THE MEDIATOR ROLE OF EMOTION REGULATION ON THE RELATIONSHIP BETWEEN TEMPERAMENT AND PROBLEM BEHAVIORS

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The Mediator Role of Emotion Regulation on the Relationship

Between Temperament and Problem Behaviors

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DECLARATION OF ORIGINALITY

I, Duygu Meriç, certify that

- I am the sole author of this thesis and that I have fully acknowledged and documented in my thesis all sources of ideas and words, including digital resources, which have been produced or published by another person or institution;
- this thesis contains no material that has been submitted or accepted for a degree or diploma in any other educational institution;
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Date 24.02.2020

ABSTRACT

The Mediator Role of Emotion Regulation on the Relationship

Between Temperament and Problem Behaviors

The aim of the current study was to explore the mediating role of emotion regulation in the relationship between temperament and problem behaviors in preschoolers. The sample was composed of 200 preschoolers ranged from 57 to 80 monthly age including 95 girls and 105 boys, and the data were collected using the Child Behavior Questionnaire Very Short Form (CBQ), Child Behavior Checklist (CBCL/CTRF) from their mothers, Emotion Regulation Checklist (ERC) from their teachers. Mediational models utilizing PROCESS MACRO established by using two dimensions of problem behaviors (internalizing/ externalizing) as criterion variables, three dimensions of temperament (negative affectivity, surgency, and effortful control) as predictor variables, and two domains of emotion regulation (emotion regulation and emotion dysregulation) as mediators. In the mediation analyses, both two aspects of emotion regulation; emotion dysregulation, and emotion regulation did not play the mediator role on the link between temperament and problem behaviors. As the main effects, statistically significant relationships were found between temperament dimensions including negative affectivity, surgency, effortful control, and; internalizing and externalizing problem behaviors. In addition, significant positive relationships were found between dimensions of temperament involving surgency and effortful control; and emotion regulation. This study contributed to the early childhood education literature by investigating emotion regulation role on the link between temperament and problem behaviors from a developmental perspective.

ÖZET

Okulöncesi Dönemde Mizaç ile Problem Davranış Arasındaki Ilişkiye Duygu Düzenlemenin Aracı Etkisi

Bu çalışma, Milli Eğitim Bakanlığı'na bağlı devlet okullarının anasınıflarına devam eden çocukların mizaç ile problem davranışları arasındaki ilişkiyi ve bu ilişkiye duygu düzenlemenin aracı rolünü araştırmayı amaçlanmıştır. Çalışmanın örneklemi 57-80 yaş aralığında, 95'i kız ve 105'i erkek olmak üzere toplamda 200 okul öncesi eğitime devam eden çocuktan oluşmaktadır. Veriler Kişisel Bilgi Formu, Çocuk Davranış Değerlendirme Anketi Çok Kısa Formu (CBQ), Çocuk Davranış Listesi (CBCL / CTRF), Duygu Düzenleme Ölçeği (ERC) aracılığıyla toplanmıştır. Ölçüt değişkenleri olarak problem davranışların iki boyutu (içselleştirme / dışsallaştırma), yordayıcı olarak üç mizaç boyutu (olumsuz duygulanım, dışa dönüklük ve çabalı kontrol) ve aracı değişken olarak duygu düzenlemenin iki alanı (dayanıksızlık / olumsuzluk ve duygu düzenlemesi) kullanılarak on iki aracılık modeli oluşturulmuştur. Kurulan aracılık analizlerinde, duygu düzenlemenin iki boyutu olan dayanıksızlık/olumsuzluk ve duygu düzenlemenin; mizaç ile problem davranış boyutları arasındaki ilişkilere aracı rolü bulunmamıştır. Ana etkiler olarak, mizacın boyutlarından olumsuz duygulanım, dışa dönüklük ve gayretli kontrol ile içselleştirme ve dışsallaştırma problem davranışları arasında istatiksel olarak anlamlı ilişkiler bulunmuştur. Ayrıca, mizaç boyutlarından dışa dönüklük ve gayretli kontrol ile duygu düzenleme arasında anlamlı pozitif ilişkiler bulunmuştur. Bu çalışma, duygu düzenlemenin; mizaç ile problem davranış ilişkisindeki rolünü gelişimsel bakış açısıyla incelemesi bakımından erken çocukluk eğitimi literatürüne katkılar sağlamıştır.

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This thesis is dedicated to my beloved family,

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER 1

INTRODUCTION

Research clearly states that preschool period is critical for developing child in all areas of development including cognitive and language development, school readiness, and academic achievement, learning motivation, social and emotional development (Draper, Archmat, Forbes & Lambert, 2012; Senemoğlu, 2011, Yoleri, 2014). Generally, young children meet with school for the first time during preschool period as they are exposed to new rules, relationships and limitations that they can either adapt to or have difficulties and show behavioral problems (Yoleri, 2014). In this period, children's behavior problems are generally referred to as internalizing and externalizing problem behaviors and include a range of problems such as anxiety and depression, aggression and rule-breaking behaviors. Research shows that problem behaviors influencing children behaviorally and emotionally can be seen as one of the common difficulties that preschoolers are exposed to (Yumuş, 2013). It is much more important to notice that the leading possible reasons involving child-related, familial-related or school-related factors underlying these problem behaviors for implementing preventative approaches in educational arena and also investigate specific factors such as child- related factors for understanding maladjustment problems.

As problem behaviors in the early years have long-lasting adverse impacts on the development of the individual and thereafter, being aware of them and trying to detect the tendencies for problematic behaviors in the early years is of great significance. This can be seen as necessary for understanding the children showing problem behaviors and preventing them to have severe problems in the long run as

cumulative effect (Jansen, Wilde, Donker &Verhulst, 2010). Studies emphasize program-focused interventions such as school-based emotion education programs for reducing problem behaviors (Skovgaard, Houmann, Christiansen, Landorp, & Olsen, 2007). In addition, these interventions enable students to promote their regulation skills about emotional states for dealing with problem behaviors. Besides, with lack of such programs and interventions, the behavior problems can lead children to have bigger and more dangerous problems and some of which may persist into adulthood. Since research reveals that the high rates of internalizing and externalizing problem behaviors are observed in the preschool years (Basten, Althoff, Tiemeier, Jaddoe, Hofman, & Hudziak, 2013; Herrera & Little, 2005), concentrating on the early years is critical for both detecting and preventing children not to have severe psychological problems and disorders in their middle childhood, adolescence, and adulthood.

There are several factors influencing the problem behaviors of preschoolers. For example; family, school and child-related factors are of great importance with regard to affecting child behavioral outcomes in the early years. Research show that family concept including parenting styles, parental acceptance, parent-child relations (Linville, Chronister, Dishion, Todahl, Miller, Shaw, & Wilson, 2010) and school concept involving teachers' attitudes, physical conditions, teacher-student relations (Buyse, Verschueren, Doumen, Van Damme, & Maes, 2008) are important environmental factors for contributing to the development of problem behaviors. In addition to these elements, individual factors affect problem behaviors. Moreover, studies indicate that temperament (Contreras, Kerns, Weimer, Gentzler & Tomich, 2000; Sanson, Hemphill & Smart, 2004) and emotion regulation skills as child-related factors (child-own resources) (PauliPott, Haverkock, Pott, & Beckmann, 2007) have influences on socio-emotional, cognitive and academic development of

children and their behavioral outcomes. It is significant to notice that temperament of children helps researchers to have significant predictions about children reactions and dealing with difficulties in their environments (Rothbart & Bates, 2006). Hence, it can be perceived as critical concept for understanding maladaptive functioning. For example, Saudino (2005) demonstrated that temperament is related to behavioral issues involving both internalizing and externalizing problems. Scientists estimate that there are genetic determinants of temperament involving individual's genetic makeup and how it impacts their behaviors (Cohen, 2012). Furthermore, temperament affects how children select activities and environment; it has impacts on the replies of others, changes the effect of environmental factors, as well as emotional reactions, regulations of them by creating critical influences on their developmental outcomes involving adjustment and maladjustment problems (Keogh, 2003).

According to Denham et al., (2003) emotion regulation is essential in terms of not only regulating emotional states and negative emotions but also having and maintaining positive relations. This process involves children's coping with their own emotions such as anger, fear, irritability, distress and their reactivity level to other people reactions (Eisenberg& Fabes, 1992). Furthermore, emotion regulation and its component abilities can be perceived as basic capacities that can promote either typical and even positive development or especially atypical developmental outcomes (Eisenberg, Sprinad &Eggum, 2010). In addition, studies show that learning about managing and adjusting emotions changes from temperamental characteristics. It can be more difficult from people to another according to their different temperamental dimensions (Cole, Michel, & Teti, 1994). Comprehending the relationship between temperament and emotion regulatory processes are of great

importance for not only helping children to identify reasons behind aggressive or maladjusted behaviors but also developing appropriate strategies for children with emotional competence by taking temperamental tendencies and weak and strong sides of different temperament dimensions (Blair, Denham, Kochanoff, & Whipple, 2004).

Namely, temperament and emotion regulation can be perceived as two of the important child related constructs that have impact on behavioral problems in early childhood, in childhood and adolescence because as they are associated with managing one's emotional experiences behaviors following the emotion (Rothbart & Bates, 2006, Eisenberg et al., 2001). If a child cannot use regulatory skills (temperamental or emotion-related), they may have a tendency to show social adjustment problems (Eisenberg et al., 2004). While reactive components of temperament include negative affectivity, surgency, and effortful control can be perceived as a self-regulatory part of temperament (Rothbart & Bates, 2006). According to Eisenberg et al., (2004) effortful control as a temperamental factor is complicated and includes processes such as voluntarily focusing and shifting attention, inhibiting and activating behavior

Although it is hard to differentiate temperamental self-regulation from emotion regulation, Eisenberg et al., (2004) have discussed that effortful control can be perceived as different from emotion-related regulation on account of general control concept also called as inhibition and restraint. Even though effortful control involves voluntarily managed control that Rothbart defined it as inhibitory control, generally, inhibition can be seen as less voluntary and more automatic than emotion regulation processes that require more voluntary control. Moreover, effortful control is also believed to have a critical role in emotion regulation particularly in

modulation of anger (Deryberry & Rothbart, 1997). According to Konchaska (2000) influences of effortful control as on the emotional processes can be observed beginning at about 10 to 12 months of age by modulating anger such as infants' less angry reactions to seat belt restraints and effortful control develops with time. For example, toddlers can also start to modulate of joy by showing fewer reactions to puppet shows. Additionally, Rothbart et al. (2001) stated that anger and frustration in preschool years appears when continuing activity of children interrupts with their others especially their classmates or something that lead children's goals to be inhibited happens. Furthermore, effortful control as self-regulatory part of temperament according to psychobiological perspective of Rothbart (2001) is related to satisfaction with low intensity stimulus, smile / laughter and inhibitory control in difficult conditions that can trigger children to behave angry and in novel situations about controlling their emotional states. As a consequence, effortful control ability of children can be associated with how children modulates of their emotions such as anger and joy by influencing the degree of reactions coming from such emotions (Kochanska, 2000; Rothbart, 2001).

Emotion regulation can be learned with strategies and techniques in the early years compared to the temperament, which is influenced by more genetic elements as well as epigenetic factors. Learnability of this concept supports the belief that even though some children can have negative temperamental attitudes and tendencies, this cannot lead children to have adjustment problems when they learn more appropriate and effective emotion regulation strategies and develop emotion regulation abilities that enable them to control or adjust their negative feelings and emotional reactions. Teaching about emotions and emotion regulation skills can support positive developmental outcomes of children and prevent them to have negative ones such as

problem behaviors (Blair, 2004). Consequently, this study tries to investigate what the role of emotion regulation skills are as mediators on the link between temperament and problem behaviors.

The theoretical framework of this research is the epigenetic psychobiological systems approach of Gottlieb (1991, 2007), which is under the umbrella of the Developmental Systems approach. Based on this approach, it is important to highlight the notion that human development is the product of the interaction of individual factors involving genetic factors, neurons, behavioral development, and environmental factors. Thus, in this study, the goal was to bring together child (temperament) and emotion regulation as a product of the interaction between the child and the environment and their interaction together to focus on developmental outcomes. In fact, just as it is emphasized by dynamic systems theories, temperament as well is defined as the product of complicated interactions among biological, genetic and environmental elements across time (Shiner, 2012).

According to Rothbart psychobiological approach, environmental and behavioral factors have influences on the development of children but at the same time temperament can be seen as biologically rooted construct and have significant relations to neurobiological (genes and neurons) procedures involving reactivity and self-regulation processes (Rothbarth & Bates, 2006). For example, self-regulation is associated with neural connections in frontal parts of the brain including the anterior cingulate gyrus and lateral prefrontal parts of the neural system. It also involves functions related to creating increase in optimal vigilance, motivation and having necessary skills for interpreting information. Besides, reactivity is based on neurobiological processes involving arousal in endocrine and autonomic structures (Rothbart et al., 2007).

In terms of neurobiological development, there are also differences between processes of effortful control and emotion regulation. For example, the ventral prefrontal region of brain which is located in the frontal lobe is associated with the processes of risk and fear in more involuntarily situations since it is significant in the regulation of amygdala activity having critical role in the procedures of memory, decision-making and emotional responses (including fear, anxiety, and aggression) as well as inhibition of emotional responses. While this region is more related to immediate, reactive regulation and effortful control, the dorsomedial region linked with more deliberate, strategic control and emotion regulation processes (Ford & Kensinger, 2019). Dorsomedial region of the brain which is also a part of prefrontal cortex and adjust or makes regulations about emotional responses and also heart rate in a state of fear or stress (Corsi & Christen, 2012).

Furthermore, emotion regulation is affected by gene-environment interaction and behavioral development of children. Besides, studies show that there are neural bases of emotion regulation processes because there are significant implications in brain parts including the ventral anterior cingulate and ventromedial prefrontal cortices, in addition to the lateral prefrontal and parietal cortices during emotion regulation procedures (Etkin, Büchel & Gross, 2015). Hence, Gottlieb epigenetic psychobiological approach is used as a theoretical framework with respect to using child own resources/ individual factors (temperament & emotion regulation) for trying to explain child developmental outcomes as the combination of genes, neurons, behaviors, and environment as a bidirectional way.

Although temperament is a part of Gottlieb's approach due to its being a part of individual characteristics, genetic and epigenetic aspects of child development, Rothbart's (2006) psychobiological perspective is an important source for

understanding temperament definition and its effect on developmental outcomes. From a general perspective, temperament can be defined as individual differences in emotional and behavioral reactivity; and self-regulation (Rothbart, 2006). Reactivity and the self-regulatory process can be perceived as two significant concepts requiring attention for describing temperament from a psychobiological point of view. Moreover, because of the complexity of the emotion regulation concept, there is not a certain common definition of this construct. However, Cole, Martin, and Dennis (2004) defined emotional regulation as the ability showing the capacity to adjust and manage an emotion on account of reaching an aim. Moreover, Cicchetti, Ackerman, and Izard (1995) supported the view that emotion regulation is of importance for starting, enhancing and organizing adaptive behavior in addition to inhibiting stressful levels of negative emotional states and maladjustment problems.

Developmental studies continue to predict about problem behaviors including internalizing behaviors that can be defined as negative behaviors towards inwards including depressed mood, anxiety, and social withdrawal, somatic complaints and externalizing behaviors that can be defined as negative behaviors towards outwards involving aggression, disruption, acting out, and destruction of property (Bornstein, Hahn, & Haynes, 2010. Studies suggest that experiencing high levels of negative emotions, as well as failure to regulate emotions, increases the likelihood of problem behavior outcomes in the child. While positive emotion regulation is positively correlated with cognitive and socio-emotional development, experiencing problems in emotion regulation is associated with externalizing (aggression, risk-taking, and hyperactivity) and internalizing problem behaviors (Rubin et al., 1995; Rothbart & Bates, 2006, Calkins & Fox, 2002).

Even though both emotion regulation and temperament can be perceived as significant concepts getting attention to researchers concerning examining their associations with adjustment problems, there is a need for research showing that the relationship between problem behavior and temperament can be affected by emotion regulation as a mediating factor. Therefore, this research aims to examine the mediator role of emotion regulation on the relationship between temperament and internalizing/externalizing problem behaviors. The sample of the research was the preschool children (ages 5-8). The reason for choosing preschoolers as a sample is that the child started to use her/his emotion regulation skills actively in this period and temperament characteristics in preschool-age are more established and less variable than infancy.

CHAPTER 2

LITERATURE REVIEW

This study aimed to investigate the links between children's temperament and internalizing and externalizing problems and the mediator role of emotion regulation on these relationships. This chapter involves an explanation of the theoretical orientation and conceptualization of the study and a review of the relevant literature.

2.1 Temperament

There are five basic models of temperament that many researchers in the field have concentrated on: the behavioral styles approach of Thomas and Chess (1977), criterial approach of Buss and Plomin (1975), the psychobiological approach of Rothbart (1981; 1994), the emotion regulation model of Goldsmith and Campos (1987), and the behavioral inhibition model of Kagan (1997). Even though there are different theoretical frameworks related to the construct of temperament, there are some advantages of the Psychobiological Approach of Rotbarth (Dollar, 2008). To illustrate, this approach provides researchers an opportunity to have a dynamic and flexible perspective by taking biological, neural, behavioral and environmental ingredients into consideration.

Attention to the study of temperament in early childhood has been importantly rising because temperamental individual differences have been associated with later personality and social-emotional development of children, in addition to adjustment problems/problem behaviors in the field of psychopathology (Rothbart & Bates, 2006). Based on the psychobiological theoretical approach to temperament (Rothbart & Derryberry, 1981; Rothbart & Bates, 2006), which has

started to be prominent in temperament research, temperament is defined as constitutionally based individual differences in reactivity and self-regulation. Hence, temperament involves biological factors that influence one's emotional and behavioral reactivity and self-regulation on dimensions including positive affect and activity level, general negative emotionality, extraversion/surgency and effortful control/task persistence (Rothbart & Bates, 2006).

New perspectives and approaches have been influential in defining what the temperament is as the nature or nurture debate is still ongoing and somewhat central to our understanding of the nature and development of temperament. Although the role of nature and nurture seem to be both accepted in the study of temperament, these approaches have begun significance of environmental factors and while appreciating the importance of biological individual differences and especially contribution of genetic factors. The debate of nature versus nurture is still relevant not because researchers are arguing on rejecting one and accepting the other, the issue is rather to explore the stability of temperament and whether early years can alter the course of developmental traits or not.

According to Rothbart (2011), new temperamental systems focusing on controlling and inhibiting, the reactive aspects of temperament may transform these reactive traits, especially with time. For example, maturational processes from infancy to later childhood can contribute to creating changes in the expression and stability of emotional temperament factors (Bornstein, et al, 2015).

According to Shiner et al. (2012), “The newest definition of temperament traits are early emerging basic dispositions in the domains of activity, affectivity, attention, and self-regulation, and these dispositions are the product of complex interactions among genetic, biological, and environmental factors across time” (p. 437).

This definition seems more inclusive because it includes a holistic point of view by taking genetic, biological, psychological and environmental elements into account and also it reflects a psychobiological approach that emphasizes the interaction of inherited features of children, self-regulation abilities and environmental factors. Hence, temperamental traits develop in time with the influences of all the factors merging and interacting together. Recent conceptualizations emphasize that early individual characteristics can be perceived as one of the beginning points in a complicated process of interaction with the social settings, which continuously and successively creates changes in those characteristics and enriches the appearance of novel opportunities for overall development of children (Shiner & Caspi, 2003).

2.2 The psychobiological approach of temperament

According to Rothbart and colleagues (Rothbart, 1981; Rothbart & Ahadi, 1994), temperament can be described as constitutionally based individual differences in reactivity and self- regulation and includes the original “stylistic” temperament incorporation with emotion, motivation, and attention-related processes. Significant statement underlying this model is that differences in temperament are generally designed by responses of psychobiological procedures. In addition to this assumption, defining the difference between temperamental reactivity and self-

regulation is of importance with regard to Psychobiological approach of temperament. Reactivity can be defined as features of the individual's reactions to stimulus change, reflected in the temporal and intensive parameters of the somatic, endocrine and autonomic nervous systems (Rothbart & Derryberry, 1981). Self-regulation is defined as processes functioning to regulate this reactivity, including behavioral patterns of approach and avoidance, and attentional orientation and selection (Rothbart & Posner, 1985).

Rothbart, Ahadi, Hershey, and Fisher (2001) as defenders of psychobiological perspective of temperament, in the context of consistent findings over various studies, Children's Behavior Questionnaire is widely used measures of children temperamental tendencies. In this questionnaire temperament propose the following terminology for three higher-order traits: (a) negative emotionality, which includes irritability, negative mood, and high-intensity negative reactions and can be differentiated into distress to limitations (Irritable Distress: irritability and anger) and distress to novelty (Fearful Distress: fearfulness and shyness); (b) surgency related to positive affect and activity level, defined primarily by the scales of approach, high-intensity pleasure, and activity level; and (c) effortful control/task persistence, which has two subcomponents: the effortful control of attention (e.g., persistence and non-distractibility) and of emotions (the ability to inhibit one's behavior when necessary).

2.3 Emotion regulation

Emotion regulation can be perceived as a critical construct for the socio-emotional development of children with respect to its significant influences on social relations, communication and behavior patterns (Feldman, Barrett, Gross, Christensen, & Benvenuto, 2001; Gross & John, 2003). Researchers still discuss the definition of

emotion regulation because there is not a general agreement about the definition of this construct, but there is a consensus about the significance of emotion regulation concerning social adaptive functioning. Researchers focusing on emotion regulation attempt to establish their framework by taking recommendations of the definition into consideration. For example, Thompson (1994) stated that emotion regulation can be described as the inborn and acquired procedures behind controlling, assessing and adapting emotional reactions to achieve one's aims. Besides, Calkins and Hill (2007) suggested that procedures in emotion regulation can occur with an effort or without effort by using instruments aiming at modulating, promoting affective expressions and experiences, and inhibiting as well.

With respect to the significance of emotions and emotion regulation in developmental psychology, we can advocate that we should gain skills associated with managing emotional experiences as a way of dealing with socio-emotional and psychological difficulties for our well-being. Besides, physical arousal, attention, motivation, facial and behavioral expression are the necessary concepts that are required efforts for comprehending emotional experiences and having healthy emotional and cognitive development (Fettig, 2015).

Emotion regulation can be seen as a developing concept over time since a number of regulation skills to regulate emotions can be present from birth (Bozkurt & Demircioğlu, 2017). Hence, a great number of studies on the developmental literature of emotion regulation emphasize the progression of emotion regulation from infancy into adulthood (Thompson, 1994). The developmental progress involves the interaction of neurobiological (development of frontal lobe), conceptual (understanding of emotions and emotional processes) and social forces (parental characteristics, styles and responses) and the interaction of these factors can be

unique allowing for individual differences to be of importance along with common developmental tendencies (Calkins & Hill, 2007). It is thus reasonable to argue that emotion regulation is a skill with its biological, environmental and individual components.

According to Machem (2007), gaining emotion regulation skills in childhood is critical for children as a one of the important criteria for their socio-emotional development because it is to be able to provide appropriate responses to emotional strains of growing up and challenges faces in the environment. Infants' attempts to regulate emotions start from birth and are controlled by autonomic physiological mechanisms such as sucking for pleasure, crying for a disturbed condition, seeking help, approaching behaviors, hate gaze, distraction during the first year (Bozkurt & Demircioğlu, 2017; Calkins & Fox, 2002; Fox & Calkins, 2003). Although infants show early signs of emotion regulation, during the first years of life, the active role of the primary caregiver in emotion regulation is dominant (Brownell, & Kopp, 2007; Thompson, 1994). With the progress of cognitive development, towards the end of the first year, according to Kopp (1982) infants play a more active role in their emotion regulation processes. As active emotional processes take the place of passive emotional processes, the infants begin to use specific strategies including approaching, withdrawing or distraction to manage emotions purposefully in their responses to the outside world (Calkins & Dedmon, 2000).

Two years of age can be seen as a period in which the transition from passive emotion regulation to transition into active emotion regulation is complete (Rothbart, Ziaie, & O'Boyle, 1992). However, during this period, the child does not have the competence to regulate emotions independently (Calkins & Dedmon, 2000). Towards the age of three, children can become more independent of their mothers

and spend more time with their peers. Consequently, after the age of three, the child starts to know more about their emotions and exhibits their emotion regulation skills more consciously (Cole, Michel, & Teti, 1994).

By taking developmental information into consideration, it is reasonable to conclude that preschool years are significant since during this period children's chance to observe and participate in situations where emotional expressions during games and real situations are possible and actively participated social networks (peers, school, children of neighbors, teachers, etc.) are expanding. Actors of children's social contexts, such as parents and teachers of preschoolers have influences on their emotion regulation skills on account of being role models for them, guiding and teaching them emotion regulation procedures and strategies (Eisenberg, 1998). Moreover, not only parents and teachers' behavior patterns and attitudes are of importance in emotional regulation processes of children, but also parent-teacher relationship is worth mentioning because stronger parent-teacher relationship is associated with better scores of children related to emotion regulation skills (Acar et al., 2019). As well as social context of the children, their temperamental tendencies as child-own resource are also linked to emotion regulation abilities. When children use these skills, they can solve their problems in the classroom or home by using individual differences of their reactivity and self-regulatory processes as well (Rothbart & Bates, 2006).

2.4 Problem behaviors

2.4.1 Internalizing problem behavior

Internalizing behavior can be defined as problematic behavior in which negative feelings and emotions are turned inwards. Symptoms of internalizing behaviors involve depressed mood, anxiety, social withdrawal, somatic complaints (Bornstein, Hahn, & Haynes, 2010).

The results of the research emphasizing internalizing problems in preschool show that there is a link between preschool scores of internalizing behavior and later anxiety and depressive disorders. While several studies focus on the signs of problem behaviors in the preschool period, little research focuses on examining the precursors of internalizing behaviors (Fan, 2011).

When we take concurrent and longitudinal studies into account, we can notice that emotion regulation is associated with the internalizing behaviors from preschool to adolescence. For instance, nine years longitudinal research revealed that there was a significant correlation between the scores of 4-5 years old children with internalizing symptoms and their' at age 11 internalizing problem behavior scores as a predictor of future adjustment problems (Ashford, Smit, van Lier, Cuijpers, & Koot, 2008).

2.4.2 Externalizing problem behavior

Externalizing behaviors in preschool years include noncompliance, aggression toward peers, high activity level, and poor regulation of impulses (Campbell, 1995).Moreover, physical aggression involves hitting, biting, shoving others while verbal aggression includes teasing, threats and also tantrums, disobedience, agitation,

inattention, failure to comply with limits can be given as examples of disruptive behaviors as other forms of externalizing problem behaviors (Volkaert & Noel, 2016).

According to Eisenberg et al, (2009) study, children in their early years with excessive scores on the problem behavior tasks maintain to have externalizing difficulties and adjustment problems in their middle childhood. Furthermore, in terms of aggression, studies state that together with observed observation and parental reports related to externalizing problem behaviors can be seen as almost stable from toddlerhood to 5 years of age and above (Keenan & Shaw, 1994). That is, children with externalizing problems in their early years have an inclination to suffer from maladjustment and problems in school at a later age (Campbell, et al, 2000). Therefore, detecting externalizing symptoms in the early years of children is of great significance for preventing them from possible future maladjustment.

2.4.3 Gender differences in problem behaviors

Whereas some studies did not find any difference between the means of girls and boys with regard to maladaptive developmental outcomes (Akbaş, 2005; Arı & Yaban, 2016), Blair et al., (2004) stated that there is significant difference between gender and problem behaviors of children. Whereas girls have an inclination to show anxious and depressive behaviors as one of the subscales of internalizing problem behaviors, boys are more likely to behave aggressive and show rule breaking behaviors as parts of externalizing problem behaviors. In addition, Essau et al., (2010) indicated that gender differences in early years can be seen as significant predictor for later more problematic symptoms since the findings showed that

internalizing problems seen in girls in those period lead children to have more severe depression symptoms in their adolescence and adulthood compared to boys.

2.5 Dimensions of temperament and problem behaviors

Temperament researchers agree that children can display different responses when they encounter new situations and stimuli. Even though researchers have various methodologies and approaches for categorizing dimensions of temperament, they seem to agree that temperament is related to social competence and problem behaviors (Caspi, Henry, McGee, Moffitt, & Silva, 1995; Rothbart & Bates, 2006). For example, children who are low in temperamental surgency, or identified as inhibited children or children that are low in approach labeled differently yet all referring to the similar phenomenon, have inclinations to show negative reactivity, anxiety, wariness, and tendencies related to problem behaviors when they are exposed to unfamiliar situations (Rothbart, Ahadi, Hershey, & Fisher, 2001). Contrarily, children who are high in surgency or high in approach or exuberant, again labeled differently depending on how temperament is categorized (Coplan, Rubin, & Calkins, 1996; Rothbart, Ahadi, Hershey, & Fisher, 2001) are predisposed to be low in withdrawal, shyness and also high in positive affect, activity level and, impulsivity. As a result, temperament dimensions have been perceived as both protective and risk factors for the emergence of problem behavior (Sanson & Prior, 1999). Early problems especially in preschool years predict later externalizing disorder and antisocial behaviors. To illustrate, according to Tremblay et al., (1995) showing regular disruptive behavior can be perceived as significant predictor of future problem behaviors.

According to Rothbart (2006) widely and recently used dimensions concerning the psychobiological approach of temperament; there are three categories including negative affectivity, surgency, effortful control (self- regulation) having influences on problem behaviors involving internalizing and externalizing problem behaviors.

2.5.1 Negative affectivity

Negative affectivity can be perceived as a reflection of personal tendencies that may involve discomfort, sadness, fear, anger, frustration, and having difficulty in to be soothability (Rothbart et al, 2001). Negative affectivity may have influences on social adjustment outcomes of children whether directly or indirectly. With respect to direct influences, excessive negative affectivity is associated with social anxiety disorders. For instance, infants showing higher negative reactivity are exposed to have more behavioral inhibition characteristics which lead them to have potentially anxious behaviors including fear, shyness, or withdrawal in new or strange situations and environments (Cuncic, 2017). This inhibition also may lead children to have psychopathological disorders particularly anxiety disorders in their older ages (Tuscano et al., 2009). Furthermore, individuals who have difficulty in 'soothability' as reacting more strongly to social stress elements tend to show more depressive symptoms in their adulthood (Morris et al., 2012).

According to Fettig (2015), negative affectivity is not only related to internalizing problem behaviors but also has an impact on externalizing problem behaviors. Furthermore, children having difficulty in controlling negative emotionality tend to have disruptive disorders (Rubin, et al., 2003). Both genetic (largely) and environmental elements can be significantly contributing to the

association negative affectivity has with internalizing and externalizing problem behaviors (Mikolajewski, 2014). Studies indicate that genes can be perceived as risk factor for a child to have negative emotionality and possible psychological disorders, yet environmental factors play a crucial role in the manifestation of such problems. Environmental factors including maladaptive family environment and interpersonal relations can be linked with negative affectivity and internalizing or externalizing symptoms on the account of the negative influences of low parental warmth, chaotic home environment, and poverty (Shiner & Caspi, 2003, Van den Akker, 2013).

2.5.2 Surgency

Surgency or extraversion can be seen as activation of high energy and also used interchangeably with the terms of positive emotionality involving characteristics of enthusiasm, activity, appreciation of high intensity pleasure, approach tendencies (Gartstein & Rothbart, 2003).There are four different aspects of surgency including 'impulsivity', 'activity level', 'high-intensity pleasure' and 'low levels of shyness' (Rothbart et al., 2001). Firstly, impulsivity can be defined as speed of response initiation and also activity level can be described as the level of gross motor activity including rate and extent of locomotion. Additionally, high Intensity pleasure is related to amount of pleasure or enjoyment in situations including high stimulus intensity, rate, complexity, novelty, and incongruity. Moreover, shyness is associated with slow or inhibited approach in situations involving novelty or uncertainty

According to Holmboe (2016) high surgency can enable people to be energetic, positive and outgoing with enjoying adventure or exciting activities. Rothbart & Bates (2006) showed that highly surgent children are prone to be sensitive or more active with environmental alterations. Positive expectations,

spontaneous actions can be given as one of the behavioral tendencies of impulsive children have. They also tend to be happy and easily laugh. Specifically, according to National Institute of Mental Health (NIMH, 2006), children can show their impulsivity by taking away another child's toy, hitting their peers when they felt upset in their early years. They can have a difficulty for waiting their turn in games. They also tend to prefer things that are immediately rewarding.

Dougherty, Klein, Durbin, Hayden, and Olino (2010) stated that a higher positive affectivity score of three years of age children was one of the predictors of lower depressive symptoms at age ten. According to Garnstein, Putnam and Rothbart (2012) surgency and internalizing problem behaviors were negatively related. Namely, low surgent children have a tendency to show more internalized behaviors because children with low impulsivity are prone to show inflexible, embarrassed strict behaviors in novel or stressful situations. To illustrate, low surgent children have a tendency to suffer from shyness, social withdrawal and being alone in their social contexts during their childhood (Burgess, Marshall, & Fox, 2003).

With regard to impulsivity aspects of surgency, highly impulsive children are more likely to show behaviors for getting attention, potential rewards, and their desires without thinking about their behavioral outcomes. In addition, research indicates that there is a positive association between surgency and externalizng problem behaviors (Fettig, 2015). Namely, children with high surgency level are more likely to be exposed to externalizing behaviors because they are more likely to show extreme excitability and behaviors endangering self-end their peers in the classroom. They are prone to have difficulty waiting for their turn; this can lead them to have relational problems due to their impatience and high impulsivity. All of these tendencies coming from being highly impulsive can trigger them to behave verbally

or physically aggressive towards their peers and so they can show failure to comply with limits and classroom rules. They can also have difficulty in controlling their behavioral attempts.

2.5.3 Effortful control

Rothbart & Bates (2006) defined one of the self-regulatory constructs of temperament called effortful control as the effectiveness of executive attention involving the skills to restrain a dominant response and/or to stimulate a subdominant response, to focus on planning and to find errors. Effortful control can include inhibiting improper response and changing it with proper/appropriate reaction to given environmental stimuli (Rothbart, 2011). Effortful control is temperament-based control over activation or inhibition of behavioral tendencies by means of attentional processes such as shifting and focusing and inhibitory control mechanisms (Eisenberg, Spinrad, & Eggum, 2010; Lengua, Bush, Long, Kovacs, & Trancik, 2008; Rothbart & Bates, 2006).

According to Eisenberg and Spirad (2004), there are different abilities of effortful control involving 'activational control', 'voluntarily attentional regulation' and 'inhibitory control' (p. 264). These are significant skills for adaptation particularly children who have difficulties with adapting to an environment. Moreover, executive functioning of the prefrontal cortex that is responsible for coping with complex processes like reason, logic, and problem solving, and planning in terms of both cognitive and emotional development is associated with the structure of effortful control (Posner &Rothbart, 1998).

What is more, the development of effortful control in preschool years has critical associations for understanding the development of maladaptive behavior patterns (Fettig, 2015) because the capacity of effortful control is believed to increase markedly in the preschool years (Carlson, 2005).

The Effortful Control includes temperament-based self-regulation involving neural and brain functioning. In addition, it comprises processes of attention shifting and focusing when if necessary, the skill to activate and inhibit behavior when necessary, especially when children do not want to do so (for example, if there are competing goals. Besides, it is related to other executive function skills involved in integration, planning, and regulation of emotions and behaviors being perceived as more biological based. The processes in the Effortful Control can create an increase in the capacity of individuals to regulate both emotions and emotion-related behaviors, integrate and evaluate information, and provide a response that is gone through cognitive processing. Effortful Control is believed to be centered in the anterior cingulate entrance of the brain, but it also includes regions of the prefrontal cortex (Rueda, Rothbart, McCandliss, Saccomanno, & Posner, 2005), binds, and interacts with subcortical systems.

The relationship between effortful control and socio-emotional outcomes has effects on children both directly and indirectly (Rothbart & Bates, 2006). In a direct manner, in terms of the appropriate development of emotional and cognitive regulation of children's behavior, effortful control studies indicate that it provides children to develop attention skills and control their actions. Besides, indirectly, effortful control has an effect on academic achievement as a result of appropriate social functioning in the school environment (Fettig, 2015). Low effortful control can result in failure in academic success and lead children to have internalizing behavior

symptoms, including intensive depressed and anxious emotions (Eisenberg et al., 2003). Studies also state that there are negative correlations between effortful control and externalizing problem behaviors. That is, children with low effortful control are more likely to show higher externalizing behaviors involving aggression and rule-breaking behaviors (Fettig, 2015).

Additionally, it can be stated that low effortful control can be a stronger predictor for externalizing behavior because it has higher impacts on externalizing problems but weaker influences on internalizing problems. Effortful control also has a moderator role on the effect of negative affectivity on problems; children with high negativity tend to show fewer problem behaviors when they have stronger effortful control scores (Rothbart & Bates, 2006; Rothbart & Posner, 2006).

2.6 Temperament and emotion regulation

It is stated that temperament and emotion regulation can be difficult to distinguish since they are not completely different concepts and temperament also includes self-regulatory factors (Rothbart & Sheese, 2007). In addition, temperament cannot be seen as an adequate element for understanding the reasons behind the internalizing behaviors involving primarily anxious and depressive symptoms and externalizing problems including aggression rule-breaking behaviors because using emotion regulation has also an influence on problem behavior. For example, appropriate emotion regulatory strategies would moderate the influences of temperamental factors on the development of problem behaviors, even for children with highly negative temperament (Blair et al., 2004). Namely, we can explain the link between temperament and internalizing behaviors through the contributions of emotion regulation abilities.

Eisenberg et al., (2004) have tried to explain differences of emotion regulation and temperamental factors to putting into different categories as ‘willful regulation of emotion’, ‘emotion-relevant motivation and cognitions’, and ‘related behavior’ which generally achieved by effortful control being described as less voluntary, more reactive control-associated procedures. It has been proposed that effortful control that Rothbart (2003) defined as inhibitory control can be varied with regard to being autonomic and not voluntary control compared to the voluntarily emotional control process including managing affective arousal when it is of necessity.

Emotion regulation can be an effective predictor than temperament alone for children with intense negative affectivity with mostly having externalizing maladaptive behaviors, however, the effect of this regulatory ability cannot be the same for children those who do not have strong negative feelings (Eisenberg et al., 2002). Consequently, identifying internalizing behavior can be perceived as more difficult when we take those children into account compared to externalizing problems.

2.7 Temperament, emotion regulation, and problem behaviors

According to Kvisto (2011), emotion regulation has a mediating impact on the developmental context including temperament, and depressive symptoms, alcohol problems, and peer aggression. It has been proposed that temperamental factors and adjustment are associated with emotion regulation profiles, especially children’s answers to the ‘frustration’ tasks. With regard to the findings of that study, unregulated emotion responses in frustration components with lower effortful control may predict conduct problems and anxiety and depressive behaviors in addition to

later conduct disorders and depression. That is, children with low effortful control and low emotional regulation skills about frustration task are more likely to behave in a depressive and anxious way. They can also show more conduct problems compared to high effortful control. Consequently, teachers can try to be more aware of their students' temperamental tendencies and use effective emotion regulation methods suitable for them. Moreover, they enable them to obtain and develop emotional regulation abilities in classroom environment especially for children those who do not have higher scores on effortful control and having difficulty in controlling and adjusting their emotional states.

Furthermore, it is suggested that high inhibitory control can be linked with less internalizing and externalizing problems (Beijers et al., 2012). Parallel with these findings, Zalewski (2013) finds that low inhibitory control can be seen as a risk factor for externalizing symptoms of preschoolers. According to Fettig (2015), surgency as one of the significant temperament dimensions is positively related to information gathering as an emotion regulation strategy and negatively related to children's internalizing behaviors in preschoolers. Moreover, negative affectivity has a moderator role between passive waiting emotion regulation strategy and internalizing behaviors of children. What is more, with regard to active distraction emotional strategy, children with lower effortful control have a tendency to be exposed to externalizing behaviors compared to children with higher effortful control.

Children in low negative emotionality are more likely to use a more passive waiting emotional regulation strategy compared to children who have a high rate of negative affectivity (Fettig, 2015). This finding can be seen as different from the previous study indicating that girls with high levels of temperamental frustration and

irritability and used more passive waiting strategies show more internalizing problem behaviors (Blair et al., 2004). This situation can lead to an interpretation that regardless of high or low level of negative affectivity, using passive waiting strategies can be one of the predictors of having internalizing behaviors.

Both emotion regulation and temperament can be significant construct for developmental psychology particularly its influences on adjustment problems. Studies show that there are associations between temperament and problem behaviors including externalizing and internalizing problem behaviors. In addition, research indicates that emotion regulation skills of children are related to problem behaviors as well. With regard to these associations, it could investigate whether emotion regulation can have a mediator role on the link between temperamental dimensions and problem behaviors or not. Even though there is a scarcity of studies examining the role of temperament and emotion regulation in the development of maladaptive social behaviors, there is some research focusing on these relations. For example, Eisenberg et al., (2002) stated that emotion regulation is of importance for temperamental dimensions especially for children with higher negativity with respect to externalizing problem behaviors. However, emotion regulation abilities do not have an impact on children not having intense negative affectivity.

In more specifically, although some studies investigate the links between temperament and emotion regulation with regard to predicting social competence or externalizing problem behaviors, there are relatively few studies related to internalizing behaviors. Consequently, this paper focuses on not only externalizing problem outcomes but also internalizing behavioral outcomes even though it is relatively hard to detect its symptoms (Fan, 2011).

When we examine internalizing behavior and externalizing behavior's impacts especially in the early years, we notice that it is significantly associated with depression and anxiety in addition to aggressive and anti-social behavior seen later in life. In terms of importance of detecting problem behaviors in preschool period, the sample of this study involved preschool children aged 5 to 8. Furthermore, more stable temperamental characteristics of preschoolers and emotion regulation abilities starting to be actively used in that period can be given as other reasons why this study emphasize on early years.

CHAPTER 3

CONCEPTUAL MODEL AND OBJECTIVES OF THE STUDY

Gottlieb epigenetic psychobiological approach is applied as a theoretical framework in terms of using child own resources/ individual factors including temperament and emotion regulation skills for trying to clarify child developmental outcomes.

3.1 Origins of developmental systems theory

Developmental systems theory (DST) can be defined as a profoundly epigenetic approach to development, inheritance, and evolution. This theory focuses on the shared contributions of genes, environment, and epigenetic factors on developmental processes. Developmental systems theory (DST) appeared in the 1990s based on initial developmental systems perspectives. There are different developmental systems perspectives that contribute to explain developmental systems theory including Conrad Hal Waddington's introduction of the "developmental system", Gilbert Gottlieb's concept of probabilistic epigenesis, Susan Oyama's emphasis on Ontogeny of information, and finally Donald Ford and Richard Lerner's explicit identification of a "Developmental Systems Theory".

3.2 Gottlieb's epigenetic psychobiological approach

According to Gottlieb (1992), epigenesis can be perceived as more than genes that is, genes and environment, interact to support developmental outcomes of individual development. The epigenetic procedures involve the interaction between genes, the neural processes, organism's behavior and environmental effects. The origin of the term 'epigenesis' came from the seventeenth century and it can be based on the idea

that the embryo comes into existence during development from a developmental point of view (Gottlieb, 2002). Developmental psychobiology professor Gilbert Gottlieb's epigenetic perspective, coming after Waddington epigenetic studies, can be classified as more radical as it differentiates between 'predetermined' and 'probabilistic' epigenesis (Gottlieb, 1970). Predetermined epigenesists, according to Gottlieb, recognized behaviors to arise invariant schedules of neural growth and maturation. Furthermore, they tend to believe that the environment played little role in this maturational process (Griffiths & Tabery, 2013). In contrast to predetermined epigenesists, probabilistic epigenesists, according to Gottlieb and Schneirla, argued the behaviors to arise probabilistically; moreover, they think that the environment has more critical influences on the probabilistic processes.

In probabilistic epigenesis, the course of development focused on the interaction between each stage in development and environmental factors at that stage (Griffiths & Tabery, 2013). Research on the sensitive dependence of development on the environment as named by Gottlieb called 'developmental psychobiological systems view' (Gottlieb, 2001). Daniel Lehrman (1953) also emphasizes the very particular interplay between developing organism and its surroundings as defenders of developmental psychobiology. Gottlieb's studies with Ducklings focused on exploring the epigenetics of development and providing evidence for probabilistic epigenesis. He found evidence that there is an inherent uncertainty during development and the development is not invariant. His studies also shed light into the relationship between structure and function during the developmental process. He argued that there is a bidirectional structure-function relationship in development and that both structure and function receive direction from each other. According to Gottlieb (1970), this bidirectional relationship

suggests that structure directs function while it is also directed by function that referred to the former not only directed but also received direction from the latter (Gottlieb, 1970). Gottlieb (1976) compared the predetermined unidirectional versus the probabilistic bidirectional structure-function relationship as shown in Figure 1.

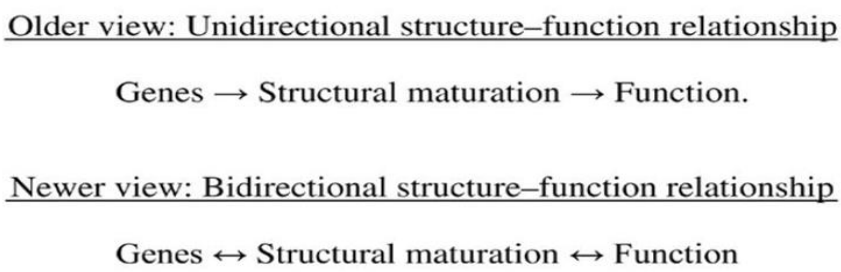

Fig.1 The predetermined unidirectional versus the probabilistic bidirectional structure-function relationship (Reproduced from Gottlieb, 1976, p.218)

Although the focus for the current study is not on the physiological aspects of development, Gottlieb's studies on birds that shed light into probabilistic epigenetics of development is important to take as a guide. Plainly put, Gottlieb's epigenetic approach illustrates the completely bidirectional and co-actional nature of genetic, neural, behavioral, and environmental influences throughout individual development as seen in Figure 2 and allows us to focus on the interplay between child related and environmental factors in order to understand child developmental outcomes.

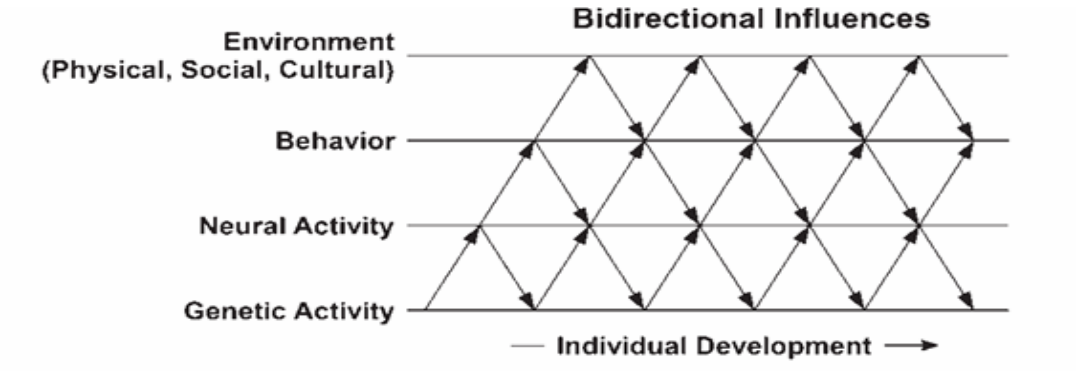

Fig.2 Gilbert Gottlieb's theoretical model of probabilistic epigenesist (According to Gottlieb, 1992)

3.3 Aim of the study

In this study, the problem behaviors of children and factors related to children's self-resources are investigated. Even though children's temperament is influenced by environmental factors, it has strong genetic contributions presented as a child related resource and also emotion regulation skills represent the interactional outcome of environmental and child related factors. Moreover, in this study, the role of emotion regulation skills as an outcome and an impact factor between temperament and problem behaviors are examined. Similarly, although problem behaviors are defined as child developmental outcomes in the study, given the probabilistic nature of development, is highly dependent on the interplay between the genes and the environment. A child may have genetic risks to have internalizing or externalizing tendencies, yet, problem behaviors occur when there is a malfunction in the processes such as emotion regulation. Thus, this study aims to investigate the mediating role of emotion regulation skills on the link between temperament and internalizing and externalizing problem behaviors. The target group for the study is preschool children (ages 5-8) because during this period, the child starts to use his / her emotion regulation skills actively and his temperamental characteristics are more settled and less variable than infancy.

3.4 Research questions and hypotheses

1. To what extent temperament (negative affectivity, surgency, and effortful control) associated with children's problem behaviors (internalizing and externalizing). It was expected that negative affectivity and surgency would be positively and effortful control would be negatively related to problem behaviors.

2. To what extent is temperament (negative affectivity, surgency and effortful control) associated with emotion regulation (emotion regulation and emotion dysregulation)? It was expected that negative affectivity and surgency would be negatively and effortful control would be positively related to emotion regulation. Moreover, negative affectivity and surgency would be positively and effortful control would be negatively linked to emotion dysregulation. Moreover, negative affectivity and surgency would be positively and effortful control would be negatively associated with emotion dysregulation.

3. To what extent is emotion regulation (emotion regulation and emotion dysregulation) associated with problem behaviors (internalizing and externalizing)? It was expected that emotion regulation would be negatively, and emotion dysregulation would be positively linked to internalizing and externalizing problem behaviors.

4. To what extent does emotion regulation (emotion regulation, emotion dysregulation) mediate the association between temperament (negative affectivity, surgency, effortful control) and problem behaviors (internalizing and externalizing)? It was expected that the impact of temperament of children on the problem behaviors of them would be mediated by their emotion regulation abilities. Since the present data were collected at on a point in time, we cannot make causal inferences from statistical models; rather results from the models could be conditional effects and should be interpreted as relationships among variables.

CHAPTER 4

METHODOLOGY

4.1 Sample

There were 203 preschool children in the study. As a first step, descriptive statistics involving skewness and kurtosis were tested to examine normality of assumptions of the distribution for each variable, (criterion for skewness is ±2 and for kurtosis is ±7; Curran, West, & Finch, 1996). Externalizing and internalizing subscales were out of accepted range, with regard to internalizing scale; skewness rate was 2.046 as being higher than accepted range. Furthermore, in terms of externalizing scale, kurtosis rate was 7.186 as another violation of normality assumption; that is to say, there was a violation of normality assumptions. As a result, three outliers removed from the data for obtaining normality assumptions.

Moreover, according to power analysis to get a power of .80 using Monte Carlo power analysis for indirect effects, the number of participants was computed at least 114 (Schoemann, Boulton, & Short, 2017). Therefore, in this research, there were 200 preschool children who attend public preschool programs for 57-80 months old children with an average 70, 88 (*SD = 5,122)*. Children continued early childhood education for more than six months. There were 95 female children and 105 male children.

After the obtaining ethics committee approval as seen in Appendix A, data collection process started. Firstly, for data collection, 998 public primary education schools with kindergartens and preschool classrooms as well as 132 public independent preschools (with preschool and kindergarten classrooms) in Istanbul were listed and off these schools 50 of them were identified in order to access 5

children from each school. These randomly selected schools included 39 different districts of İstanbul and the children and families coming from different (high-moderate-low) socio-economic backgrounds.

Mothers of the randomly selected participants filled out the participant information and consent form as represented in Appendices B and C as English and Turkish formats. Teachers of them also completed the informed consent form (see Appendices D and E).

In the research process, behavioral outcomes and temperament information about children were obtained from children's mothers. Furthermore, emotion regulation outcomes of children were obtained from teachers. Demographic information of 57 early childhood education teachers and information about children's emotion regulation were collected from them. Descriptive analysis of the demographic characteristics of participants regarding gender, age, educational status, and family status are presented in the results section in detail.

4.2 Instruments

After the consent forms collected, five different assessment instruments were used to collect data of the research. These instruments involves demographic information form of the children's parents (see Appendices F and G), demographic information form of preschool teachers (see Appendices H and I), Child Behavior Questionnaire Very Short Form (CBQ) (see Appendices J and K), Child Behavior Checklist CBCL / CTRF (see Appendices L and M) and Emotion regulation Checklist (see Appendices N and O). For each of five scales included English and Turkish versions respectively.

4.2.1 Demographic information of mother of children

Demographic information form for mothers of children included questions about mothers' educational status, and their age in addition to educational level, and age of fathers (Yaban &Arı, 2016). Information related to fathers was obtained from mothers .This form included questions about the age and gender of children attending pre-school education for at least 6 months. English and Turkish versions of this form were seen in Appendices F and G respectively.

4.2.2 Demographic information of preschool teachers

Demographic information form for preschool teachers both English and Turkish versions (See Appendices H and I) involved questions about teachers' age, gender, educational and occupational backgrounds.

4.2.3 Child behavior questionnaire very short form (CBQ)

According to Putnam and Rothbart (2006), temperament shows development and change with age. They developed and used three-factor patterns in the Child Behavior Questionnaire including negative affectivity, surgency, and effortful control. Negative affectivity; it includes discomfort, fear, anger/frustration, unhappiness, and plausibility. Surgency includes impulsivity, activity, approach, high-intensity satisfaction and shyness. Effortful control involves satisfaction with low intensity, laughter/laughter, obstructive control, perceptual sensitivity, and attention.

Putnam and Rothbart (2006) formed short and very short forms of this scale. In these forms, these 15 temperament characteristics with three broad factors are tried to be revealed. Short form involves 94 items and a very short form includes 36 items. In this study, Putnam and Rotbart (2006) very short form of child behavior list was used.

Mothers reported on children's temperament with the Child Behavior Questionnaire-Very Short Form (CBQ-VSF; Putnam & Rothbart, 2006), yielding scales of effortful control, negative affect, and surgency. The original child behavior questionnaire very short form was illustrated in Appendix J and Turkish version of it was shown in Appendix K. The CBQ-VSF includes 36 items on which parents report on questions about their children's typical reactions to different situations in the past 6 months.These questions are answered using a seven-point Likert-type scale on which 1 never, 4 about half the time, and 7 always. In previous work, the consistency in factor structure across the life span is remarkable (Putnam, Sanson, & Rothbart, 2002) and the CBQ-VSF specifically has indicated adequate stability throughout preschool (Putnam & Rothbart, 2006). Furthermore, the three broad factors including negative affect, surgency, and effortful control, have been linked to a number of adjustment outcomes making them useful traits to examine in current and future research focused on intervention and prevention of psychopathology (Shiner et al., 2012).

According to Putnam and Rothbart (2006) very short form includes 36 items for 12 items for each scale comprising negative affectivity, surgency and effortful control. Internal reliabilities of the domains of the checklist were computed with Cronbach's Alpha in SPSS. It was .700 for "negative affectivity" scale, .638 for "surgency", .859 for "effortful control" scale. Effortful control scale scores showed

that the items have relatively high internal consistency and the reliability coefficient of negative affectivity was also considered as acceptable. Although .70 is broadly regarded a criterion for good internal consistency, DeVellis (1991) and George et al. (2003) stated that alpha values higher than .60 could be perceived as acceptable. As a result, the reliability coefficient of surgency scale could be acceptable as well. Furthermore, according to Putnam and Rothbart (2006) for three groups involving White, African Americans and also impoverished sample, alpha coefficients (internal consistency) changed from 0.62 to 0.78 for the three subscales. They also accept these values referring the statement that alpha values greater than .60 could be viewed as adequate.

4.2.4 Child behavior checklist CBCL / CTRF

CTRF/1,5 -5, (Achenbach, 1997; Achenbach & Rescorla, 2001) is the caregiver/teacher version of the CBCL and was used to assess caregivers' and teachers' ratings of children's externalizing and internalizing behaviors. Similar to the CBCL, sums of items on the Internalizing and Externalizing scales were used to represent mothers' or teacher's reports of children's internalizing and externalizing problem severity with test-retest reliability of .90 at 8.7-day interval for CTRF/ 1,5-5. Moreover, in Turkish version of the CBCL scale were translated and adapted by Erol and Avcı (2002) and the Cronbach's alpha reliability coefficient of the scale was .95.

The scale items are grouped into various subscales such as emotional orientation, anxiety-depression, somatic problems, introversion, attention problems, and aggressive behaviors. C-TRF; caregiver and teacher report of CBCL was used in this study. Two different behavior symptom scores are obtained from the scale, involving Externalizing and Internalizing Scores. While internalizing scores include

subscales of emotionality reactive, anxious/depressed, somatic complaints and withdrawn scores; externalizing scores involve subscales of attention problems and aggressive behavior scores. The increase in scores indicates that the severity of problem behaviors increases. Moreover, in this study, the Cronbach's alpha reliability coefficient of the externalizing scores was .918, and the Cronbach's alpha reliability coefficient of the internalizing scores was .856. The child behavior checklist in English was displayed in Appendix L and also Turkish version of the scale was presented in Appendix M.

4.2.5 Emotion regulation checklist (ERC)

The Emotion Regulation Scale was developed in 1997 by Shields and Cicchetti. The scale was adapted to Turkish by Altan in 2006 and used to assess emotion regulation skills of children. The Emotion Regulation Scale consists of 24 items and two sub-scales, including emotion dysregulation and emotional regulation. Emotion dysregulation subscale involves items assessing arousal, reactivity, emotional sensitivity, expressions of negative emotions and mood lability; whereas the emotional regulation subscale includes items related to appropriate developmental behaviors, empathy, appropriate emotion display, and emotional awareness. For each item of the Likert type scale, the response options were collected in four groups. When evaluating the scale, options are scored from 1 to 4. “Never / rarely” option is rated as 1 point, “sometimes” option is 2 points, “frequently” option is 3 points and “almost always” option is 4 points. High scores on the scale indicate that the child has a high level of emotion regulation skills.

In the original scale, Shields and Cicchetti (1997) found the internal consistency coefficient of Cronbach alpha to be .96 for the emotion dysregulation

subscale and .83 for the emotional regulation subscale. In this study, Cronbach alpha scores were calculated as .837 for emotion dysregulation and .757 for emotion regulation subscale. English version of the scale was shown in Appendix N and Turkish version of survey was presented in Appendix O.

In addition, Altan (2006), 145 children aged 4-6 years in the study of the scale for the overall consistency coefficient for the mother-rated form .75, and .84 for the teacher–rated form were found. According to these findings, the internal consistency coefficients of the scale are quite high, and it is a valid and reliable instrument for both mother-reported and teacher-reported forms. However, on account of having higher internal consistency, preschool teachers working with children at least 6 months filled in the emotion regulation questionnaire in this research.

4.3 Procedure

After receiving approval from the Primary Education Department of Educational Faculty of Boğaziçi University and Ethics Committee of the Institute for Graduate Studies in Social Sciences for conducting research, İstanbul City Administration Department of the Ministry of Education was contacted to get permission to collect data from preschool classrooms of public schools in the İstanbul metropolitan area.

All of the preschoolers affiliated to government were listed involving 998 kindergartens located in primary schools and 132 independent preschools from 39 different districts of Istanbul. Then public schools that are located in the different districts of İstanbul to reach children and their families were randomly selected. Parents and classroom teachers were provided with consent forms to solicit their

approval to participate in the study giving them information about the aim of the research, research process and what is expected from them.

This research is a part of larger study funded by Scientific Research Projects fund of Boğaziçi University (BAP) exploring home and family dynamics and child developmental outcomes. Both the researchers as well as professional assistants from a research company collected data were the study. The assistants from the company, although experienced, were specifically trained for the study to collect data using the questionnaires in a one on one interview format. Informed consent forms were obtained from the mothers of preschoolers who were between 5 and 8 years old with the help of the interviewers. After filling out the informed consent forms, both the mothers and teachers of preschoolers filled out the demographic information forms. The mothers of preschoolers as participants in this research were completed the survey forms including “Children Behavior Questionnaire-Very Short Form”, “Child Behavior Checklist (CBCL-CTRF)” with the help of interviewers. Besides, the teachers of preschoolers as participants in this research completed solely one survey named “Emotional Regulation Checklist”. The survey forms for the mothers took approximately 30 minutes while the survey forms for the teachers took approximately 10 minutes. After completing the survey forms, the mothers and teachers were given some presents. The participants were encouraged to contact the researcher and The Ethics Committee in Social Sciences and Humanities in the case that they have any questions about the research.

4.4 Design and data analysis

This study was correlational, and the SPSS 24.0 (Statistical Package for the Social Sciences) computer program was utilized for data analysis. The significance level (α

level) was set at .05 for statistical tests. To test the research questions, the associations between the independent and dependent variables were examined.

Firstly, the demographic characteristics of the sample, including gender, age, mother and father education levels are presented as frequencies, percentages, and means, standard deviations, minimum and maximum scores. After demographics, descriptive data of variables are given as frequencies, percentages, mean scores, standard deviations, maximum and minimum scores as well. Preliminary analyses were conducted using the Pearson Product Moment correlation.

The assumptions of sample size, multicollinearity, outliers; and normality, linearity and homoscedasticity, independence of residuals (Pallant, 2011) were considered before a multiple regression analysis was conducted.

Mediational analysis can be seen as a widespread method with respect to its effectiveness in examining associations between variables and causal mechanisms behind those associations between variables in the field of psychology (Shrout & Bolger, 2002). According to Hayes (2013), the aim of mediation analysis is to determine to what extent some assumed causal variables has a significant effect on some results via one or more mediator variables. PROCESS Macro on SPSS for mediation models was used (Hayes 2013). The significance of the indirect effects was tested by using bootstrapping analysis (5000 replications) with 95% confidence intervals (Hayes 2012; Mackinnon, Fairchild, & Fritz, 2007). Bootstrapping is an intensive statistical technique for which resampling methods are utilized to provide empirical estimates of population distribution (Hayes 2012; Preacher & Hayes 2004). In the mediation models, we controlled for child gender, child monthly age based on previous research (Acar et al., 2019; Arı and Yaban, 2016) in regression analyses.

CHAPTER 5

RESULTS

There were 203 mothers whose children in different public preschools filled demographic information forms and temperament and problem behavior questionnaires. For getting normality assumptions, three outliers removed from data and so 200 children involved in this study. Fifty-seven early childhood education classroom teachers filled out the demographic information forms about themselves and emotion regulation checklist about their students.

5.1 Descriptive findings on demographic information of children and their parents

There were 95 female children 47.5% of the participants whose mean age (monthly) was 70.84 months *(SD = .574)*, and 105 male children 52.5% of participants whose mean age (monthly) was 70.92 months (*SD = .514).* Children's age (monthly) ranged from 57 to 88 months; female children's age (monthly) ranged from 57 to 82 months and male children's age (monthly) ranged from 57 to 80 months.

The age of participants in this research changed from 5 to 8. Fourteen percent of children were five years of age, 78.5% of them were six years old, 7.5% of them were seven years of age as shown in Table 1.

Table 1. Distribution of Participants According to Age

Age	*F*	%
5	28	14
6	157	78.5
7	15	7.5
Total	200	100

Moreover, the age of the mothers ranged from 24 to 54 years with an average age of 35.4 *(SD = 5.613,)* and the age of the fathers ranged from 24 to 59 years with an average age of 38.85 *(SD = 5.526).* Educational background information from mothers showed that 1.5% of mothers(N = 3) did not attend any schools, 0.5% of mothers (N = 1) were dropout from primary education, 16.5% of mothers (N = 33) had primary education diploma, 9.5 of mothers (N = 19) had secondary school diploma, 1.5% of them (N = 3) were dropout from high school education, 43% of them (N = 86) had high school diploma, 6.5% of them (N = 13) had a two year degree diploma, 16% of them (N = 32) had university diploma and 3% of them (N = 3) had graduate degrees (see Table 2).

Table 2. Distribution of Participants' Mothers According to Educational Status

Education Level	*F*	%
No Schooling	3	1.5
Dropout from primary education	1	.5
Primary Education	33	16.5
Secondary Education	19	9.5
Dropout from the high school education	3	1.5
High School Education	86	43
Associate Degree Program	13	6.5
University Education	36	18
Graduate Education Degree	6	3
Total	200	100

Furthermore, based on mother reports .5% of fathers (N = 1) were dropouts from primary education, 15.5% of fathers(N = 31) had primary education diploma, 14.5% of them (N = 29) were graduated from secondary school, 1.5% of them (N = 3) were dropout from high school education, 32.5% of them (N = 65) had high school diploma, 6.5% of them (N = 13) had associate degree diploma, 20.5% of them (N = 41) had university diploma, 3% of them (N = 6) had master's degrees.

5.2 Descriptive demographic information of preschool teachers

The average age of the early preschool teachers was 35 (M = 34.98, *SD* = 6.745) with ages ranging from 24 to 53. Those teachers' mean length of experience in teaching occupation was 11.90 years (*SD = 6.302*) and it ranged from 1 to 28 years. Teachers' mean length of experience in current schools that they were working as an early childhood education classroom teacher was 4.84 years (*SD = 3.41*) and it ranged from 1 to 12 years.

Fifty- six preschool teachers were female, just one teacher was male. According to marital status, 57.5% of respondent teachers were married, 5% of them were divorced and 15% of teachers were single. Four percent of the teachers had graduated from distance learning faculty, 2.5% of them had associate degree diploma, 78.5% of them were graduated from university, and 8% of them had master's degree.

5.3 Descriptive analysis of outcome and associational measures

Table 3 shows the means, standard deviations, minimum and maximum scores of Child Behavior Questionnaire Very Short Form (CBQ), Child Behavior Checklist CBCL / CTRF and Emotion regulation Checklist involving their subscales. The

subscales are Negative Affectivity, Surgency, and Effortful Control for Temperament CBQ very short form, Internalizing and Externalizing Problem Behaviors for Problem Behaviors CBCL/ CTRF, Emotion Regulation and Emotion dysregulation for Emotion Regulation ERC.

Table 3. Descriptive Statistics of the Study Variables

Measures	N	Min	Max	*M*	*SD*	Alpha value	Skewness	Kurtosis
CBQ very short form	200							
Negative affectivity	200	2.1	7.0	4.5	.90	.700	.06	-.02
Surgency	200	1.5	6.7	4.4	.79	.638	-.13	.72
Effortful control	200	2.3	7.0	5.7	.83	.859	-1.3	2.6
Child behavior checklist CBCL/ CTRF								
Internalizing problem behavior	200	.0	38.0	9.6	6.8	.856	1.2	1.8
Externalizing problem behavior	200	.0	44.0	9.7	8.4	.918	1.0	1.8
ERC								
Emotion regulation	197	1.6	4.0	3.0	.49	.837	-.51	.28
Emotion dysregulation	197	1.0	3.2	1.6	.40	.757	1.2	1.7

Note. CBQ = Child Behavior Questionnaire very short form), CBCL/CTRF (Child Behavior Checklist)
ERC (Emotion Regulation Checklist).

As a final step, bivariate correlations among research variables were conducted by Pearson Product Moment correlation (see Table 4). The results revealed that gender was significantly related to externalizing problem behaviors r = .190, *p* = .007. It was also significantly associated with surgency r =.156, *p* = .003, effortful control r = .208, *p* = .003 and emotion dysregulation r = .160, *p* = .028.

In addition, there was a significant negative relationship between child monthly age and emotion dysregulation r = -.211, *p* = .005. The findings indicated that emotion regulation was significantly associated with temperament variables that are surgency r = .209, *p* = .003 and effortful control r = .190, *p* = .007, on the other hand, emotion dysregulation was negatively related to effortful control r = -.159, *p* = .026. Emotion dysregulation was significantly associated with externalizing problem behavior r = .258, *p* = .000. When the correlation between temperament variables and the problem behavior outcomes were examined, it was found that there was a significant positive relationship between children's negative affectivity scores and internalizing problem behaviors r =.415, *p* = .000. Children with higher scores of negative affectivity were more likely to show internalizing problem behaviors. With regards to the relationship between negative affectivity and externalizing problem behaviors, there is also a moderate significant positive moderate association among them r = .379, *p* = .000, when the scores of negative affectivity increases, the scores of externalizing problem behaviors have a tendency to be higher. In addition, there was a negative correlation between children's surgency and internalizing problem behaviors r = -.169, *p* = .016, the findings indicated that children with higher surgency were less likely to have internalizing problem behaviors.

Effortful control was negatively associated with externalizing problem behaviors, r =-.285, p = .000, the result revealed that children with higher effortful control have a tendency to show less externalizing problem behaviors

Table 4. Pearson Correlations for Research Variables

Variable	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*
1.Gender	1								
2.Child monthly age	.009	1							
3. Surgency	.156*	.059	1						
4. Negative affectivity	.082	.069	-.003	1					
5. Effortful Control	-.208**	.002	.032	.034	1				
6. Emotion Regulation	-.054	.105	.209**	.090	.190**	1			
7. Emotion dysregulation	.160*	-.211**	.068	.047	-.159*	-.445*	1		
8. Internalizing problem behavior	.025	.072	-.169*	.415**	-.114	-.134	.033	1	
9. Externalizing Problem behavior	.190*	-.085	.122	.379**	-.285**	-.111	.258**	-.666**	1

Note. For gender, girls coded 0 while boys coded 1
Note. *p < .05, **p < .01

5.4 Assumptions requiring for multiple regression analyses

For testing the regression assumptions (Pallant, 2011), the distribution of the residuals and scatterplots of the residuals vs. predicted problem behaviors and each predictor in our model were examined in SPSS program. The results are reported in a detailed way below.

5.4.1 Linearity

The Linearity assumption was met by linear regression analyses were conducted with SPSS Program. The scatterplots with regression line were used to examine the linear relationships between variables.

5.4.2 Homoscedasticity

For checking homoscedasticity, scatterplot for regression standardized residuals for internalizing problem behavior was applied as seen in Figure 3.

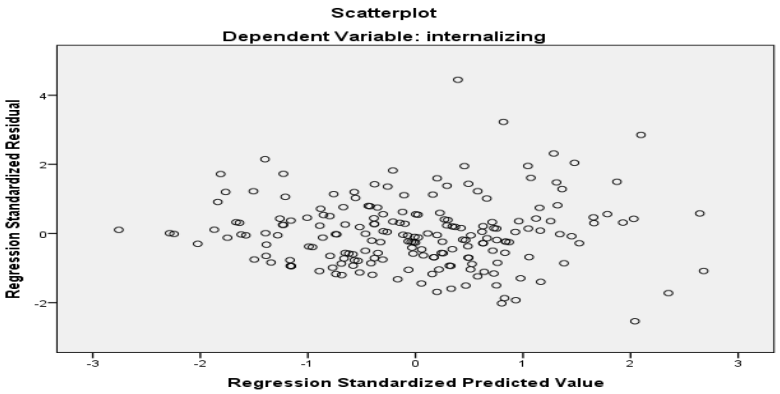

Fig.3 Scatterplot for regression standardized residuals for internalizing problem behavior

Because this scatterplot has a nearly rectangular shape, the assumption of homoscedasticity was met. Another scatterplot for regression standardized residuals for externalizing problem behavior was displayed in Figure 4.

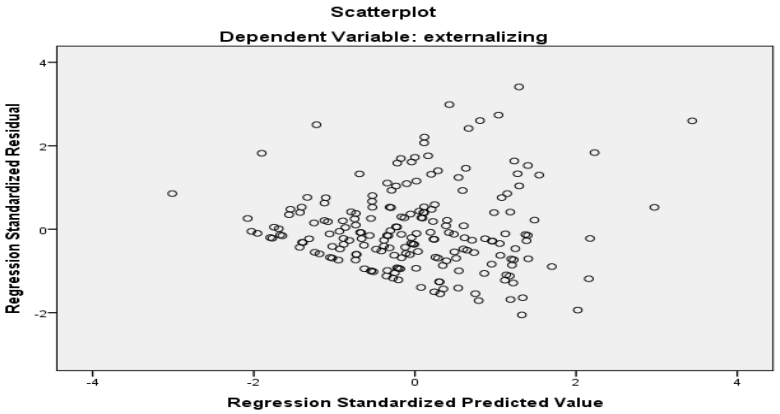

Fig.4 Scatterplot for regression standardized residuals for externalizing problem behavior

The residual plot appears as show a random pattern, so that homoscedasticity assumption appeared to be not violated.

5.4.3 Multicollinearity

Multicollinearity test was run among the variables to examine whether predictor variables that highly correlated with one another in predicting the outcome variable (Internalizing problem behaviors). The results of multicollinearity analyses showed that variance inflation factors (VIF) ranged from 1.020 to 1.387 and tolerance values ranged from .721 to .980, showing that there was no multicollinearity issue among the variables in the chosen model (see Table 5).

Table 5. Multicollinearity statistics

Collinearity Statistics	*Tolerance*	VIF
Negative Affectivity	.980	1.020
Surgency	.923	1.083
Effortful Control	.956	1.046
Emotion regulation	.721	1.387
Emotion dysregulation	.762	1.313

5.4.4 Normality

Descriptive statistics including skewness and kurtosis were tested to examine normality of assumptions of the distribution for each variable (criterion for skewness is ±2 and for kurtosis is ±7; Curran, West, & Finch, 1996). Externalizing and internalizing subscales were out of accepted range, in terms of internalizing scale; skewness rate was 2.046 as being higher than accepted range. Moreover, with regard

to externalizing scale, kurtosis rate was 7.186 as another violation of normality assumption; namely, there was a violation of normality assumption. Therefore, three outliers removed from the data. After removing outliers, descriptive statistics involving skewness and kurtosis were calculated again and then that time, normality assumption was obtained.

5.5 Results of the research

First, multiple regression analyses were conducted for both internalizing and externalizing problem behaviors. Furthermore, to apply mediation analyses, Process model were used for conducting mediational models including that (1) the mediators (i.e., emotion regulation, emotion dysregulation), independent variables (i.e., negative affectivity, surgency, effortful control) and dependent variables (i.e., internalizing and externalizing problem behaviors). In total, twelve mediation analyses were established since according to Hayes (2009), correlational preconditions that Baron and Kenny (1986) advocated and offered could not be sufficient justification for establishing mediation analyses from a new millennium perspective.

5.5.1 Results of multiple regression analyses

The results of the multiple regression analysis for predicting internalizing problem behaviors indicated that a significant regression equation was found ($F(7,168) = 6.563$, $p < .001$), with an R^2 of .182. The model was able to account 18% of the variance in children's internalizing problem behaviors. The analysis showed that solely negative affectivity $b = .434$, $SE = .502$, $p < .05$, was the predictor of children's internalizing problem behaviors. However, other variables including

effortful control b = -.071, SE = .685 p > .05, emotion dysregulation b = -.086, SE = 1.382 p > .05, surgency b = -.93, SE = .604 p > .05, emotion regulation b = -.143, SE = 1.112 p > .05, gender b = -.029, SE = .966 p > .05 and child monthly age b = .047, SE = .091 p > .05 did not predict children's internalizing problem behaviors significantly (See Table 6).

Table 6. Summary of Multiple Regression Analysis for Predicting Internalizing Problem Behavior

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	*t*	Sig.
Constant	7.320	9.165		.799	.426
Gender	-.385	.966	-.029	-.399	.691
Child monthly age	.061	.091	.047	.671	.503
Surgency	-.785	.604	-.93	-1.301	.195
Negative Affectivity	3.132	.502	.434	6.239	.000
Effortful Control	-.685	.685	-.071	-1.001	.318
Emotion Regulation	-1.974	1.112	-.143	-1.776	.078
Emotion dysregulation	-1.486	1.382	-.086	-1.075	.284

$^{*}p < .05;$ $^{**}p < .01$

Note. Dependent variable: Internalizing Problem Behavior

The multiple regression analysis for predicting children's externalizing problem behaviors indicated that a significant regression equation was found (F (7,168) = 7.843, $p < .000$), with an R^2 of .215. The model was able to account 22% of the variance in children's externalizing problem behaviors.

The analysis showed that negative affectivity b = .371, SE = .589, p < .01 and effortful control b = -2.81, SE = .803, p < .01were the predictor of children's externalizing problem behaviors. However, other variables including surgency b = .129, SE = .708, p > .05, emotion regulation b = -.012, SE = 1.304 p > .05, emotion dysregulation b = .130, SE = 1.621 p > .05, gender b = .694, SE = 1.134 p > .05 and child monthly age b = - .133, SE = .107 p > .05 did not predict children's externalizing problem behaviors significantly (See Table 7).

Table 7. Summary of Multiple Regression Analysis for Predicting Externalizing Problem Behavior

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	*t*	Sig.
Constant	10.074	10.753		.937	.350
Gender	.694	1.134	.043	.612	.541
Child monthly age	-.133	.107	-.085	-1.239	.217
Surgency	1.294	.708	.129	1.827	.069
Negative Affectivity	3.204	.589	.371	5.440	.000
Effortful Control	-2.812	.803	-.244	-3.500	.001
Emotion Regulation	-.199	1.304	-.012	-.153	.879
Emotion Dysregulation	2.696	1.621	.130	1.663	.098

$^{*}p < .05$; $^{**}p < .01$

Note. Dependent variable: Externalizing Problem Behavior

5.5.2 Mediation models

5.5.2.1 Mediational model 1

Second, it was tested mediating effect of emotion regulation for the relationship between negative affectivity and externalizing problem behaviors. The direct effect from negative affectivity to emotion regulation ($\beta = -.05$, $t = 1.41$) and that from emotion regulation to externalizing problem behavior ($\beta = 3\ .28$, $t = 5.56$) was not statistically significant as shown in Figure 5. Furthermore, the 95% confidence interval limits from bootstrapping analyses for indirect effect were [−.29, .07], indicating there was no significant indirect effect.

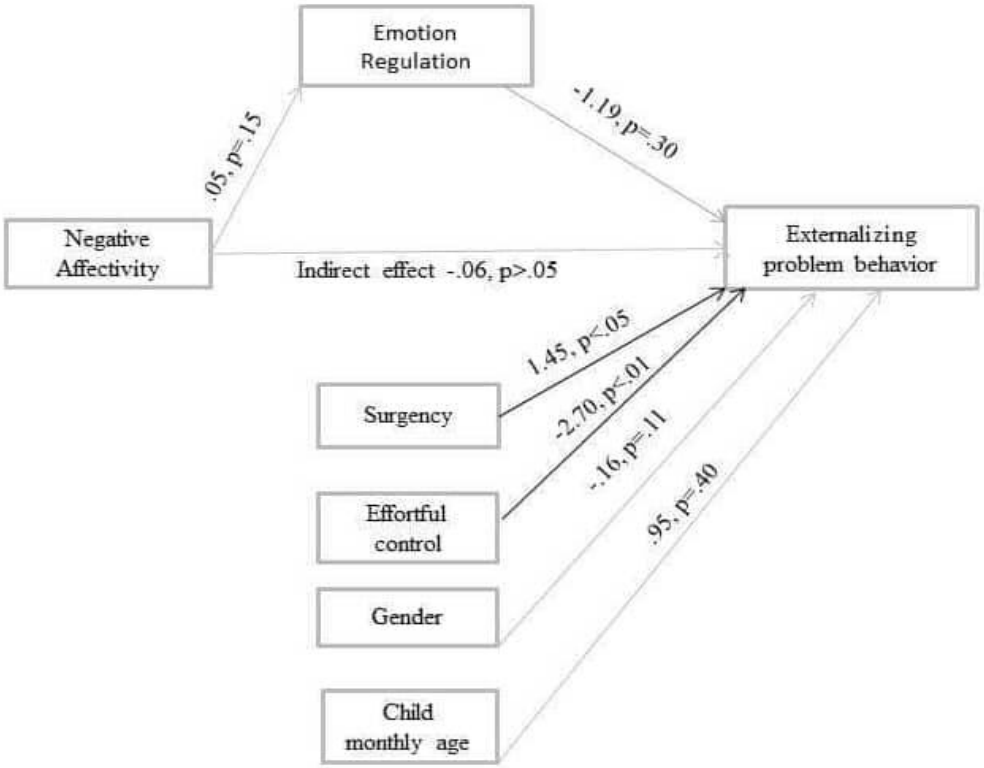

Fig. 5 Mediating effect of emotion regulation between negative affectivity and externalizing behaviors. Unstandardized coefficients are reported. Nonsignificant indirect effect = −.06, 95% CI [−.29, .07]

5.5.2.2 Mediational model 2

First, it was tested the mediating effect of emotion regulation on the relation between surgency and externalizing behavior. The direct effect from surgency to emotion regulation was statistically significant (β = .12, t = 2.68). Indeed, children with high levels of surgency are more likely to regulate their emotions. However, direct effect from emotion regulation to externalizing behavior (β = -1 .19, t = -1.02) was not statistically significant as presented in Figure 6. The 95% confidence interval limits from bootstrapping analyses for indirect effect were [-.49, .14], showing that there was no a significant indirect effect.

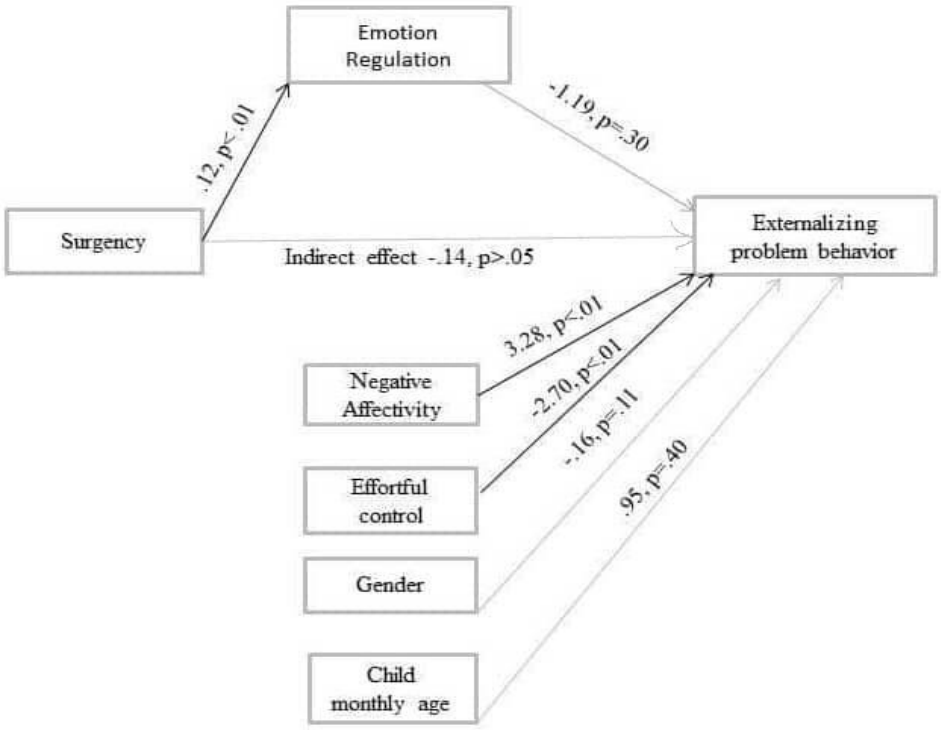

Fig. 6 Mediating effect of emotion regulation between surgency and externalizing problem behaviors. Unstandardized coefficients are reported. Nonsignificant indirect effect = -.14, 95% CI [-.49, .14]

5.5.2.3 Mediational model 3

Third, it was tested mediating effect of emotion regulation for the relationship between effortful control and externalizing problem behaviors. The direct effect from effortful control to emotion regulation (β = .08, t = 1.60) and that from emotion regulation to externalizing problem behaviors (β = -1 .19, t = -1.02) was not statistically significant as seen in Figure 7. In addition, the 95% confidence interval limits from bootstrapping analyses for indirect effect were [−.42, .09], indicating there was no significant indirect effect.

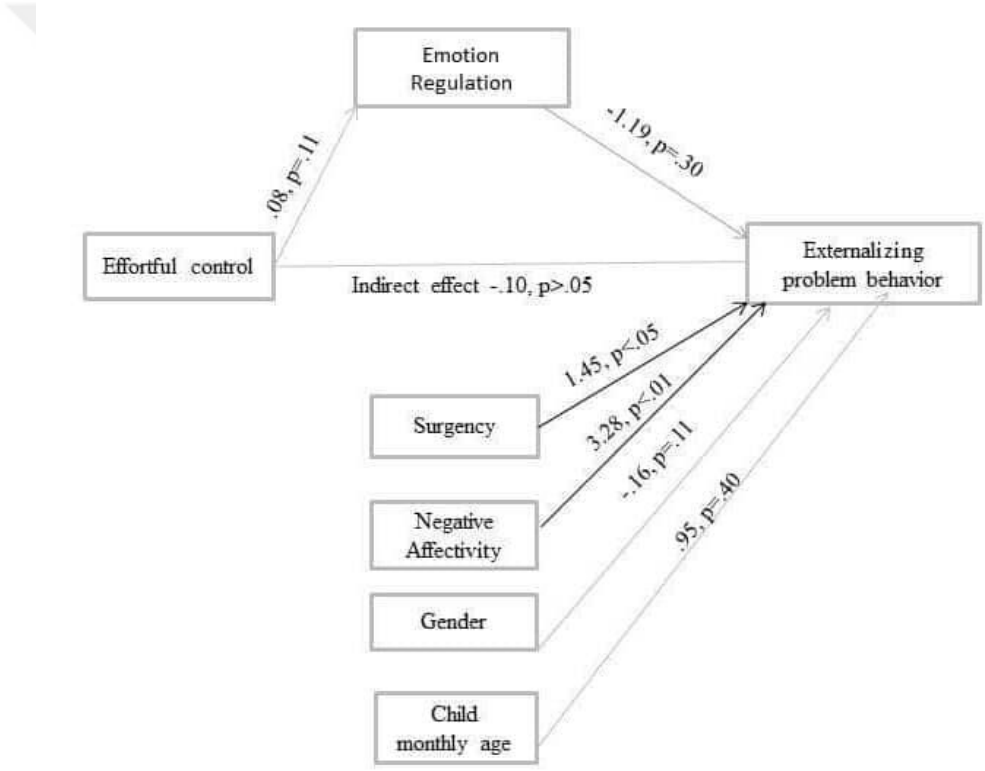

Fig. 7 Mediating effect of emotion regulation between effortful control and externalizing behaviors. Unstandardized coefficients are reported. Nonsignificant indirect effect = −.10, 95% CI [−.42, .09]

5.5.2.4 Mediational model 4

Fourth, it was tested mediating effect of emotion dysregulation for the relationship between negative affectivity and externalizing problem behaviors. The direct effect from negative affectivity to emotion dysregulation (β = .00, t = .27) and that from emotion dysregulation to externalizing problem behaviors (β = 2 .81, t = 1.95) were not statistically significant as shown in Figure 8. In addition, the 95% confidence interval limits from bootstrapping analyses for indirect effect were [−.17, .22], indicating there was no significant indirect effect.

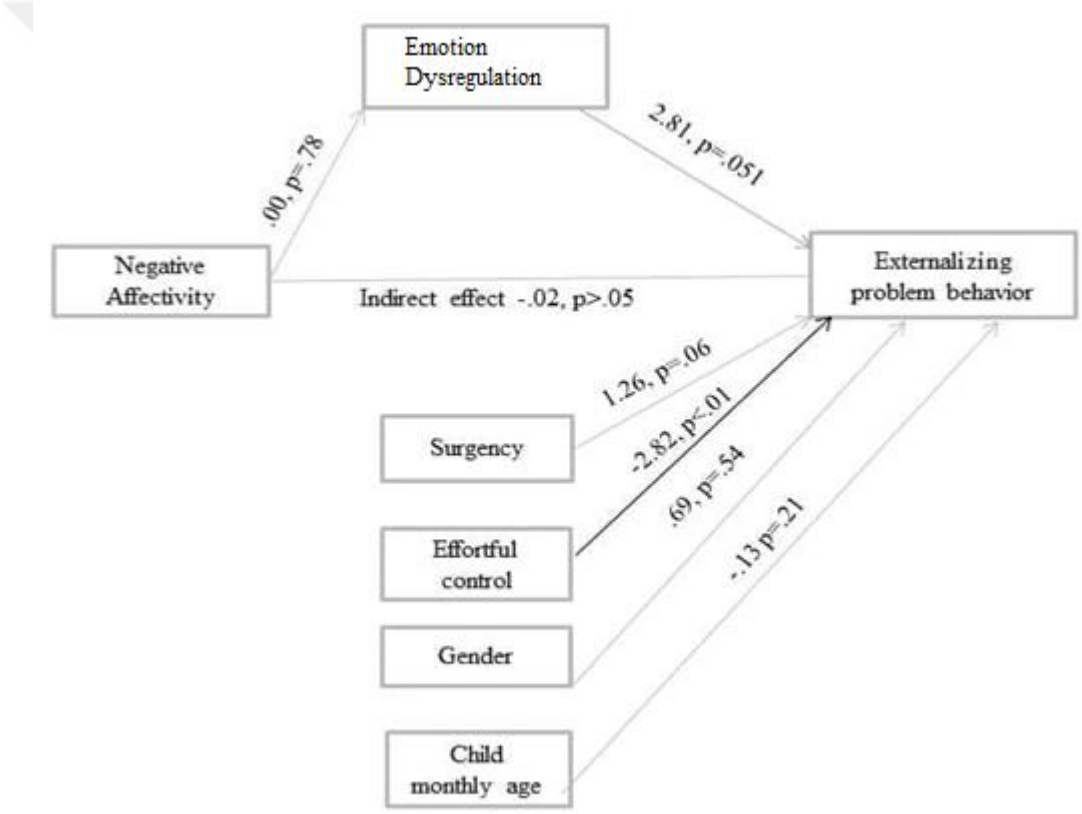

Fig. 8 Mediating effect of emotion dysregulation between negative affectivity and externalizing behaviors. Unstandardized coefficients are reported. Nonsignificant indirect effect = −.02, 95% CI [−.17, .22]

5.5.2.5 Mediational Model 5

Fifth, it was tested mediating effect of emotion dysregulation for the relationship between surgency and externalizing problem behaviors. The direct effect from surgency to emotion dysregulation (β = .01, t = .44) and that from emotion dysregulation to externalizing problem behaviors (β = 2 .81, t = 1.95) were not statistically significant as displayed in Figure 9. In addition, the 95% confidence interval limits from bootstrapping analyses for indirect effect were [−.18, .34], illustrating there was no significant indirect effect.

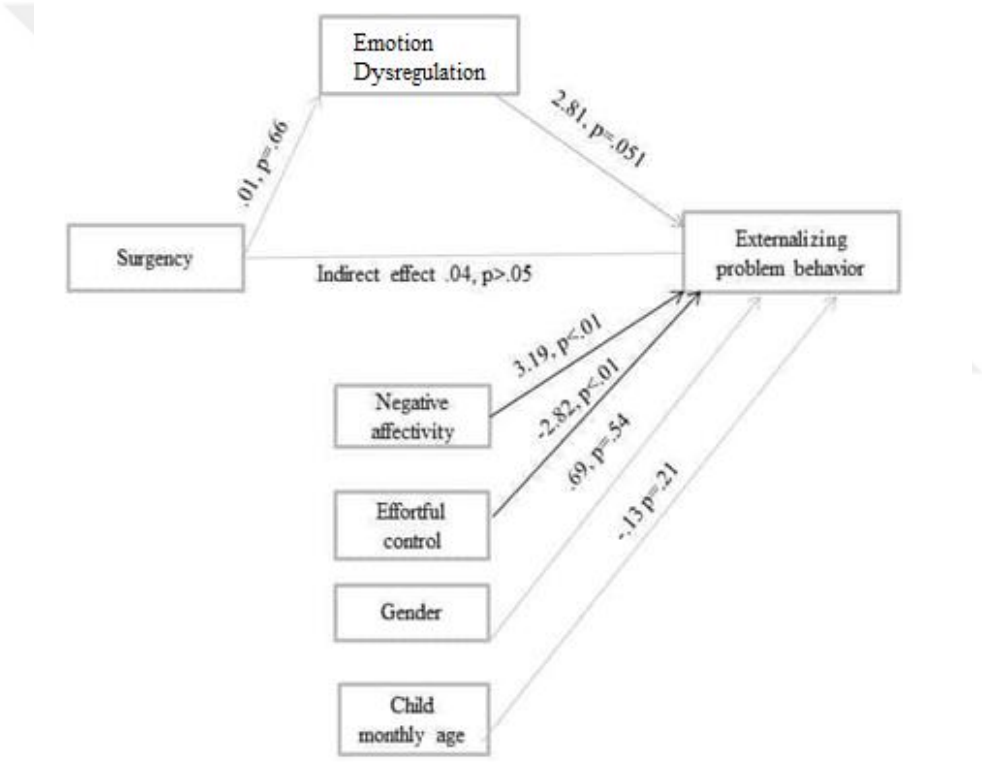

Fig. 9 Mediating effect of emotion dysregulation between surgency and externalizing behaviors. Unstandardized coefficients are reported. Nonsignificant Indirect effect = .04, 95% CI [−.18, .34]

5.5.2.6 Mediational model 6

Sixth, it was tested mediating effect of emotion dysregulation for the relationship between effortful control and externalizing problem behaviors. The direct effect from effortful control to emotion dysregulation (β = .00, t = .18) and that from emotion dysregulation to externalizing problem behaviors (β = 2 .81, t = 1.95) were not statistically significant as shown in Figure10. In addition, the 95% confidence interval limits from bootstrapping analyses for indirect effect were [−.32, .35], illustrating there was no significant indirect effect.

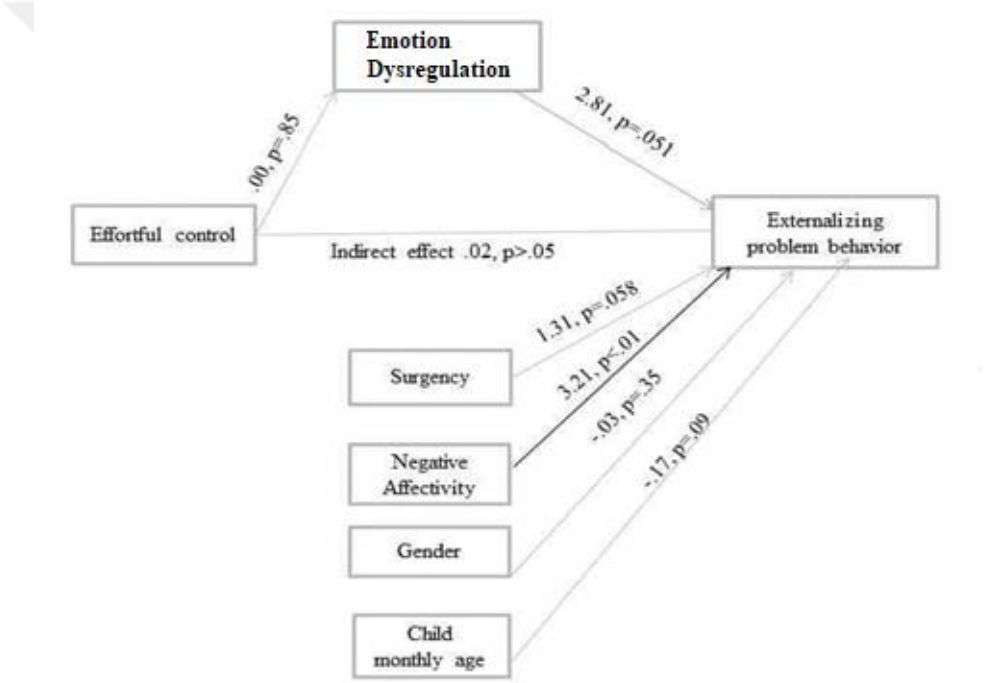

Fig. 10 Mediating effect of emotion dysregulation between effortful control and externalizing behaviors. Unstandardized coefficients are reported. Nonsignificant indirect effect = .02, 95% CI [−.32, .35]

5.5.2.7 Mediational Model 7

Seventh, it was tested the mediating effect of emotion regulation on the relation between negative affectivity and internalizing behavior. The direct effect from negative affectivity to emotion regulation (β = .05, t = 1.41) and direct effect from emotion regulation to internalizing behavior were not statistically significant (β = -1 .42, t = -1.02) as seen in Figure 11. The 95% confidence interval limits from bootstrapping analyses for indirect effect were [-.28, .04], showing that there was no a significant indirect effect.

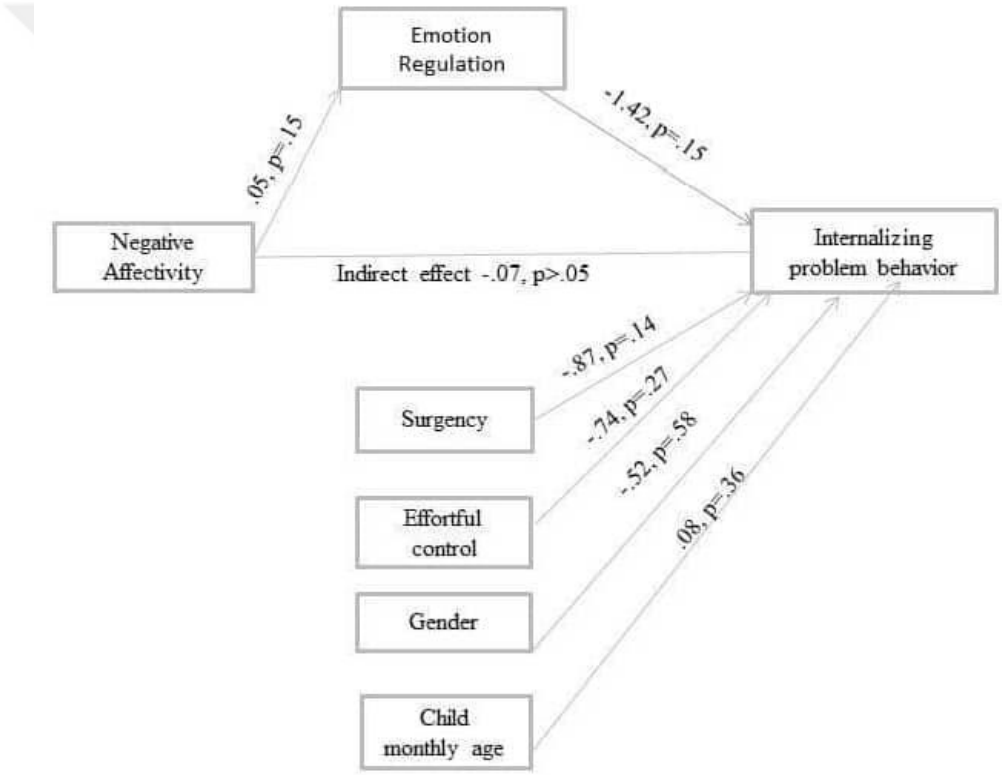

Fig. 11 Mediating effect of emotion regulation between negative affectivity and internalizing problem behaviors. Unstandardized coefficients are reported. Nonsignificant indirect effect = -.07, 95% CI [-.28, .04]

5.5.2.8 Mediational model 8

Eighth, it was tested mediating effect of emotion regulation for the relationship between surgency and internalizing problem behaviors. The direct effect from surgency to emotion regulation ($\beta = -.12$, $t = 2.68$) was significant and that from emotion regulation to internalizing problem behaviors (β = -1.42, t = -1.44) was not statistically significant as presented in Figure 12. In addition, the 95% confidence interval limits from bootstrapping analyses for indirect effect were [−.48, .05], indicating there was no significant indirect effect.

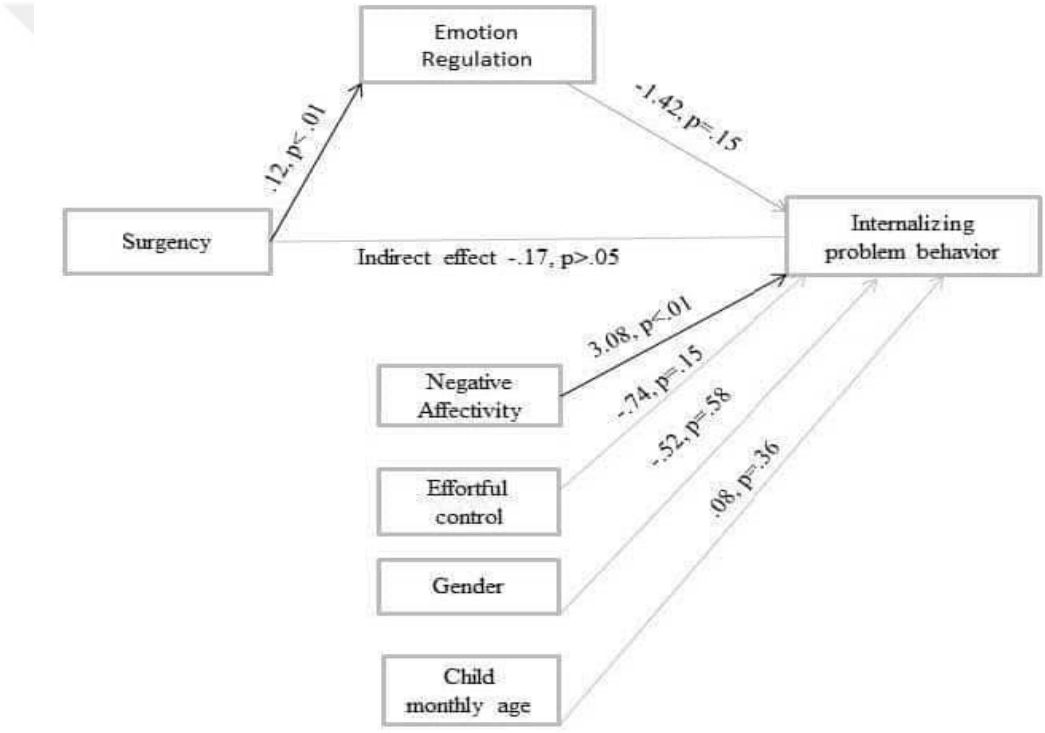

Fig. 12 Mediating effect of emotion regulation between surgency and internalizing behaviors Unstandardized coefficients are reported. Nonsignificant indirect effect = −.17, 95% CI [−.48, .05]

5.5.2.9 Mediational model 9

Ninth, it was tested mediating effect of emotion regulation for the relationship between effortful control and internalizing problem behaviors. The direct effect from effortful control to emotion regulation ($\beta = -.08$, $t = .16$) and that from emotion regulation to internalizing problem behaviors (β = -1.42, t = -1.44) were not statistically significant as shown in Figure13. In addition, the 95% confidence interval limits from bootstrapping analyses for indirect effect were [−.40, .06], indicating there was no significant indirect effect.

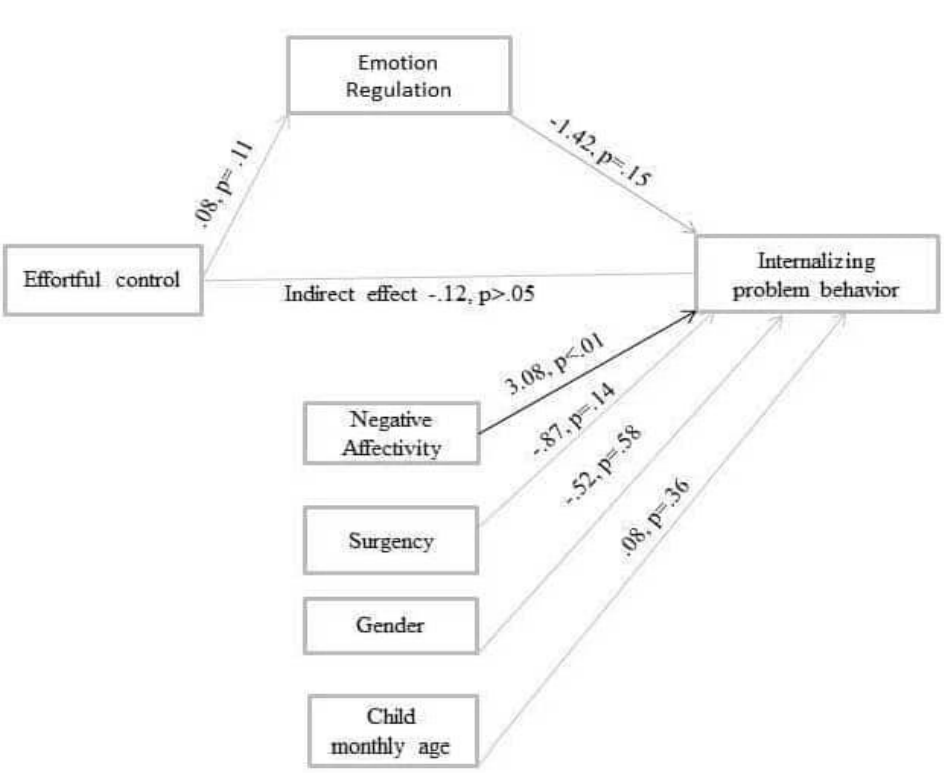

Fig. 13 Mediating effect of emotion regulation between effortful control and internalizing behaviors. Unstandardized coefficients are reported. Nonsignificant indirect effect = −.12, 95% CI [−.40, .06]

5.5.2.10 Mediational model 10

Tenth, it was tested mediating effect of emotion dysregulation for the relationship between negativity affectivity and internalizing problem behaviors. The direct effect from negative affectivity to emotion dysregulation ($\beta = -.00$, $t = .27$) and that from emotion dysregulation to internalizing problem behaviors ($\beta = -.35$, $t = -.28$) was not statistically significant as represented in Figure 14. In addition, the 95% confidence interval limits from bootstrapping analyses for indirect effect were [−.10, .06], indicating there was no significant indirect effect.

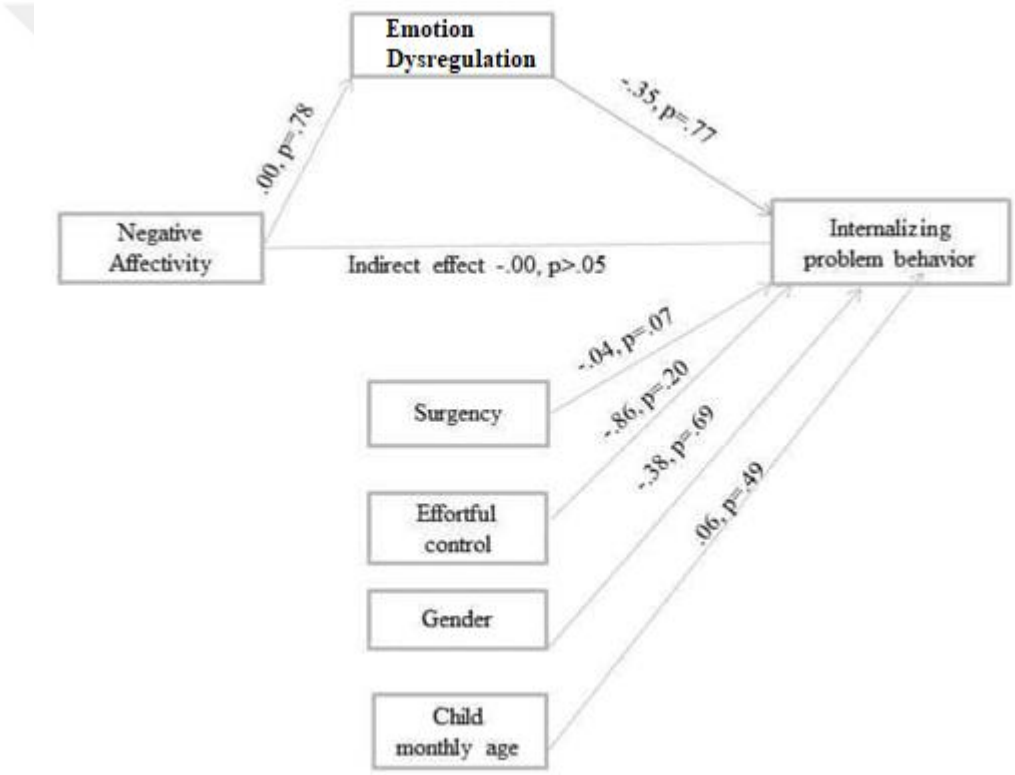

Fig. 14 Mediating effect of emotion dysregulation between negative affectivity and internalizing behaviors. Unstandardized coefficients are reported. Nonsignificant indirect effect = −.00, 95% CI [−.10, .06]

5.5.2.11 Mediational model 11

Eleventh, it was tested mediating effect of emotion dysregulation for the relationship between surgency and internalizing problem behaviors. The direct effect from surgency to emotion dysregulation (β = −.01, t = .44) and that from emotion dysregulation to internalizing problem behaviors (β = -.35, t = -.28) was not statistically significant as seen in Figure 15. In addition, the 95% confidence interval limits from bootstrapping analyses for indirect effect were [−.11, .10], indicating there was no significant indirect effect.

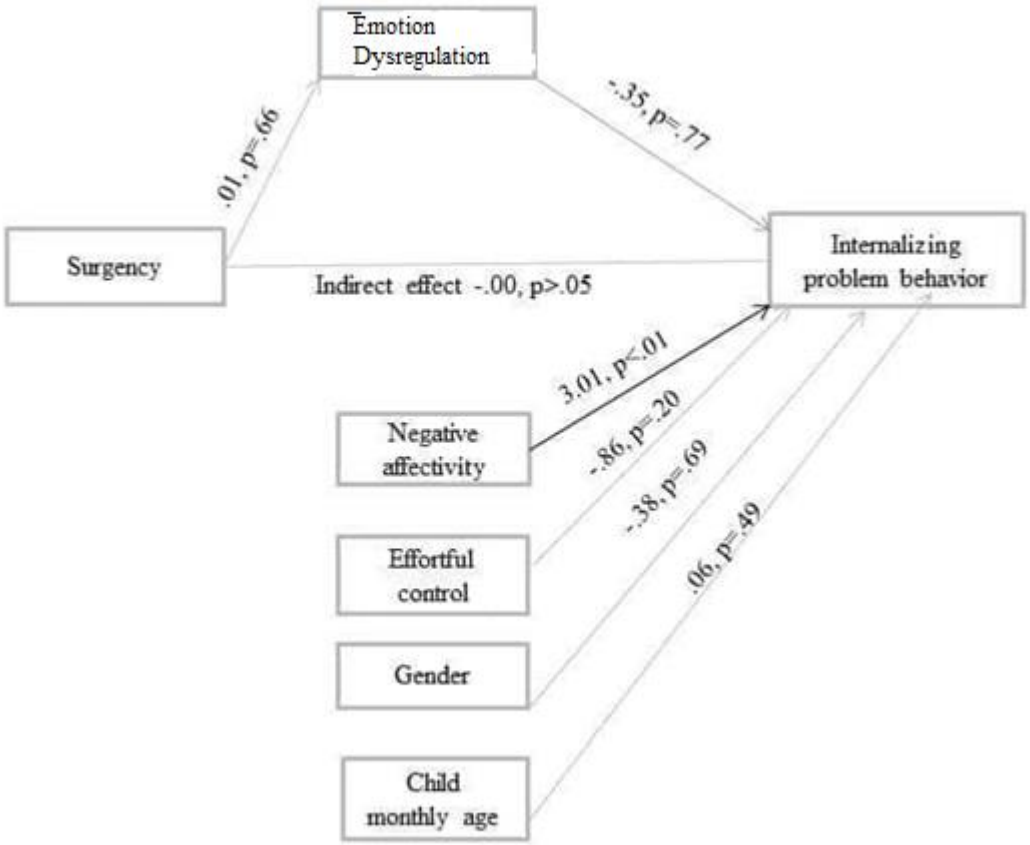

Fig. 15 Mediating effect of emotion dysregulation between surgency and internalizing behaviors. Unstandardized coefficients are reported. Nonsignificant indirect effect = −.00, 95% CI [−.11, .10]

5.5.2.12 Mediational model 12

Twelfth, it was tested mediating effect of emotion dysregulation for the relationship between effortful control and internalizing problem behaviors. The direct effect from effortful control to emotion dysregulation (β = −.00, t = .18) and that from emotion dysregulation to internalizing problem behaviors (β = -.35, t = -.28) was not statistically significant as displayed in Figure 16. In addition, the 95% confidence interval limits from bootstrapping analyses for indirect effect were [−.13, .12], indicating there was no significant indirect effect.

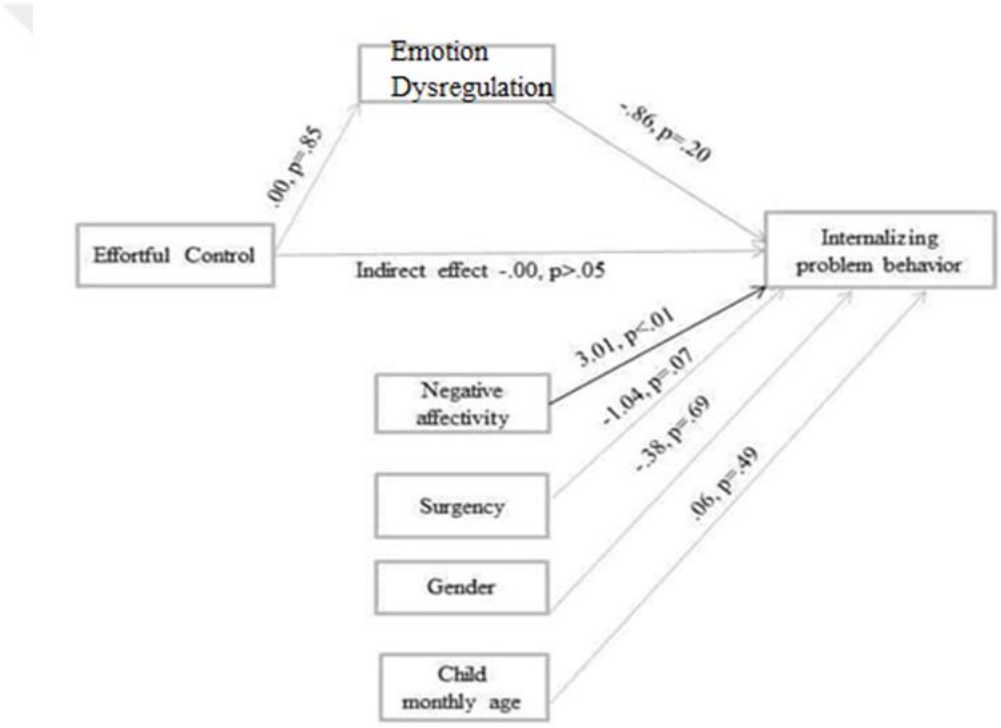

Fig. 16 Mediating effect of emotion dysregulation between effortful control and internalizing behaviors. Unstandardized coefficients are reported. Nonsignificant indirect effect = −.00, 95% CI [−.13, .12]

CHAPTER 6

DISCUSSION

6.1 General discussion and review of findings

The theoretical background of this study was Gottlieb's epigenetic approach as under the Developmental systems theories demonstrating bidirectional and co-actional nature of genetic, neural, behavioral, and environmental influences throughout individual development and enables us to emphasize the interplay between child related and environmental factors in order to understand child developmental outcomes. As Gottlieb (1997, 2007) emphasized biological and environmental forces work cohesively in the development of child characteristics involving temperamental dimensions and emotion regulation abilities and also children's developmental outcomes including problem behaviors. When it was examined the relations child related elements involving temperament and emotion regulation skills of children with adjustment problems, it was not only emphasized on genes by-environment interactions, but also genes by-environment by interactions (Cohen, 2012) that probabilistic epigenesis advocated.

It is important to recognize that children can show different temperamental tendencies. What is more, children can be exposed to different reactions from their environment that can trigger them to behave in a problematic way or not or orient them to have adaptive behavioral patterns according to these tendencies. Therefore, the process of problem behaviors and children's temperamental dimensions is likely bidirectional. That is, for example children who are high in negative affectivity may encounter different responses from their social environment, such as disapproval from peers and adults and being exposed to lower-quality social interactions

(Eisenberg et al. 2001) that can lead them to behave more inappropriate and show more symptoms of internalizing and externalizing problem behaviors involving conduct behaviors, aggression, anxiety and depression (Eisenberg et al. 2009). In addition, showing problem behaviors in a regular basis may be seen as one of the factors that creating increase in the degree of negative affectivity of children with respect to influences of negative experiences, and emotional difficulties. As a result of this situation, children are more likely to behave more aggressive and angrily or feel more frustrated that can lead them to have more severe emotional and behavioral problems.

Emotion regulation can be described as the ability to control experience and expression of emotions (Cole, Teti, 1994). This ability involves developmental processes fostering typical and atypical behavioral outcomes. Both genetic elements involving neurons, and brain activation; and environmental factors such as behaviors and reactions to stimuli have significant impacts on emotion regulatory capacities of children (Eisenberg et al., 2004) in a bidirectional manner as Gottlieb stated. The results of the study showed that temperament such as surgency and effortful control; and emotion regulation have bidirectional interactions as being child-related outcomes influenced by both nature and nurture contributions and experiences in a contextual basis. It can be argued conceptually because this study involves relational statistics about child- related factors and their associations affecting each other. For example, there are significant environmental factors including peer relations, socialization practices or culture on the construct of emotion regulation. However, this study did not focus on direct effects of these aspects even though emotion regulation processes are influenced by these factors indirectly.

Using random selection in this research can be viewed as one of the strong sides of this study. Since participants who comprise of the subset of the entire group are randomly chosen, each participant in the entire group is more likely to be selected (Lavrakas, 2008). This gives researchers highest possibility to have a balanced subset representing larger group en masse. Consequently, it is important to emphasize the condition that children and schools in selected areas are likely to be representative for the whole country. Furthermore, using random sampling in this study enables every preschooler to give equal opportunity to be selected. This is also significant for fairness of the research because any kind of earlier information about participants could not be included while data were collected.

6.1.1 The relationship between temperament (negative affectivity, surgency, effortful control) and problem behaviors

Temperament of children helps researchers to have significant predictions about children reactions and dealing with difficulties in their environments (Rothbart & Bates, 2006) and so it can be perceived as critical concept for understanding maladaptive functioning having bidirectional influences with psychobiological factors. For example, a number of studies revealed that there are associations between temperamental dimensions and developmental outcomes especially in the field of maladaptive outcomes /problem behaviors (Blair et al., 2004; Guerin, Gottfried & Thomas, 1997; McClowry, 2003, McClowry et al., 2005).

According to Seifer (2000), negative affectivity was a predictor of both externalizing and internalizing problem behaviors. In addition, while negative affectivity especially such as anger and frustration were linked to externalizing problem behaviors, inhibitory parts of negative emotionality including sadness and

fear were more associated with internalizing problem behaviors (Eisenberg et al., 2002; Rothbart, 2002, Rothbart & Bates, 1998).

According to Zeman et al., (2002) negative emotions involving sadness and anger were predictors of internalizing and externalizing problem behaviors. These results are consistent with the findings of this study that there were moderate positive relationships between negative affectivity and both externalizing and internalizing problem behaviors as bidirectional influences from both genetic and environmental factors of the children. Negative feelings can lead children to show anger, aggression towards others and they can be exposed to reactions that are more aggressive from other people in their environment because of their negative attitudes in a direct or an indirect way. Therefore, these negative emotions can orient children to show more problematic behavioral patterns, incline them to be rejected and victimized by their peers (Rubin, Bukowski, & Parker, 2006) and also have problem behaviors.

While results of some studies revealed that surgency is not related to internalizing behavior (Brugel, 2016), other studies demonstrated that there is a negative association with surgency and internalizing problems including shyness, social withdrawal and feeling solitary (Burgess et al., 2003, Rubin et al., 2002). Children with low surgency showed more internalizing problem behaviors (Garnstein, Putnam, & Rothbart, 2012). While children with high impulsivity had tendencies to behave without thinking for their desires and potential rewards, less impulsive children were more likely to be constrained, inflexible and rigid in new situations and in a state of stress. Similarly, there was some evidence from the present study showing that surgency dimension of temperament was negatively associated with internalizing problem behaviors. This finding was consistent with the past studies indicating that low levels of surgency increases the likelihood of

internalizing problems in early years with regard to creating tendency to be shy, socially withdrawal instead of being initiative, curious about new things and being impulsive to novel situations. In other words, the finding indicated that children with higher surgency, which means higher levels of activity, impulsivity, were less likely to have internalizing problem behaviors.

In contrast to past studies illustrating that there was a link between surgency and externalizing problem behavior (Berdan, Kenane, & Calkins, 2008; Blair et al., 2004; Fettig, 2015; Stifter et al., 2008), finding from the present research did not lead to a significant association between surgency and externalizing problem behavior according to correlational analyses and multiple regression results affected by genetic and environmental sources in a bidirectional manner. This result can be explained by the emotion regulation methods using by high surgent children because researchers indicate that surgency are positively related to active coping and coping efficacy (Thompson, Zalewski & Lengua, 2014). According to Brugel (2016), this relationship showed that the children who have higher scores in surgency have a tendency to use problem solving coping and so they are more likely to handle their problems and deal with their intense negative emotions in an efficient way. Furthermore, the usage of active coping strategy was negatively linked to behavioral problems (Liu, Tein, & Zhao, 2004). That is to say, the problem-solving ability of high surgent children and also their usage of active coping strategies can have buffering effect for them with regard to not showing externalizing problem behaviors including aggression, disruptive and rule breaking behaviors. However, in meditational analysis used emotion regulation as mediator between surgency and externalizing problem behaviors, there was significant direct effect of surgency to externalizing problem behaviors, while this effect could not be observed in the

mediation model applied emotion dysregulation as mediator between surgency and externalizing behaviors. This situation can be explained by the effect of the positive moderate association between surgency and emotion regulation.

In preschool years, effortful control is of importance for comprehending the development of socially maladaptive behaviors including internalizing and externalizing problem behaviors (Olson, Sameroff, Kerr, Lopez, & Wellman, 2005). Even though Eisenberg et al., (2003) found that children with low effortful control are prone to show more internalizing behaviors involving depression and anxiety symptoms, the result of this study did not support the relationship between effortful control and internalizing problem behaviors although not significant the relationship between effortful control and externalizing behaviors was negative. Yaban and Arı (2016) found supporting argument to this result. This situation can be associated with obtained scores of internalizing problem behaviors because detecting symptoms of internalizing problem behaviors can be more difficult compared to identifying externalizing problem behaviors, as the symptoms are not always very visible.

Eisenberg et al., (2001) found that there is a negative relation between effortful control and externalizing problem behaviors. Research revealed that there are negative correlations between effortful control and externalizing problem behaviors (Eisenberg & Spinrad, 2004; Sanson. et al., 2009). To illustrate, Fettig (2015) found that children with low effortful control have an inclination to have higher scores about externalizing behaviors including aggressive, hyperactive and rule-breaking behaviors. According to results of this research as mentioned above, effortful control was also negatively related to externalizing problem behavior in a moderate level. Besides, effortful control was a significant predictor of externalizing problem behavior as consistent with the findings of the previous studies. Since

effortful control is associated with self-regulatory part of the construct of temperament, children with low level of effortful control is related to not having enough regulatory skills for dealing with the negative emotional states and behavioral outcomes; and in turn, more problematic externalizing behaviors involving emotionally-driven aggression and frustration .

6.1.2 Gender differences in problem behaviors

According to Blair et al., (2004) there is a significant difference between girls and boys with respect to problem behaviors. While girls are more likely to show internalizing behaviors, boys are more prone to have higher scores related to externalizing problem behaviors. The result of this research indicated that there was a statistically significant difference between female and male children in terms of externalizing problem behaviors but not internalizing problem behaviors. There can be different causes underlying this gender difference including biological, environmental and cultural factors. Even though with respect to increasing awareness about gender differences in new generation parents, gender bias even starting with the birth of the child involving the color of clothes and kinds of toys still remain along with many other societal and parental influences. Thus, some of the differential expectations from boys and girls in terms of how they are to present and experience their reactions in times of conflict still have significant behavioral outcomes for boys and girls. It is possible that these differential expectations from boys and girls can lead children to have gendered behavioral repertoire like boys showing more aggressive and impulsive behaviors. It is possible that girls and boys also biological tendencies, e.g. boys to be more aggressive as a result of exposure to testosterone, yet, the very existence cultural beliefs and parental expectations can be one of the

reasons behind the finding that there is a significant gender difference in preschoolers with respect to externalizing problem behaviors. Additionally, teacher reports were used for problem behaviors, thus, it is crucial to take into consideration that teachers also expect the boys to be more aggressive than girls.

6.1.3 The relationship between temperament and emotion regulation

Eisenberg and Fabes (1992) stated that emotion regulation is important for children in terms of dealing with stressful situations and their own feelings of anger, sadness and frustration. Children high in reactivity (negative affectivity and surgency) are less successful in regulating their emotional states (Arı &Yaban, 2016). Moreover, Blair et al., (2004) and Eisenberg et al., (2000) stated that emotion regulation is a developmental process that can be affected by temperament variables. Results of this research indicated that surgency and effortful control was significantly associated with emotion regulation and effortful control was negatively related to emotion dysregulation. Previous research supported these results. To illustrate, children with high effortful control involving attentional focusing scores appeared to be more successful at regulating their emotions but children with high reactivity and impulsivity are less likely to be good at modulating or adjusting their intense emotions (Altan, 2006). Furthermore, children with high surgency and children with relatively high effortful control may show fewer difficulties in dysregulation of emotions (Eisenberg & Spinrad, 2004). Children with low surgency have a tendency to show negative reactions in the case of stressful and disappointing situations as a consequence, whether having the ability to regulate negative emotions or not is critical for developmental outcomes particularly for maladjustment problems.

6.1.4 The relationship between emotion regulation (emotion dysregulation and emotion regulation) and problem behaviors (internalizing and externalizing)

Emotion regulation is an essential construct as one of the significant predictors of maladaptive outcomes (e.g., Bradley, 2003; Calkins & Howse, 2004; Calkins, 1994). According to Blair et al., (2004) problems in emotion regulation is linked to more problem behaviors and Eisenberg et al., (1995) also indicated that children having difficulties in emotion regulatory processes are more likely to show behavioral problems. Furthermore, Arı and Yaban (2016) found that higher scores of emotion regulation abilities are negatively related to externalizing problem behaviors including aggression and hyperactivity. In addition, Helmsen et al. (2012) indicated that difficulties related to emotion regulation of pre-school children explained 38% of their aggression behaviors. This rate is of importance in terms of explaining why we should focus on the construct of emotion regulation for creating decrease in the rate of problematic behavioral outcomes.

Moreover, emotion dysregulation as second domain of emotion regulation can be defined as rapidity of children in replying to emotion eliciting stimuli and at the same time difficulty recouping from negative emotion responses and reactions. Although studies indicated that emotion dysregulation as one of the domains of emotion regulation is associated with internalizing problem behaviors, in this research emotion dysregulation subscale of emotion regulation was not significantly linked with internalizing problem behavior. However, emotion dysregulation scale has positive and moderate association with externalizing problem behaviors. This result can come from inner stress and negative emotions of emotional experience for children not able to regulating their emotions (Eisenberg et al., 2002) because when stress level gets high and having regular difficulties with respect to adjusting or

modifying emotional states; children are more likely to reflect their negative emotions into the behavior that Acenbach (2000) characterized as externalizing problem behaviors. That is to say, when a child is using improper measures to regulate their emotions, the path they are in is more likely to end in externalizing problem behaviors.

The emotion regulation checklist used in this study includes two dimensions such as emotion regulation and emotion dysregulation. In this research emotion regulation subscale (Cicchetti & Shields, 1997) which involves items associated with emotion understanding, appropriate developmental behaviors, empathy, and appropriate emotion display was not significantly related to both internalizing and externalizing problem behaviors. This finding can come from the existence of different raters. While preschool teachers filled out emotion regulation questionnaire, problem behaviors survey was collected by mothers of the participants. According to Sprinad (2007), the teacher-reported child behavior checklist can be seen as a bit more effective for showing the relationship or predicting between emotion regulatory factors and internalized behaviors compared to mother-reported ones. Consequently, in mothers-rated forms detecting problem behaviors particularly internalizing scores of children can be more difficult with regard to mothers' having less opportunity to observe peer relations, attitudes and behavior patterns of their children towards other preschoolers than teachers'. Additionally, they can get a chance to have less information about difficulties in school and classroom environment.

6.1.5 The mediator role of emotion regulation on the relationship between temperament and problem behaviors

It was examined the mediating role of emotion regulation (emotion regulation and emotion dysregulation) in the relations between temperament (negative affectivity, surgency and effortful control) and problem behaviors (internalizing and externalizing). Twelve mediation analyses were established. These meditational models were tested through PROCESS macro tool. Results of twelve established mediation analyses were statistically insignificant. Neither emotion regulation as defined by emotional understanding, empathy, appropriate developmental behaviors, and appropriate emotion display; nor emotion dysregulation including items related to activation, reactivity, failure to control anger and moodiness mediate the relationships between temperament and problem behaviors.

Even though there are a number of researches examining relations between temperament and problem behaviors, and also emotion regulation and temperament; the role of temperament and emotion regulation in the development of maladaptive social behaviors is less known. While there is scant research in that topic especially in early years, Eisenberg et al., (2002) found that emotion regulation can be perceived as significant factor than temperamental dimensions alone for children with higher negativity in terms of externalizing problem behaviors however emotion regulation skills do not have similar influence on children not having intense adverse emotions. Nonetheless, the findings of this research did not support this result; that is to say; in this research, emotion regulation skills of children did not transmit the effect of their temperament on problem behaviors of them. There can be different causes underlying this finding. One of the reasons behind why emotion regulation could not have a mediating role on the relationships between temperament

dimensions and problem behaviors can be associated with the condition that data were collected from different raters as mentioned above in a more detailed way.

Furthermore, it can be explained by developmental reasons why temperament could not filter emotion regulation in terms of its relations with problem behaviors in preschool aged because children during the preschool years are beginning to newly understand how to negotiate conflict in the environment. It is likely that children are used emotion regulation skills inconsistently, inefficiently, and thus not presenting themselves to be protective factors yet. When developmental trajectories are taken into consideration, it is important to emphasize that emotion regulation can be viewed as emergent behavior for children in their early years. Denham (2006) affirmed that preschoolers started to use emotion regulation skills in an academic environment for sharing, following directions, waiting, doing tasks they might not enjoy, or desire to do. However, emotions for dealing and engaging with such tasks could not include mature emotion regulation skills and procedures. For example, Cole et al (1994) stated that when preschoolers have difficulty coping with the emotional states, they tend to show tantrums, and be upset much more easily than expected. This situation also indicates that emotion regulation skills cannot improve at an early age.

From the developmental process, the ability to regulate emotions can be viewed as an increasing skill with age in parallel with cognitive development (D'Zurilla and Nezu, 1999). Furthermore, according to Orgeta (2007), increasing age was related to having better emotion regulation skills and accuracy of feelings. To illustrate, a school-aged period where children acquire skills for concrete operations and get more complex emotional experiences, this progress continues during adolescence and adulthood. Furthermore, Dahl and Carter (2004) explained that mid

to late adolescence can be seen as significant with regard to the great increase in emotional functioning and cognitive processes in that period. Several studies are investigating the relationship between emotion regulation and adjustment problems in school-aged children and adolescents (Eisenberg et al. 2004, 2009; Lengua 2008) in addition to mediation research related to emotion regulatory skills. To illustrate, Zalewski (2011) stated that emotion regulation profiles associated with frustration were mediated the relation between effortful control and externalizing problem behavior including conduct problems in adolescence. By taking all of the developmental changes and processes into account, it can be stated that emotion regulation abilities of preschoolers that have not developed and matured yet can be one of the significant reasons why this study did not find a mediating effect of emotion regulation on the link between dimensions of temperament and internalizing and externalizing problem behaviors.

Another reason why mediating effect could not be found in this research can be linked to result showing that finding mediating effect can be perceived as difficult in the developmental psychopathology (Mackinnon, Fairchild, & Fritz, 2007) . Furthermore, Lemery-Chalfant et al. (2008) argued that their results suggest that environmental factors or child related factors affecting developmental processes might moderate, but are unlikely to mediate, the relations of emotion or self-regulatory processes to psychopathology especially in the early years.

In addition, investigating existed emotion regulation skills of preschoolers as mediator cannot be sufficient for indicating the influences of temperamental tendencies of children on maladaptive behaviors. Therefore, some intervention studies focusing on teaching the usage of proper emotion regulation strategies for children can be applied for emphasizing the importance of emotion regulation in the

field of maladjustment because teaching the usage of suitable and effective emotion regulation strategies in the classroom environment may lead children to less difficulties with taking charge of emotions and finding appropriate channels to express them before ending in problem behaviors. Emotion regulation strategies suggested by Social and emotional Learning (SEL) which aim at controlling and managing emotional difficulties and enhancing social emotional competence or classroom techniques focusing on emotional awareness that can be defined as the ability to recognize and understand your own and others' emotions can be possibly effective for both contributing their mediating influences and orienting children to more adaptive behavioral outcomes.

6.2 Limitations of the study and future directions

This research has some limitations. One limitation is that the data for this research is based on mother and teacher reports. The mothers filled in the questionnaires about the temperament of the child, the problem behaviors and the preschool teachers that worked with the child more than six months filled in the emotion regulation checklist. Although research has used mother and teacher reports widely in the field, it is possible that especially emotion regulation will need to be assessed by using different measures. Therefore, future research and especially intervention studies should focus more on effective emotion regulation strategies and classroom-based methods and observations placing more emphasis on emotion literacy and emotional awareness. Future research should focus more on the links between various temperamental styles and emotion regulation strategies and try to illustrate the pathways of developmental trajectories.

Second limitation can be seen as using very short form of CBQ. Even though Putnam and Rothbart (2006) stated that people who fill out the very short form of CBQ questionnaire would be more conscientious and focused leading researchers to have better statistical results, the short form of CBQ provides more scales that can be associated with emotion regulation abilities and problem behaviors. Namely, temperament can be examined in a more detailed way for using fifteen scales in short version of CBQ.

Another limitation is that the findings of this research are depended on cross-sectional data. As a consequence, we are not able to say anything about the further development of the problem behaviors in those children. A study based on longitudinal data would give more insight about the relationships as both directly or indirectly on the long run. Furthermore, this research focused on internal sources of children, new research can investigate both internal and external sources of children including parenting practices, styles and attachment issues and so on.

6.3 Educational recommendations

Although the present research did not support all the hypotheses and particularly the ones suggesting that emotion regulation mediates the link between problem behaviors and temperament, we still have support from the findings that children with less favorable temperamental profiles need more support in order to combat behavior problems. It is possible that emotional regulation strategies need to be strengthened to show their mediating effects and redirecting children to more favorable behavioral outcomes. Thus, it can be recommended that temperamental differences are handled more carefully and seen as different forms of expressions

other than nature's curse. Perhaps more programs can focus on finding all children to express themselves and function adaptively both at school and in society.

There are different intervention programs related to temperament for parents and for teachers including 'The Parent Temperament Program' based on Thomas and Chess approach of temperament involving 'Temperament Talk' (Goodman et al., 1995) for understanding challenging children. In addition, Sheeber and Johnson (1994) developed a program for difficult preschoolers. Furthermore, SEL can be defined the process that enable children to learn to comprehend and deal with emotions, set goals, display empathy for others, have positive relationships, and deciding responsibly. Durlak et al. (2011) showed the importance of SEL program by comparing current school services and addition of SEL program with regard to children outcomes involving problem behaviors. To illustrate, 22% children participating SEL programs showed fewer conduct problems.

Another program using emotion regulatory methods on the purpose of decreasing maladjustment problems and strengthening social competence is Promoting Alternative Thinking Strategies (PATHS) Curriculum. PATHS has been used for both preschoolers and school-aged children. This curriculum includes emotion understanding and self-regulatory control processes. Riggs et al. (2006) indicated that PATHS participants are more likely to have higher scores in terms of inhibitory control. The teacher also rated them as having better emotional awareness and showing fewer behaviors related to social withdrawal.

According to Denham (1998) 'Turtle Technique 'can be used one of the efficient methods for teaching how to regulate their emotional states. This technique aims to control negative emotions with the help of retreating into 'turtle shell' when children felt angry and hurt. Purpose of this behavior can be to have an opportunity

to think about how to answer suitably to the situation and think about the possible ways for controlling themselves and trying to find ways for feeling more relaxed after the difficult situations. Afterwards, teacher and children talk about the child's feelings and the teacher try to enable students to express these emotions in an effective way. Joseph and Strain (2003) also suggest teachers to apply this turtle method and offer them to use picture cards. These cards involve the steps of this technique since it helps children to remind the steps for using emotion regulation methods and provide them to express their emotions more clearly and consciously.

Moreover, teachers can focus on the construct of the emotional understanding in their classroom. Even though there are a number of different emotions, four to six emotions are taught in schools. Learning about emotions is essential as well as learning emotions. It is significant to remind that teachers can apply different techniques involving games, reading or creative drama activities. For example, storybooks are significant materials for creating changes in children's emotional wellbeing and understanding of emotions. Teachers can regularly read books that there is a character dealing with a problem (Joseph & Strain, 2003).

With the help of stories and characters, teachers can make emotions more concrete for children. While teachers are reading, they can pause and start the discussion about the possible feelings and thoughts about a character in the book (Blair, 2004). Additionally, they can give significant suggestions to their students about possible appropriate ways of regulating their feelings and orient their students to find effective solutions to the problem in the story by enhancing their emphatically thinking abilities of them. Although children have temperamental difficulties and tendencies to aggression, anxiety, or depression; recognizing and accepting their

feelings in early years enables them to learn more about controlling their emotional states for having better relations and healthier socio-emotional development in the long run.

APPENDIX A

ETHICS COMMITTEE APPROVAL

T.C.
BOĞAZİÇİ ÜNİVERSİTESİ
Sosyal ve Beşeri Bilimler Yüksek Lisans ve Doktora Tezleri Etik İnceleme Komisyonu

Sayı : 2019 - 64 9 Ekim 2019

Duygu Meriç
Temel Eğitim

Sayın Araştırmacı,

"Okul Öncesi Dönemdeki Çocukların Mizaç ve Problem Davranışları Arasındaki İlişkiye Duygu Düzenlemenin Aracı Rolü" başlıklı projeniz ile ilgili olarak yaptığınız SBB-EAK 2019/55 sayılı başvuru komisyonumuz tarafından 9 Ekim 2019 tarihli toplantıda incelenmiş ve uygun bulunmuştur.

Prof. Dr. Feyza Çorapçı

Doç. Dr. Mehmet Yiğit Gürdal

Doç. Dr. Ebru Kaya

Dr. Öğr. Üyesi İnci Ayhan

APPENDIX B

INFORMED CONSENT FORM FOR MOTHERS (ENGLISH)

Supporting Institution Research Project: Boğaziçi University

Name of the study: The Mediator Role of Regulation of Emotion on the Relationship between Temperament and Problem Behavior of Preschool Children

Project Coordinator: Assist. Prof. Ayşegül Metindoğan

E-mail : ametidogan@boun.edu.tr

Phone: 212 3597791

Name of the researcher: Duygu Meriç

Address: Abdurrahman Köksaloğlu Ortaokulu

E-mail : duygu.meric@boun.edu.tr

Phone: 212 217 49 83

Dear Mothers,

Duygu Meriç, a graduate student at Boğaziçi University Faculty of Education, conducts a scientific research under the title of The Mediator Role of Emotion Regulation on the Relationship between Temperament and Problem Behaviors of Preschool Children. In this study, the effects of the temperament of preschool children and the problem behaviors and emotion regulation of children on this relationship will be examined. We invite you, mothers, to help us with this research. We would like to inform you about the research before you make your final decision. You are expected to fill out the questionnaire about the child's temperament and child behavior checklist. However, if you need, the researcher will be able to read the questions one by one and mark them on the form. If you agree to participate and choose to complete the form yourself, you will be given a questionnaire and an envelope. You are asked to fill out this survey. It will take approximately 20 minutes to complete the survey. If you wish to participate in the research after reading this information, please sign this form and send it to us in a sealed envelope. In addition, your child's teacher will fill out a questionnaire that will assess your child's emotion regulation and behavior in general and will send it to us. Required permission will be obtained from the school and teacher. Your child will not be interviewed in any way. This research is carried out for scientific purposes and the confidentiality of the participant information is based on. Since your participation in the research is entirely voluntary, you can withdraw from the research at any time.

If you participate, you have the right to withdraw your consent at any stage of the study without giving any reason. If you would like additional information about the research project, please contact Boğaziçi University Department of Basic Education, Assist. Prof Ayşegül Metindoğan (telephone number: 212 3597791, Email: ametidogan@boun.edu.tr, Address: Boğaziçi University, ETA 406, 34342)

You may consult with the Boğaziçi University The Ethics Committee For Master And PHD These in Social Sciences And Humanities (SOBETİK) for your research rights.

If you agree to participate in this research project, please sign this form and return it to us in a sealed envelope.

I, (name of the participant) ..... , I have read the above text and fully understood the scope and purpose of the work I was asked to participate, and my responsibilities voluntarily. I had the opportunity to ask questions about the study. I understood that I could quit this study at any time and without having to give any reason, and that if I did, I would not encounter any negativity.

In these circumstances, I voluntarily agree to participate in the research in question without any pressure or coercion.

I did not want to receive / receive a copy of the form (in this case the researcher will keep this copy).

Name and Surname of the Participant: ....

Signature: ....

Address (Phone Number, Fax Number if available): ....

....

Date (day / month / year): ..... / ..... / .....

Researcher's Name-Surname: ..... .

Signature: ....

Date (day / month / year): ..... / ..... / .....

APPENDIX C

INFORMED CONSENT FORM FOR MOTHERS (TURKISH)

Araştırmayı destekleyen kurum: Boğaziçi Üniversitesi

Araştırmanın adı: Okul Öncesi Dönemdeki Çocukların Mizaç ve Problem Davranışları Arasındaki İlişkiye Duygu Düzenlemenin Aracı Rolü

Proje Yürütücüsü: Dr. Öğretim Üyesi Ayşegül Metindoğan

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Araştırmacının adı: Duygu Meriç

Adresi: Abdurrahman Köksaloğlu Ortaokul

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Telefonu: 212 217 49 83

Sayın Veli,

Boğaziçi Üniversitesi Eğitim Fakültesi yüksek lisans öğrencisi Duygu Meriç, "Okul Öncesi Dönemdeki Çocukların Mizaç ve Problem Davranışları Arasındaki İlişkiye Duygu Düzenlemenin Aracı Rolü' adı altında bilimsel bir araştırma yapmaktadır. Bu araştırmada okul öncesi dönemdeki çocukların mizacı ile çocukların problem davranışları ilişki ve duygu düzenlemenin bu ilişkiye etkisi incelenecektir. Bu araştırmada bize yardımcı olmanız için siz sayın anneleri araştırmaya davet ediyoruz. Ancak siz son kararınızı vermeden araştırma hakkında sizi bilgilendirmek istiyoruz. Sizden çocuğun mizacı ve davranışları ilgili anket formlarını doldurmanız beklenmektedir. Ancak, ihtiyaç duymanız halinde araştırmacı size soruları tek tek okuyarak form üzerinden işaretleyebilecektir. Araştırmaya katılmayı kabul ettiğiniz ve formu kendiniz doldurmayı tercih ettiğiniz takdirde size anket formu ve zarf verilecek. Sizden bu anketi doldurmanız istenmektedir. Anketi doldurmanız yaklaşık olarak 20 dakikanızı alacaktır. Bu bilgileri okuduktan sonra araştırmaya katılmak isterseniz lütfen bu formu imzalayıp kapalı bir zarf içinde bize ulaştırınız. Ayrıca, çocuğunuzun öğretmeni de çocuğunuzun duygu düzenleme ve genel olarak davranışlarını değerlendireceği bir anket formu dolduracak ve bu formu bize ulaştıracaktır. Okul ve öğretmenden gerekli izin alınacaktır. Araştırmada çocuğunuzla hiç bir şekilde görüşme yapılmayacaktır. Bu araştırma bilimsel bir amaçla yapılmaktadır ve katılımcı bilgilerinin gizliliği esas tutulmaktadır. Araştırmaya katılımınız tamamen gönüllülük esasına dayandığından, dilediğiniz zaman araştırmadan çekilebilirsiniz.

Katıldığınız takdirde çalışmanın herhangi bir aşamasında herhangi bir sebep göstermeden onayınızı çekmek hakkına da sahipsiniz. Katıldığınız takdirde çalışmanın herhangi bir aşamasında herhangi bir sebep göstermeden onayınızı çekmek hakkına da sahipsiniz. Araştırma projesi hakkında ek bilgi almak istediğiniz takdirde lütfen Boğaziçi Üniversitesi Temel Eğitim Bölümü Doktor Öğretim Üyesi Ayşegül Metindoğan ile temasa geçiniz (Telefon: 212 3597791, Email: ametidogan@boun.edu.tr, Adres: Boğaziçi Üniversitesi, ETA 406, 34342 Bebek, İstanbul). Araştırmayla ilgili haklarınız konusunda Boğaziçi Üniversitesi Sosyal ve Beşeri Bilimler Yüksek Lisans ve Doktora Tezleri Etik İnceleme Komisyonu'na (SOBETİK) danışabilirsiniz.

Eğer bu araştırma projesine katılmasını kabul ediyorsanız, lütfen bu formu imzalayıp kapalı bir zarf içerisinde bize geri yollayın.

Ben, (katılımcının adı) ....., yukarıdaki metni okudum ve katılmam istenen çalışmanın kapsamını ve amacını, gönüllü olarak üzerime düşen sorumlulukları tamamen anladım. Çalışma hakkında soru sorma imkanı buldum. Bu çalışmayı istediğim zaman ve herhangi bir neden belirtmek zorunda kalmadan bırakabileceğimi ve bıraktığım takdirde herhangi bir olumsuzluk ile karşılaşmayacağımı anladım.

Bu koşullarda söz konusu araştırmaya kendi isteğimle, hiçbir baskı ve zorlama olmaksızın katılmayı kabul ediyorum.

Formun bir örneğini aldım / almak istemiyorum (bu durumda araştırmacı bu kopyayı saklar).

Katılımcının Adı-Soyadı:.....

İmzası:.....

Adresi (varsa Telefon No, Faks No):.....

.....

Tarih (gün/ay/yıl):...../...../.....

Araştırmacının Adı-Soyadı:.....

İmzası:.....

Tarih (gün/ay/yıl):...../...../.....

APPENDIX D

INFORMED CONSENT FORM FOR TEACHERS (ENGLISH)

Supporting Institution Research Project: Boğaziçi University

Name of the study: The Mediator Role of Regulation of Emotion on the Relationship between Temperament and Problem Behavior of Preschool Children

Project Coordinator: Assist. Prof. Ayşegül Metindoğan

E-mail : ametidogan@boun.edu.tr

Phone: 212 3597791

Name of the researcher: Duygu Meriç

Address: Abdurrahman Köksaloğlu Ortaokulu

E-mail : duygu.meric@boun.edu.tr

Phone: 212 217 49 83

Dear Teachers,

Duygu Meriç, a graduate student at Boğaziçi University Faculty of Education, conducts a scientific research under the title of The Mediator Role of Emotion Regulation on the Relationship between Temperament and Problem Behaviors of Preschool Children. In this study, the effects of the temperament of preschool children and the problem behaviors and emotion regulation of children on this relationship will be examined. We invite you, dear teachers, to help us with this research. However, we would like to inform you about the research before you make your final decision. If you wish to participate in the research after reading this information, please sign this form and send it to us in a sealed envelope. We want to collect data on child behavior from the teachers. In this research, you are expected to fill out questionnaires about child's emotion regulation and problem behaviors. It will take approximately 10 minutes to complete the surveys. This research is carried out for scientific purposes and the confidentiality of the participant information is applied. Your participation in the study is entirely optional.

If you participate, you have the right to withdraw your consent at any stage of the study without giving any reason. If you would like additional information about the research project, please contact Boğaziçi University Department of Basic Education, Assist. Prof Ayşegül Metindoğan (telephone number: 212 3597791, Email: ametidogan@boun.edu.tr, Address: Boğaziçi University, ETA 406, 34342)

You may consult with the Boğaziçi University The Ethics Committee For Master And PHD Theses In Social Sciences And Humanities (SOBETİK) for your research rights.

If you agree to participate in this research project, please sign this form and return it to us in a sealed envelope.

I, (name of the participant) ..... , I have read the above text and fully understood the scope and purpose of the work I was asked to participate, and my responsibilities voluntarily. I had the opportunity to ask questions about the study. I understood that I could quit this

study at any time and without having to give any reason, and that if I did, I would not encounter any negativity.

In these circumstances, I voluntarily agree to participate in the research in question without any pressure or coercion.

I did not want to receive / receive a copy of the form (in this case the researcher will keep this copy).

Name and Surname of the Participant: ....

Signature: ....

Address (Phone Number, Fax Number if available): ....

....

Date (day / month / year): ..... / ..... / .....

Researcher's Name-Surname: ..... .

Signature: ....

Date (day / month / year): ..... / ..... / .....

APPENDIX E

INFORMED CONSENT FORM FOR TEACHERS (TURKISH)

Araştırmayı destekleyen kurum: Boğaziçi Üniversitesi

Araştırmanın adı: Okul Öncesi Dönemdeki Çocukların Mizaç ve Problem Davranışları Arasındaki İlişkiye Duygu Düzenlemenin Aracı Rolü

Proje Yürütücüsü: Dr. Öğretim Üyesi Ayşegül Metindoğan

E-mail adresi: ametidogan@boun.edu.tr

Telefonu: 212 359 77 91

Araştırmacının adı: Duygu Meriç

Adresi: Abdurrahman Köksaloğlu Ortaokul

E-mail adresi: duygu.meric@boun.edu.tr

Telefonu: 212 217 49 83

Sayın Öğretmen,

Boğaziçi Üniversitesi Eğitim Fakültesi Yüksek lisans öğrencisi Duygu Meriç, "Okul Öncesi Dönemdeki Çocukların Mizaç ve Problem Davranışları Arasındaki İlişkiye Duygu Düzenlemenin Aracı Rolü' adı altında bilimsel bir araştırma yapmaktadır. Bu araştırmada okul öncesi dönemdeki çocukların mizacı ile çocukların problem davranışları arasındaki ilişki ve duygu düzenlemenin bu ilişkiye etkisi incelenecektir. Bu araştırmada bize yardımcı olmanız için siz sayın öğretmenlerimizi araştırmamıza davet ediyoruz. Ancak siz son kararınızı vermeden araştırma hakkında sizi bilgilendirmek istiyoruz. Bu bilgileri okuduktan sonra araştırmaya katılmak isterseniz lütfen bu formu imzalayıp kapalı bir zarf içinde bize ulaştırınız. Araştırmanın çocuk davranışlarıyla ilgili verilerini siz öğretmenler aracılığıyla elde etmek istiyoruz. Bu araştırmada çocuğun duygu düzenlemesi, problem davranışları ile ilgili anket formlarını doldurmanız beklenmektedir. Anketleri doldurmanız yaklaşık olarak 10 dakikanızı alacaktır. Bu araştırma bilimsel bir amaçla yapılmaktadır ve katılımcı bilgilerinin gizliliği esas tutulmaktadır. Çalışmaya katılmanız tamamen isteğe bağlıdır.

Katıldığınız takdirde çalışmanın herhangi bir aşamasında herhangi bir sebep göstermeden onayınızı çekmek hakkına da sahipsiniz. Katıldığınız takdirde çalışmanın herhangi bir aşamasında herhangi bir sebep göstermeden onayınızı çekmek hakkına da sahipsiniz. Araştırma projesi hakkında ek bilgi almak istediğiniz takdirde lütfen Boğaziçi Üniversitesi Temel Eğitim Bölümü Doktor Öğretim Üyesi Ayşegül Metindoğan ile temasa geçiniz (Telefon: 212 3597791, Email: ametidogan@boun.edu.tr, Adres: Boğaziçi Üniversitesi, ETA 406, 34342 Bebek, İstanbul). Araştırmayla ilgili haklarınız konusunda Boğaziçi Üniversitesi Sosyal ve Beşeri Bilimler Yüksek Lisans ve Doktora Tezleri Etik İnceleme Komisyonu'na (SOBETİK) danışabilirsiniz.

Eğer bu araştırma projesine katılmasını kabul ediyorsanız, lütfen bu formu imzalayıp kapalı bir zarf içerisinde bize geri yollayın.

Ben, (katılımcının adı) ....., yukarıdaki metni okudum ve katılmam istenen çalışmanın kapsamını ve amacını, gönüllü olarak üzerime düşen sorumlulukları tamamen anladım. Çalışma hakkında soru sorma imkanı buldum. Bu çalışmayı istediğim zaman ve herhangi bir neden belirtmek zorunda kalmadan bırakabileceğimi ve bıraktığım takdirde herhangi bir olumsuzluk ile karşılaşmayacağımı anladım.

Bu koşullarda söz konusu araştırmaya kendi isteğimle, hiçbir baskı ve zorlama olmaksızın katılmayı kabul ediyorum.

Formun bir örneğini aldım / almak istemiyorum (bu durumda araştırmacı bu kopyayı saklar).

Katılımcının Adı-Soyadı:.....

İmzası:.....

Adresi (varsa Telefon No, Faks No):.....

.....

Tarih (gün/ay/yıl):...../...../.....

Araştırmacının Adı-Soyadı:.....

İmzası:.....

Tarih (gün/ay/yıl):...../...../.....

APPENDIX F

DEMOGRAPHIC INFORMATION FORM FOR PARENTS

(ENGLISH)

Date: _____

Following questions will be answered by the child's MOTHER.

1. Please indicate your age in day / month / year format.

For the mother: … ../… ... /… ..

Please specify how many children you have… ... … ...

2. How many people live in your home, including you and all the children?

Please specify:

3. What is the last school level you graduated from?

	No schooling	Left primary school	Primary School	Secondary School	Left High School	High School	Associate degree	University	Graduate
Mother									
Father									

5. Please indicate your profession.

Mother's work:

6. How many days a week do you work?

Specify your daily working hours.

For the mother if she works: hours a day, per day

7. Please indicate the total monthly income of your household.

( ) 2000 and below	( ) 3501- 4000 TL	( ) 5001-5500 TL	( ) 7001-7500 TL	( ) 9001-9500 TL
( ) 2001 ve 2500 TL	( ) 4001-4500 TL	( ) 5501-6000 TL	( ) 7501-8000 TL	( ) 9501-10.000 TL
( ) 2501-3000 TL	( ) 4501-4500 TL	( ) 6001-6500 TL	( ) 8001-8500 TL	( ) 10.000 and above
( ) 3001-3500 TL	( ) 4501-5000 TL	( ) 6501-7000 TL	( ) 8501-9000 TL	( ) I do not want to reply

8. Please write your monthly total expenditures including food and beverage, rent, gas, electricity, transportation, school, installments, doctor or medicine.

_____

9. If you have completed this scale, your child:

First name:

Gender:

Date of birth (day / month / year):… ../… ... /… ..

THANKS FOR YOUR CONTRIBUTIONS.

APPENDIX G

DEMOGRAPHIC INFORMATION FORM FOR PARENTS

(TURKISH)

Bu kısımda sizlerden genel katılımcı özelliklerini anlamak üzere demografik bilgiler istenmektedir.

Anketi dolduran ebeveyn; Anne: _____

1. Lütfen yaşınızı gün/ay/ yıl biçiminde belirtiniz.

Anne için: …../……/…..

Lütfen kaç çocuğunuz olduğunu belirtiniz. _____

2. Evinizde siz ve tüm çocuklar dahil kaç kişi yaşıyor? Lütfen belirtiniz: _____

3. En son mezun olduğunuz okul seviyesi aşağıdakilerden hangisidir?

	Okula gitmedi	İkokul terk	İlkokul	Ortaokul	Lise Terk	Lise	Yüksekokul	Üniversite	Lisansüstü
Anne									
Baba									

5. Lütfen mesleğinizi belirtiniz.

Anne işi: _____

6. Haftada kaç gün çalışıyorsunuz? Günlük çalışma saatinizi belirtiniz.

Çalışıyor ise anne için: Haftada gün, günde____saat

7. **Hanenizin aylık toplam geliri aşağıda belirtilen aralıklardan hangisine aittir, lütfen işaretleyiniz.**

( ) 2000 ve altı	( ) 3501- 4000 arası	( ) 5001-5500 arası	( ) 7001-7500 arası	( ) 9001-9500 arası
( ) 2001 ve 2500 arası	( ) 4001-4500 arası	( ) 5501-6000 arası	( ) 7501-8000 arası	( ) 9501-10.000 arası
( ) 2501-3000 arası	( ) 4501-4500 arası	( ) 6001-6500 arası	( ) 8001-8500 arası	( ) 10.000 ve yukarısı
( ) 3001-3500 arası	( ) 4501-5000 arası	( ) 6501-7000 arası	( ) 8501-9000 arası	( ) Yanıt vermek Istemiyorum

8 .Bu ölçeği doldurduğunuz çocuğunuzun:

Adı: _____

Cinsiyeti: __

Doğum tarihi (gün/ay/yıl): …../……/…..

KATILIMINIZ İÇİN TEŞEKKÜRLER

APPENDIX H

DEMOGRAPHIC INFORMATION FORM

FOR TEACHERS (ENGLISH)

Date: _____

1. Name and Surname: _____
2. Age: _____
3. Gender: □Female □Male
4. Marital Status?

   □Married □Single □Other _____
5. What is your level of education?

   □Primary School □ Middle School □High School
   □Vocational School □Distance Education Faculty
   □University □Master Degree □Doctorate Degree
6. Which high school did you graduate from? _____
7. Which department did you graduate from university? _____
8. Did you graduate from the educational faculty? If not, how did you get the teaching formation? _____
9. How long have you been teaching? _____
10. Write name of the school that you are currently working. _____
11. 11. How long have you been teaching in the school that you are currently working? _____
12. What is class size of your classroom? _____
13. Write the age group of your classroom? _____
14. Write the type of program of your classroom (Half-day program or full-day program?). _____
15. Write duration length of a school day of your classroom. _____hours
16. Write in-service trainings and other training programs related with teaching and education that you attended.

_____

_____

_____

THANKS FOR YOUR CONTRIBUTIONS

APPENDIX I

DEMOGRAPHIC INFORMATION FORM FOR TEACHERS

(TURKISH)

Bugünün tarihi: _____

1. Yaşınız? _____
2. Cinsiyetiniz:_____
3. Medeni Durumunuz?

□Evli □Bekâr □Diğer _____

4. En son mezun olduğunuz okul (diploma alarak) hangisidir?

İlkokul	Ortaokul	Lise	Meslek Yüksek Okulu	Açık Öğretim Fakültesi	Üniversite	Yüksek Lisans	Doktora

5. Hangi liseden mezunsunuz? __
6. Üniversitede hangi bölümden mezun oldunuz? _____
7. Eğitim Fakültesinden mezun değilseniz öğretmenlik formasyonunuzu nasıl aldınız?
8. Ne kadar süredir öğretmenlik yapıyorsunuz? __
9. Şu an görev yaptığınız okulun adını yazınız.
10. Şu an görev yaptığınız okulda ne kadar süredir çalışıyorsunuz? _____
11. Şu anda öğretmenlik yaptığınız sınıfın mevcudu kaçtır? _____
12. Şu anda öğretmenlik yaptığınız sınıfın yaş grubunu yazınız. ___
13. Şu anda öğretmenlik yaptığınız sınıf eğitime tam gün mü yarım gün mü devam etmektedir? Toplam süre ile birlikte belirtiniz.

_____ gün _____saat

14. Öğretmenlik mesleği ile ilgili aldığınız hizmetiçi ve diğer eğitimleri yazınız

KATILIMINIZ İÇİN TEŞEKKÜRLER

APPENDIX J

CHILDREN'S BEHAVIOR QUESTIONNAIRE -VERY SHORT FORM

(ENGLISH)

On the next pages you will see a set of statements that describe children's reactions to a number of situations. We would like you to tell us what <u>your</u> child's reaction is likely to be in those situations. There are of course no "correct" ways of reacting; children differ widely in their reactions, and it is these differences we are trying to learn about. Please read each statement and decide whether it is a "<u>true</u>" or "<u>untrue</u>" description of your child's reaction <u>within the past six months</u>. Rating Scale; 1 extremely untrue of your child 2 quite untrue of your child 3 slightly untrue of your child 4 neither true nor false of your child 5 slightly true of your child 6 quite true of your child 7 extremely true of your child If you cannot answer one of the items because you have never seen the child in that situation, for example, if the statement is about the child's reaction to your singing and you have never sung to your child, then circle <u>NA</u> (not applicable).	**EXTREMELY UNTRUE**	**QUITE UNTRUE**	**SLIGHTLY UNTRUE**	**NEITHER TRUE NOR UNTRUE**	**SLIGHTLY TRUE**	**QUITE TRUE**	**EXTREMELY TRUE**	**NOT APPLICABLE**
1. Seems always in a big hurry to get from one place to another	1	2	3	4	5	6	7	99
2. Gets quite frustrated when prevented from doing something s/he wants to do.	1	2	3	4	5	6	7	99
3. When drawing or coloring in a book, shows strong concentration.	1	2	3	4	5	6	7	99
4. Likes going down high slides or other adventurous activities.	1	2	3	4	5	6	7	99
5. Is quite upset by a little cut or bruise.	1	2	3	4	5	6	7	99
6. Prepares for trips and outings by planning things s/he will need.	1	2	3	4	5	6	7	99
7. Often rushes into new situations.	1	2	3	4	5	6	7	99
8. Tends to become sad if the family's plans don't work out.	1	2	3	4	5	6	7	99
9. Tends to become sad if the family's plans don't work out.	1	2	3	4	5	6	7	99
10. Likes being sung to.	1	2	3	4	5	6	7	99
11. Is afraid of burglars or the "boogie man."	1	2	3	4	5	6	7	99
12. Notices it when parents are wearing new clothing.	1	2	3	4	5	6	7	99

13. Prefers quiet activities to active games.	1	2	3	4	5	6	7	99
14. When angry about something, s/he tends to stay upset for ten minutes or longer.	1	2	3	4	5	6	7	99
15. When building or putting something together, becomes very involved in what s/he is doing, and works for long periods	1	2	3	4	5	6	7	99
16. Likes to go high and fast when pushed on a swing.	1	2	3	4	5	6	7	99
17. Seems to feel depressed when unable to accomplish some task.	1	2	3	4	5	6	7	99
18. Is good at following instructions.	1	2	3	4	5	6	7	99
19. Takes a long time in approaching new situations.	1	2	3	4	5	6	7	99
20. Hardly ever complains when ill with a cold.	1	2	3	4	5	6	7	99
21. Likes the sound of words, such as nursery rhymes.	1	2	3	4	5	6	7	99
22. Is sometimes shy even around people s/he has known a long time.	1	2	3	4	5	6	7	99
23. Is very difficult to soothe when s/he has become upset.	1	2	3	4	5	6	7	99
24. Is quickly aware of some new item in the living room.	1	2	3	4	5	6	7	99
25. Is full of energy, even in the evening.	1	2	3	4	5	6	7	99
26. Is not afraid of the dark.	1	2	3	4	5	6	7	99
27. Sometimes becomes absorbed in a picture book and looks at it for a long time.	1	2	3	4	5	6	7	99
28. Does not like rough and rowdy games.	1	2	3	4	5	6	7	99
29. Is not very upset at minor cuts or bruises.	1	2	3	4	5	6	7	99
30. Approaches places s/he has been told are dangerous slowly and cautiously.	1	2	3	4	5	6	7	99
31. Is slow and unhurried in deciding what to do next.	1	2	3	4	5	6	7	99
32. Gets angry when s/he can't find something s/he wants to play with.	1	2	3	4	5	6	7	99
33. Enjoys gentle rhythmic activities such as rocking or swaying.	1	2	3	4	5	6	7	99
34. Sometimes turns away shyly from new acquaintances.	1	2	3	4	5	6	7	99
35. Becomes upset when loved relatives or friends are getting ready to leave following a visit.	1	2	3	4	5	6	7	99
36. Comments when a parent has changed his/her appearance.	1	2	3	4	5	6	7	99

APPENDIX K

CHILDREN'S BEHAVIOR QUESTIONNAIRE (TURKISH)

Talimat: Lütfen başlamadan önce dikkatlice okuyunuz Sonraki sayfalarda çocuğunuzun çeşitli durumlardaki tepkilerini tanımlayan çeşitli ifadelerle karşılaşacaksınız. Bu durumlar karşısında sizin çocuğunuzun tepkisinin nasıl olacağını belirtmenizi istiyoruz. Elbette, "doğru" tepki diye bir şey yoktur, çocuklar çok farklı şekilde tepki gösterebilirler ve biz de bu farklılıkların neler olduğunu öğrenmeye çalışıyoruz. Lütfen her ifadeyi okuyup onun, çocuğunuzun "geçtiğimiz altı ay içinde" benzer durumlardaki tepkisini "doğru" mu "yanlış" mı ifade ettiğine karar veriniz. Eğer bu ifade; çocuğunuz için tamamıyla yanlışsa 1'i çocuğunuz için çoğunlukla yanlışsa 2'yi çocuğunuz için kısmen yanlışsa 3'ü çocuğunuz için ne doğru ne yanlışsa 4'ü çocuğunuz için kısmen doğruysa 5'i çocuğunuz için çoğunlukla doğruysa 6'yı çocuğunuz için tamamıyla doğruysa 7'yi daire içine alınız. Eğer çocuğunuzda böyle bir durumla karşılaşmamışsanız ve bu nedenle o maddeyi yanıtlayamıyorsanız uygun değil (UD) şıkkını daire içine alınız. Lütfen her durum için bir rakamı ya da uygun değil şıkkını daire içine aldığınızdan emin olunuz	**TAMAMEN YANLIŞ**	**ÇOĞUNLUKLA YANLIŞ**	**KISMEN YANLIŞ**	**NE YANLIŞ NE DOĞRU**	**KISMEN DOĞRU**	**ÇOĞUNLUKLA DOĞRU**	**TAMAMEN DOĞRU**	**UYGUN DEĞİL**
1. Bir yerden bir yere giderken her zaman çok aceleci ve telaşlı görünür.	1	2	3	4	5	6	7	UD
2. Yapmak istediği bir şeyden alıkonulduğunda çok canı sıkılır ve huzursuz olur.	1	2	3	4	5	6	7	UD
3. Resim yaparken ve boyama yaparken çok iyi konsantre olur (odaklanır).	1	2	3	4	5	6	7	UD
4. Yüksek kaydıraklardan kaymayı ya da başka heyecanlı deneyimlerden hoşlanır.	1	2	3	4	5	6	7	UD
5. Ufak bir kesik ya da yaralanma yaşasa dahi oldukça yoğun bir tepki gösterir, kızar.	1	2	3	4	5	6	7	UD
6.Gezmeye gitmeden ya da dışarı çıkmadan önce yapacaklarını ve ihtiyaç duyacağı şeyleri önceden planlar.	1	2	3	4	5	6	7	UD
7. Yeni deneyimlere çoğu kez düşünmeden girer.	1	2	3	4	5	6	7	UD
8. Ailenin planları yolunda gitmediğinde üzülmeye eğilimi vardır	1	2	3	4	5	6	7	UD

9. Kendisine şarkı söylenilmesini sever.	1	2	3	4	5	6	7	UD
10. Hemen hemen herkesin yanında rahat eder	1	2	3	4	5	6	7	UD
11. Hırsız veya "öcü" lerden korkar.	1	2	3	4	5	6	7	UD
12. Ebeveynleri yeni kıyafet giydiklerinde farkına varır.	1	2	3	4	5	6	7	UD
13. Hareketli oyunlara kıyasla sakin etkinlikleri tercih eder.	1	2	3	4	5	6	7	UD
14. Bir şeye sinirlendiğinde en az on dakika kızgın olur.	1	2	3	4	5	6	7	UD
15. Bir şey yaparken veya bir şeyleri bir araya getirirken yaptığı işe iyice kendini kaptırır ve uzun süre yaptığı şeyin üzerinde çalışır.	1	2	3	4	5	6	7	UD
16. Salıncakta sallanırken çok yükseğe çıkmayı ve hızlı sallanmayı sever.	1	2	3	4	5	6	7	UD
17. Bazı şeyleri başaramadığında morali bozulur	1	2	3	4	5	6	7	UD
18. Yönergeleri takip etmede iyidir. *Yönerge: "Dur!, Geri dön!, Koş!, gibi"	1	2	3	4	5	6	7	UD
19. Yeni deneyimlere girişmek için adım atması uzun zaman alır.	1	2	3	4	5	6	7	UD
20. Soğuk algınlığı geçirirken hastalığından nadiren şikayet eder.	1	2	3	4	5	6	7	UD
21. Çocuk şarkılarında olduğu gibi kelimeleri ahenkli (ritimli) bir şekilde duymaktan hoşlanır.	1	2	3	4	5	6	7	UD
22. Uzun zamandır tanıdığı insanlar arasında bile bazen çekingendir.	1	2	3	4	5	6	7	UD
23. Kızdığında (öfkelendiğinde) sakinleştirilmesi çok zordur.	1	2	3	4	5	6	7	UD
24. Oturma odasına yeni bir şey koyulduğunda onu hemen fark eder.	1	2	3	4	5	6	7	UD
25. Akşamları bile çok enerji doludur.	1	2	3	4	5	6	7	UD
26. Karanlıktan korkmaz.	1	2	3	4	5	6	7	UD
27. Bazen resimli bir kitaba bakarken tüm dikkatini kitaba verir ve uzun süre ona bakar.	1	2	3	4	5	6	7	UD
28. Kaba olan ve çocukların birbirine karşı fiziksel güç kullandığı oyunları sevmez.	1	2	3	4	5	6	7	UD
29. Ufak bir kesik ya da yaralanma yaşadığında pek bir tepki göstermez, kızmaz.	1	2	3	4	5	6	7	UD
30. Tehlikeli olduğu söylenen yerlere yavaşça ve dikkatlice yaklaşır.	1	2	3	4	5	6	7	UD
31. Sonraki yapacağı şeye karar vermede çok yavaştır ve acele etmez	1	2	3	4	5	6	7	UD
32. Oynamak istediği bir şeyi bulamazsa sinirlenir.	1	2	3	4	5	6	7	UD
33. Sallanmak gibi yumuşak ve ritmik deneyimlerden hoşlanır.	1	2	3	4	5	6	7	UD
34. Bazen çok samimi olmadığı kişilerin yanında çekingen davranır.	1	2	3	4	5	6	7	UD
35. Sevdiği akrabaların veya arkadaşların ziyaretlerinin sonunda gitmek için hazırlanmaları, onu mutsuz eder ve kızdırır	1	2	3	4	5	6	7	UD
36. Bir ebeveyni dış görünümünü değiştirdiğinde, bu durumla ilgili konuşur.	1	2	3	4	5	6	7	UD

APPENDIX L

CHILD BEHAVIOR CHECKLIST / CAREGIVER-TEACHER

REPORT FORM (ENGLISH)

Below is a list of items that describe children. For each item that describes the child now or within the past 2 months, please circle the 2 if the item is very true or often true of the child. Circle the 1 if the item is somewhat or sometimes true of the child. If the item is not true of the child, circle the 0. Please answer all items as well as you can, even if some do not seem to apply to the child. 0 = Not True (as far as you know) 1 = Somewhat or Sometimes True 2 = Very True or Often True	**Not true**	**Somewhat or sometimes True**	**Very or often true**
1. Aches or pains (without medical cause; do not include stomach or headaches)	0	1	2
2. Acts too young for age	0	1	2
3. Afraid to try new things	0	1	2
4. Avoids looking others in the eye	0	1	2
5. Can't concentrate, can't pay attention for long	0	1	2
6. Can't sit still, restless, or hyperactive	0	1	2
7. Can't stand having things out of place	0	1	2
8. Can't stand waiting; wants everything now	0	1	2
9. Chews on things that aren't edible	0	1	2
10. Clings to adults or too dependent	0	1	2
11. Constantly seeks help	0	1	2
12. Apathetic or unmotivated	0	1	2
13. Cries a lot	0	1	2
14. Cruel to animals	0	1	2
15. Defiant	0	1	2
16. Demands must be met immediately	0	1	2
17. Destroys his/her own things	0	1	2
18. Destroys things belonging to his/her family or other children	0	1	2
19. Daydreams or get lost in his/her thoughts	0	1	2
20. Disobedient	0	1	2
21. Disturbed by any change in routine	0	1	2
22. Cruelty, bullying or meanness to others	0	1	2
23. Doesn't answer when people talk to him/her	0	1	2
24. Difficulty following directions	0	1	2
25. Doesn't get along with other children	0	1	2
26. Doesn't know how to have fun; acts like a little adult	0	1	2
27. Doesn't seem to feel guilty after misbehaving	0	1	2
28. Disturbs other children	0	1	2
29. Easily frustrated	0	1	2
30. Easily jealous	0	1	2
31 a. Eats or drinks things that are not food—don't include sweets	0	1	2
31 b. Describe:			
32 a. Fears certain animals, situations, or places	0	1	2
32 b. Describe:			
33. Feelings are easily hurt	0	1	2
34. Gets hurt a lot, accident-prone	0	1	2

35. Gets in many fights	0	1	2
36. Gets into everything	0	1	2
37. Gets too upset when separated from parents	0	1	2
38. Short tempered, unpredictable	0	1	2
39. Headaches (without medical cause)	0	1	2
40: Hits others	0	1	2
41. Holds his/her breath	0	1	2
42. Hurts animals or people without meaning to	0	1	2
43. Looks unhappy without good reason	0	1	2
44. Angry moods	0	1	2
45. Nausea, feels sick (without medical cause)	0	1	2
46. Nervous movements or twitching (describe):			
47. Nervous, high-strung, or tense	0	1	2
48. Will not complete the tasks and activities asked	0	1	2
49. She/he is afraid of nursery or kindergarten	0	1	2
50. Overtired	0	1	2
51. Shows panic for no good reason	0	1	2
52.The kids tease/ make fun of her/him, get her/him upset	0	1	2
53. Physically attacks people	0	1	2
54 a. Picks nose, skin, or other parts of body	0	1	2
54 b. Describe:			
55. Plays with own sex parts too much	0	1	2
56. Poorly coordinated or clumsy	0	1	2
57 a. Problems with eyes (without medical cause)	0	1	2
57 b. Describe			
58. Punishment doesn't change his/her behavior	0	1	2
59. Quickly shifts from one activity to another	0	1	2
60. Rashes or other skin problems (without medical cause)	0	1	2
61. Refuses to eat	0	1	2
62. Refuses to play active games	0	1	2
63. Repeatedly rocks head or body	0	1	2
64. Inattentive, gets distracted easily	0	1	2
65. Lies or deceptive	0	1	2
66. Screams a lot	0	1	2
67. Seems unresponsive to affection	0	1	2
68. Self-conscious or easily embarrassed	0	1	2
69. Selfish or won't share	0	1	2
70. Shows little affection toward people	0	1	2
71. Shows little interest in things around him/her	0	1	2
72. Shows too little fear of getting hurt	0	1	2
73. Too shy or timid	0	1	2
74. Disliked by children	0	1	2
75. Too energetic	0	1	2
76. Speech problem	0	1	2
Describe speech problem:			
77. Stares into space or seems preoccupied	0	1	2
78. Stomachaches or cramps (without medical cause)	0	1	2
79. Rapid shifts between sadness and excitement	0	1	2
80 a. Strange behavior	0	1	2
80 b. Describe strange behavior:			
81. Stubborn, sullen, or irritable	0	1	2
82. Sudden changes in mood or feelings	0	1	2
83. Sulks a lot	0	1	2

84. Ridicules or teases people	0	1	2
85. Temper tantrums or hot temper	0	1	2
86. Too concerned with neatness or cleanliness	0	1	2
87. Too fearful or anxious	0	1	2
88. Uncooperative	0	1	2
89. Underactive, slow moving, or lacks energy	0	1	2
90. Unhappy, sad, or depressed	0	1	2
91. Unusually loud	0	1	2
92 a. Upset by new people or situations	0	1	2
92 b. Upset by new people or situations (Describe)			
93. Vomiting, throwing up (without medical cause)	0	1	2
94. Wakes up often at night	0	1	2
95. Wanders away	0	1	2
96. Wants a lot of attention	0	1	2
97. Whining	0	1	2
98. Withdrawn, doesn't get involved with others	0	1	2
99. Worries	0	1	2
100. Please write in any problems the child has that were not listed above			

APPENDIX M

CHILD BEHAVIOR CHECKLIST / CAREGIVER-TEACHER

REPORT FORM (TURKISH)

ID No:

I.Çocuk ne çeşit bir bakım ya da eğitim olanağından yararlanmaktadır? (Ör; anaokulu, kreş, okula hazırlık programı vb.)

II.Çocuk haftada kaç saat bakım ya da eğitim görmektedir?

Saat;

III.Çocuğu ne kadar iyi tanıyorsunuz?

O Pek iyi değil **O Orta düzeyde** **O Çok iyi**

Aşağıda çocukların özelliklerini tanımlayan bir dizi madde bulunmaktadır. Her bir madde çocuğunuzun şu andaki ya da son 2 ay içindeki durumunu belirtmektedir. Bir madde çocuğunuz için çok ya da sıklıkla doğru ise 2, bazen ya da biraz doğru ise 1, hiç doğru değilse 0 sayılarını yuvarlak içine alınız. Lütfen tüm maddeleri işaretlemeye çalışınız.	**Doğru Değil**	**Bazen ya da biraz doğru**	**Çok ya da sıklıkla doğru**
1. Ağrı ve sızıları vardır (tıbbi nedenleri olmayan).	0	1	2
2. Yaşından daha küçük gibi davranır.	0	1	2
3. Yeni şeyleri denemekten korkar.	0	1	2
4. Başkalarıyla göz göze gelmekten kaçınır.	0	1	2
5. Dikkatini uzun süre toplamakta ya da sürdürmekte güçlük çeker.	0	1	2
6. Yerinde rahat oturamaz, huzursuz ve çok hareketlidir.	0	1	2
7. Eşyalarının yerinin değiştirilmesine katlanamaz.	0	1	2
8. Beklemeye tahammülü yoktur, her şeyin anında olmasını ister.	0	1	2
9. Yenmeyecek şeyleri ağzına alıp çiğner.	0	1	2
10. Yetişkinlerin dizinin dibinden ayrılmaz, onlara çok bağımlıdır.	0	1	2
11. Sürekli yardım ister.	0	1	2
12. Kayıtsız ya da ilgisizdir.	0	1	2
13. Çok ağlar.	0	1	2
14. Hayvanlara eziyet eder.	0	1	2
15. Karşı gelir.	0	1	2
16. İstekleri anında karşılanmalıdır.	0	1	2
17. Eşyalarına zarar verir.	0	1	2
18. Başkasına ait eşyalara zarar verir.	0	1	2
19. Hayal kurar, düşüncelerinde kaybolur.	0	1	2
20. Söz dinlemez, kurallara uymaz.	0	1	2
21. Yaşam düzenindeki en ufak bir değişiklikten rahatsız olur.	0	1	2
22. Can yakıcı, saldırgan ve zarar vericidir.	0	1	2
23. Kendisiyle konuşulduğunda yanıt vermez.	0	1	2
24. Yönergeleri izlemekte güçlük çeker.	0	1	2
25. Diğer çocuklarla anlaşamaz.	0	1	2
26. Nasıl eğleneceğini bilmez, büyümüş de küçülmüş gibi davranır.	0	1	2
27. Hatalı davranışından dolayı suçluluk duymaz.	0	1	2
28. Diğer çocukları rahatsız eder.	0	1	2
29. Güçlükle karşılaştığında çabuk vazgeçer.	0	1	2
30. Kolay kıskanır.	0	1	2

31 a. Yenilip içilmeyecek şeyleri yer ya da içer (kum, kil, kalem, silgi gibi).	0	1	2
31 b. Yenilip içilmeyecek şeyleri yer ya da içer (kum, kil, kalem, silgi gibi). (Açıklayınız):			
32 a. Kreş, anaokulu dışındaki ortamlardan, yerlerden ya da bazı hayvanlardan korkar	0	1	2

32 b. Kreş, anaokulu dışındaki ortamlardan, yerlerden ya da bazı hayvanlardan korkar. (Açıklayınız):			
33. Duyguları kolayca incinir.	0	1	2
34. Çok sık bir yerlerini incitir, başı kazadan kurtulmaz.	0	1	2
35. Çok kavga dövüş eder.	0	1	2
36. Her şeye burnunu sokar.	0	1	2
37. Anne-babasından ayrıldığında çok tedirgin olur.	0	1	2
38. Aniden parlar ve ne yapacağı kestirilemez.	0	1	2
39. Baş ağrıları vardır (tıbbi nedeni olmayan).	0	1	2
40: Başkalarına vurur.	0	1	2
41. Nefesini tutar.	0	1	2
42. İnsanları ya da hayvanları nedensiz yere incitir.	0	1	2
43. Hiç nedeni yokken mutsuz görünür.	0	1	2
44. Öfkelidir.	0	1	2
45. Midesi bulanır, kendini hasta hisseder (tıbbi nedeni olmayan).	0	1	2
46. Bir yerleri seyirir, tikleri vardır (Açıklayınız):			
47. Sinirli ve gergindir.	0	1	2
48. Yapması istenen görevleri, etkinlikleri yerine getiremez.	0	1	2
49. Kreş ya da anaokulundan korkar.	0	1	2
50. Aşırı yorgundur.	0	1	2
51. Kıpır kıpırdır, elleri ayakları sürekli oynar.	0	1	2
52. Çocuklar onunla dalga geçer, onu kızdırır.	0	1	2
53. Fiziksel olarak insanlara saldırır, onlara vurur.	0	1	2
54 a. Burnunu karıştırır, cildini ya da vücuduyla oynar, yolar.	0	1	2
54 b. Burnunu karıştırır, cildini ya da vücuduyla oynar, yolar. (Açıklayınız):			
55. Cinsel organlarıyla çok fazla oynar.	0	1	2
56. Hareketlerinde tam kontrollü değildir, sakardır.	0	1	2
57 a. Tıbbi nedeni olmayan, görme bozukluğu dışında göz ile ilgili sorunları vardır.	0	1	2
57 b. Tıbbi nedeni olmayan, görme bozukluğu dışında göz ile ilgili sorunları vardır. (Açıklayınız):			
58. Verilen cezaya rağmen davranışını değiştirmez.	0	1	2
59. Bir uğraş ya da faaliyetten diğerine çabuk geçer.	0	1	2
60. Döküntüleri ya da başka cilt sorunları vardır (tıbbi nedeni olmayan).	0	1	2
61. Yemek yemeyi reddeder.	0	1	2
62. Hareketli, canlı oyunlar oynamayı reddeder.	0	1	2
63. Başını ve bedenini tekrar tekrar sallar.	0	1	2
64. Dikkatsizdir, dikkati çabuk dağılır.	0	1	2
65. Yalan söyler, kandırır.	0	1	2
66. Çok bağırır, çağırır, çığlık atar.	0	1	2
67. Sevgiye, şefkate tepkisiz görünür.	0	1	2
68. Sıkılgan ve utangaçtır.	0	1	2
69. Bencildir, paylaşmaz.	0	1	2

70. İnsanlara karşı çok az sevgi gösterir.	0	1	2
71. Çevresindeki şeylere çok az ilgi gösterir.	0	1	2
72. Canının yanmasından, incinmekten pek az korkar.	0	1	2
73. Çekingen ve ürkektir.	0	1	2
74. Çocuklar tarafından sevilmez.	0	1	2
75. Çok hareketlidir.	0	1	2
76. Konuşma sorunu vardır.	0	1	2
(Açıklayınız):	0	1	2
77. Bir yere boş gözlerle uzun süre bakar ve dalgın görünür.	0	1	2
78. Mide-karın ağrısı ve krampları vardır (tıbbi nedeni olmayan).	0	1	2
79. Kurallara aşırı uyar, kural dışına hiç çıkmaz.	0	1	2
80 a. Yadırganan, tuhaf davranışları vardır.	0	1	2
80 b. Yadırganan, tuhaf davranışları vardır. (Açıklayınız):			
81. İnatçı, somurtkan ve rahatsız edicidir.	0	1	2
82. Duyguları değişkendir, bir anı bir anını tutmaz.	0	1	2
83. Çok sık küser, surat asar, somurtur.	0	1	2
84. Çok dalga geçer, kızdırır.	0	1	2
85. Öfke nöbetleri vardır, çok çabuk öfkelenir.	0	1	2
86. Temiz, titiz ve düzenlidir.	0	1	2
87. Çok korkak ve kaygılıdır.	0	1	2
88. İş birliği yapmaz.	0	1	2
89. Hareketsiz ve yavaştır, enerjik değildir.	0	1	2
90. Mutsuz, üzgün, çökkün ve keyifsizdir.	0	1	2
91. Çok gürültücüdür.	0	1	2
92 a. Yeni tanıdığı insanlardan ve durumlardan çok tedirgin olur.	0	1	2
92 b. Yeni tanıdığı insanlardan ve durumlardan çok tedirgin olur. (Açıklayınız):			
93. Kusmaları vardır (tıbbi nedeni olmayan).	0	1	2
94. Ebeveynleri gece sık sık uyandığını söyler.	0	1	2
95. Alıp başını gider.	0	1	2
96. Çok ilgi ve dikkat ister.	0	1	2
97. Sızlanır, mızırdanır.	0	1	2
98. İçe kapanıktır, başkalarıyla birlikte olmak istemez.	0	1	2
99. Evhamlıdır.	0	1	2
100. Öğrencinizin burada değinilmeyen başka sorunu varsa lütfen yazınız:			

APPENDIX N

EMOTION REGULATION CHECKLIST (ENGLISH)

Please tick the box that applies most to this child. Please answer every question as best you can.
We want you to think of each sentence as 1 "never or rarely", 2 "sometimes", 3 "often", 4 "almost always or always, and mark the most appropriate for the child

	Never	**Sometimes**	**Frequently**	**Always**
1. Is a cheerful child	1	2	3	4
2. Exhibits wide mood swings (child's emotional state is difficult to anticipate because s/he moves quickly from positive to negative moods)	1	2	3	4
3. Responds positively to neutral or friendly approaches by adults.	1	2	3	4
4. Transitions well from one activity to another; does not become anxious, angry, distressed or overly excited when moving from one activity to another.	1	2	3	4
5. Can recover quickly from episodes of upset or distress (e.g. does not pout or remain sullen, anxious or sad after emotionally distressing events)	1	2	3	4
6. Is easily frustrated.	1	2	3	4
7. Responds positively to neutral or friendly approaches by peers.	1	2	3	4
8. Is prone to angry outbursts / tantrums easily	1	2	3	4
9. Is able to delay gratification (wait for good things)	1	2	3	4
10. Takes pleasure in the distress of others (e.g. laughs when another person gets hurt or punished; enjoy teasing others)	1	2	3	4
11. Can modulate excitement in emotionally arousing situations (e.g. does not get 'carried away' in high-energy situations, or overly excited in inappropriate contexts.	1	2	3	4
12. Is whiny or clingy with adults.	1	2	3	4
13. Is prone to disruptive outbursts of energy and exuberance	1	2	3	4
14. Responds angrily to limit-setting by adults.	1	2	3	4
15. Can say when s/he is feeling sad, angry or mad, fearful or afraid.	1	2	3	4
16. Seems sad or listless.	1	2	3	4
17. Is overly exuberant when attempting to engage other in play.	1	2	3	4
18. Displays flat affect (expression is vacant and inexpressive; child seems emotionally absent)	1	2	3	4
19. Responds negatively to neutral or friendly approaches by peers (e.g. may speak in an angry tone of voice or respond fearfully)	1	2	3	4
20. Is impulsive.	1	2	3	4
21. Is empathic towards others; shows concern when others are upset or distressed.	1	2	3	4
22. Displays exuberance that others find intrusive or disruptive.	1	2	3	4
23. Displays appropriate negative emotions (anger, fear, frustration, distress) in response to hostile, aggressive or intrusive acts by peers.	1	2	3	4
24. Displays negative emotions when attempting to engage others in play.	1	2	3	4

APPENDIX O

EMOTION REGULATION CHECKLIST (TURKISH)

Şimdi size çocukların duygusal durumları ile ilgili bir dizi cümle okuyacağım. Çocukta (ÇOCUĞUN İSMİ) bu davranışları ne kadar sıklıkla gözlemlediğinizi belirtiniz. Her bir cümleyi, 1 "hiçbir zaman ya da nadiren", 2 "bazen", 3 "sık sık", 4 "neredeyse her zaman ya da her zaman" olarak düşünüp, çocuk (ÇOCUĞUN İSMİ) için en uygun olanı bize söylemenizi istiyoruz.	**Hiçbir Zaman**	**Bzen**	**Sık Sık**	**Her Zaman**
1. Neşeli bir çocuktur.	1	2	3	4
2. Duygu hali çok değişkendir (Çocuğun duygu durumunu tahmin etmek zordur çünkü neşeli ve mutluyken kolayca üzgünleşebilir).	1	2	3	4
3. Yetişkinlerin arkadaşça ya da sıradan (nötr) yaklaşımlarına olumlu karşılık verir	1	2	3	4
4. Bir faaliyetten diğerine kolayca geçer; kızıp sinirlenmez, endişelenmez (kaygılanmaz), sıkıntı duymaz veya aşırı derecede heyecanlanmaz	1	2	3	4
5. Üzüntüsünü veya sıkıntısını kolayca atlatabilir (örneğin, canını sıkan bir olay sonrasında uzun süre surat asmaz, endişeli veya üzgün durmaz).	1	2	3	4
6. Kolaylıkla hayal kırıklığına uğrayıp sinirlenir (huysuzlaşır, öfkelenir).	1	2	3	4
7. Yaşıtlarının arkadaşça ya da sıradan (nötr) yaklaşımlarına olumlu karşılık verir.	1	2	3	4
8. Öfke patlamalarına, huysuzluk nöbetlerine eğilimlidir.	1	2	3	4
9. Hoşuna giden bir şeye ulaşmak için bekleyebilir. (örneğin, şeker almak için sırasını beklemesi gerektiğinde keyfi kaçmaz veya heyecanını kontrol edebilir).	1	2	3	4
10. Başkalarının sıkıntı hissetmesinden keyif duyar (örneğin, biri incindiğinde veya ceza aldığında güler; başkalarıyla alay etmekten zevk alır).	1	2	3	4
11. Heyecanını kontrol edebilir (örneğin, çok hareketli oyunlarda kontrolünü kaybetmez veya uygun olmayan ortamlarda aşırı derecede heyecanlanmaz).	1	2	3	4
12. Mızmızdır ve yetişkinlerin eteğinin dibinden ayrılmaz.	1	2	3	4
13. Ortalığı karıştırarak çevresine zarar verebilecek enerji patlamaları ve taşkınlıklara eğilimlidir.	1	2	3	4
14. Yetişkinlerin sınır koymalarına sinirlenir.	1	2	3	4
15. Üzüldüğünü, kızıp öfkelendiğini, veya korktuğunu söyleyebilir.	1	2	3	4
16. Üzgün veya halsiz görünür.	1	2	3	4
17. Oyuna başkalarını katmaya çalışırken aşırı enerjik ve hareketlidir.	1	2	3	4
18. Yüzü ifadesizdir; yüz ifadesinden duyguları anlaşılmaz.	1	2	3	4
19. Yaşıtlarının arkadaşça ya da sıradan (nötr) yaklaşımlarına olumsuz karşılık verir (örneğin kızgın bir ses tonuyla konuşabilir ya da ürkek davranabilir).	1	2	3	4

20. Düşünmeden, ani tepkiler verir.	1	2	3	4
21. Kendini başkalarının yerine koyarak onların duygularını anlar; başkaları üzgün ya da sıkıntılı olduğunda onlara ilgi gösterir.	1	2	3	4
22. Başkalarını rahatsız edecek veya etrafa zarar verebilecek kadar aşırı enerjik, hareketli davranır.	1	2	3	4
23. Yaşıtları ona saldırgan davranır ya da zorla işine karışırsa yerinde olumsuz duygular gösterir (örneğin kızgınlık, korku, öfke, sıkıntı).	1	2	3	4
24. Oyuna başkalarını katmaya çalışırken olumsuz duygular gösterir (örneğin, aşırı heyecan, kızgınlık, üzüntü).	1	2	3	4

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