ministry of Science and Technology (MOST) in Taiwan. The content is solely the responsibility of the authors and does not necessarily represent the official views of the MOST. The corresponding author takes responsibility for the integrity of the data and the accuracy of the data analysis. The content of this manuscript was not disseminated in any form prior to publication. The authors thank all participating families for their making this work possible.

REFERENCES

- Eisenberg N, Hofer C, Vaughan J. Effortful control and its socioemotional consequences. In: Gross JJ, editor. *Handbook of emotion regulation*. New York, NY: Guilford Press. 2007; 287-306.
- Kochanska G, Knaack A. Effortful control as a personality characteristic of young children: antecedents, correlates, and consequences. *J Pers*. 2003; 71: 1087-1112.
- Spinrad TL, Eisenberg N, Silva KM, Eggum ND, Reiser M, Edwards A, et al. Longitudinal relations among maternal behaviors, effortful control and young children's committed compliance. *Dev Psychol*. 2012; 48: 552-566.
- Blair C, Razza RP. Relating effortful control, executive function, and false belief understanding to emerging math and literacy ability in kindergarten. *Child Dev*. 2007; 78: 647-663.
- Eisenberg N, Chang L, Ma Y, Huang X. Relations of parenting style to Chinese children's effortful control, ego resilience, and maladjustment. *Dev Psychopathol*. 2009; 21: 455-477.
- Li I, Pawan C, Stansbury K. Emerging effortful control in infancy and toddlerhood and maternal support: A child driven or parent driven model? *Infant Behav Dev*. 2014; 37: 216-224.
- Rothbart M, Bates J. Temperament. 3. 6th edn. In: W. Damon, Richard LM, Eisenberg N, editors. *Handbook of child psychology: Social, emotional, and personality development*. Hoboken, NJ: John Wiley & Sons, Inc. 2006; 99-166.
- Rothbart MK, Derryberry D. Temperament in children. In: C. von Hofsten, Backman L, editors. *Psychology at the turn of the millennium: Social, developmental, and clinical perspectives*. 2. East Sussex, UK: Psychology Press. 2002; 17-35.
- Putnam SP, Gartstein MA, Rothbart MK. Measurement of fine-grained aspects of toddler temperament: the early childhood behavior questionnaire. *Infant Behav Dev*. 2006; 29: 386-401.
- Putnam SP, Spritz BL, Stifter CA. Mother-Child Co regulation during Delay of Gratification at 30 Months. *Infancy*. 2002; 3: 209-225.
- Calkins SD, Johnson MC. Toddler regulation of distress to frustrating events: temperamental and maternal correlates. *Infant Behav Dev*. 1998; 21: 379-395.
- Eisenberg N, Morris AS. Children's emotion-related regulation. *Adv Child Dev Behav*. 2002; 30: 189-229.
- Eisenberg N, Cumberland A, Spinrad TL. Parental Socialization of Emotion. *Psychol Inq*. 1998; 9: 241-273.
- Cleary RP, Katz LF. Family-level emotion socialization and children's comfort with emotional expressivity. *The Fam Psycho*. 2008; 24: 7-13.
- Dunsmore JC, Her P, Halberstadt AG, Perez-Rivera MB. Parents' Beliefs about Emotions and Children's Recognition of Parents' Emotions. *J Nonverbal Behav*. 2009; 33: 121-140.
- Gottman JM, Katz LF, Hooven C. Parental meta-emotion philosophy and the emotional life of families: Theoretical models and preliminary data. *J Fam Psychol*. 1996; 10: 243-268.
- Katz LF, Maliken AC, Stettler NM. Parental meta-emotion philosophy: A review of research and theoretical framework. *Child Dev Perspect*. 2012; 6: 417-422.
- Brajša-Žganec A, Hanzec I. Social development of preschool children in Croatia: Contributions of child temperament, maternal life satisfaction and rearing practices. *J Child Fam Stud*. 2014; 23: 105-117.
- Parker AE, Halberstadt AG, Dunsmore JC, Townley G, Bryant A Jr, Thompson JA, et al. Emotions are a window into one's heart": a qualitative analysis of parental beliefs about children's emotions across three ethnic groups. *Monogr Soc Res Child Dev*. 2012; 77: 1-136.
- Cole PM, Tan PZ. Emotion socialization from a cultural perspective. In: Grusec JE, Hastings PD, editors. *Handbook of socialization: Theory and research*. New York NY: Guilford Press. 2007; 516-542.
- Halberstadt AG, Dunsmore JC, Bryant A, Parker AE, Beale KS, Thompson JA. Development and validation of the Parents' Beliefs About Children's Emotions Questionnaire. *Psychol Assess*. 2013; 25: 1195-210.
- Dix T. The affective organization of parenting: adaptive and maladaptive processes. *Psychol Bull*. 1991; 110: 3-25.
- Day KL. Relations between parent emotion coaching and children's emotionality: The importance of children's cognitive and emotional self-regulation [Doctoral dissertation]. Virginia Polytechnic Institute and State University, 2014.
- Thompson RA. The development of the person: social understanding, relationships, conscience, self. 3. 6th edn. In: Damon W, Lerner RM, Eisenberg N, editors. *Handbook of Child Psychology: Social, Emotional, and Personality Development*. New York: Wiley. 2006; 24-98.
- Hoffman ML. Development of prosocial motivation: Empathy and guild. In: Eisenberg N, editor. *The development of prosocial behavior*. San Diego, CA: Academic Press. 1982; 218-231.
- Hoffman ML. Empathy and moral development: Implications for caring and justice. New York: Cambridge University Press. 2000.
- Graziano PA, Keane SP, Calkins SD. Maternal behavior and children's early emotion regulation skills differentially predict development of children's reactive control and later effortful control. *Infant Child Dev*. 2010; 19: 333-353.
- Blair C, Ursache A. A bidirectional model of executive functions and self-regulation. 2nd edn, In: Baumeister RF, Vohs KD, editors. *Handbook of self-regulation*. New York NY: Guilford Press. 2011; 300-320.
- Gunzenhauser C, von Suchodoletz A. Boys might catch Up, family influences continue: Influences on behavioral self-regulation in children from an affluent region in Germany before school entry. *Early Educ Dev*. 2015; 26: 645-662.
- Yap MB, Allen NB, Ladouceur CD. Maternal socialization of positive affect: the impact of invalidation on adolescent emotion regulation and depressive symptomatology. *Child Dev*. 2008; 79: 1415-1431.
- Eisenberg N, Cumberland A, Spinrad TL, Fabes RA, Shepard SA, Reiser M, et al. The relations of regulation and emotionality to children's

- externalizing and internalizing problem behavior. *Child Dev.* 2001; 72: 1112-1134.
32. Li Y, Sulik MJ, Eisenberg N, Spinrad TL, Lemery-Chalfant K, Stover DA, et al. Predicting childhood effortful control from interactions between early parenting quality and children's dopamine transporter gene haplotypes. *Dev Psychopathol.* 2016; 28: 199-212.
33. Dunsmore JC, Booker JA, Ollendick TH. Parental Emotion Coaching and Child Emotion Regulation as Protective Factors for Children with Oppositional Defiant Disorder. *Soc Dev.* 2013; 22.
34. Shipman KL, Zeman J. Socialization of children's emotion regulation in mother-child dyads: a developmental psychopathology perspective. *Dev Psychopathol.* 2001; 13: 317-336.
35. McElwain NL, Booth-Laforce C. Maternal sensitivity to infant distress and nondistress as predictors of infant-mother attachment security. *J Fam Psychol.* 2006; 20: 247-255.
36. Shumow L, Lomax R. Parental Efficacy: Predictor of Parenting Behavior and Adolescent Outcomes. *Parenting.* 2002; 2: 127-150.
37. Chen FM, Lin HS, Li CH. The role of emotion in parent-child relationships: Children's emotionality, maternal meta-emotion, and children's attachment security. *J Child Fam Stud.* 2012; 21: 403-410.
38. Perez Rivera MB, Dunsmore JC. Mothers' Acculturation and Beliefs about Emotions, Mother-Child Emotion Discourse, and Children's Emotion Understanding in Latino Families. *Early Educ Dev.* 2011; 22: 324-354.
39. Leyendecker B, Lamb ME, Harwood RL, Schölmerich A. Mothers' socialisation goals and evaluations of desirable and undesirable everyday situations in two diverse cultural groups. *Int J Behav Dev.* 2002; 26: 248-258.

Cite this article

Chia-Hui C, Lee S, Chiou H, Li I (2017) Predictions of Toddlers' Development of Effortful Control with Parental Beliefs about Children's Emotion. *Ann Pediatr Child Health* 5(3): 1133.