LONGITUDINAL RELATIONS OF EXTERNALIZING AND INTERNALIZING BEHAVIOR PROBLEMS WITH PARENTAL CHILD REARING PRACTICES AND TEMPERAMENT DURING TRANSITION FROM PRESCHOOL TO SCHOOL ENTRY

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To my parents…

ABSTRACT

Externalizing and internalizing behavior problems have been regarded as crucial markers of maladjustment across childhood and adolescence (Zahn-Waxler et al., 2000). Among several etiological factors; parental child-rearing practices and child temperament have documented to have unique as well as joint contributions to both adjustment and maladjustment outcomes of young children. This study examined mediational relations of child temperament with maternal child-rearing practices and externalizing and internalizing behavior problems in a 3-wave longitudinal study. A total of 293 Turkish preschool children (M_{age}=49.1 months, SD=3.86, range=39-58 months) and their mothers were recruited for this study. At age 4 maternal child rearing, at age 6 child temperament, and finally at age 7 behavior problems were measured via mothers' reports. It was hypothesized that maternal practices would longitudinally predict children's temperamental approach and reactivity. We further hypothesized that child's approach and reactivity would mediate longitudinal relations between maternal practices and externalizing and internalizing behavior problems. Results indicated that the direction of the longitudinal relationship between maternal child-rearing and child's temperament was from maternal warmth to child's reactivity such that higher levels of maternal warmth when children were 4 year-old predicted lower levels of children's reactivity at age 6. Moreover, maternal warmth at age 4 negatively predicted children's reactivity at age 6, which in turn predicted both externalizing and internalizing problems at age 7 positively. Accordingly, child's reactivity fully mediated the link between maternal warmth and externalizing behavior problems. This study shed light on the mechanism in which parental child rearing practices, child's temperamental characteristics and behavior problems were longitudinally related. Findings of the current study can inform prevention/intervention programs aiming at eradicating behavior problems earlier in childhood.

Keywords: preschool, child rearing behavior, warmth, punishment, temperament, reactivity, approach, externalizing behavior problem, internalizing behavior problem

ÖZET

Dışsallaştırma ve içselleştirme davranış problemleri çocukluk ve ergenlik dönemi uyum sorunlarının önemli göstergeleridir (Zahn-Waxler ve ark., 2000). Davranış problemlerini yordayan birçok etiyolojik faktör arasından öne çıkan anne-babaların çocuk yetiştirme tutumları ve çocukların mizaç özelliklerinin davranış problemleri üzerindeki ayrı ve ortak etkileri araştırmalar tarafından ortaya konulmuştur. Bu çalışmada çocukların mizaç özelliklerinin, annelerin çocuk yetiştirme tutumları ve çocukların davranış problemleri arasındaki ilişkide aracı rolünün üç-zamanlı boylamsal bir çalışmada incelenmesi amaçlanmıştır. Çocuklar 4 yaşındayken annelerin tutumları, 6 yaşındayken çocukların mizaç özellikleri ve 7 yaşındayken davranış problemleri anne raporuyla ölçülmüştür. Çalışmaya 291 okul öncesi dönemindeki çocuk (ortalama yaş=49.1 ay, SS=3.86, ranj=39-58 ay) ve anneleri katılmıştır. Çalışmada annelerin çocuk yetiştirme davranışlarının çocukların mizaç özelliklerini yordayacağı ve mizaç özelliklerinin de annelerin çocuk yetiştirme davranışları ile çocukların içselleştirme ve dışsallaştırma davranış problemleri arasındaki boylamsal ilişkide aracı değişken olacağı varsayılmıştır. Bulgular, anne çocuk yetiştirme davranışları ile çocuğun mizacı arasındaki ilişkinin yönünün, annenin çocuk yetiştirme davranışlarından çocukların mizacına doğru olduğunu göstermiş ve çocuk yetiştirmedeki sıcaklık boyutunun (4 yaş) çocukların tepkisel mizaç özelliğini 2 yıl sonra negatif olarak yordadığını (6 yaş) ortaya koymuştur. Ayrıca, bulgular, annenin sıcak çocuk yetiştirme davranışının (4 yaş) çocukların 6 yaşındaki tepkisel mizaç özelliğini negatif olarak yordadığını, çocukların 6 yaşındaki tepkisel mizaç özelliğinin ise dışsallaştırma ve içselleştirme davranış problemlerini (7 yaş) pozitif olarak yordadığını ortaya koymuştur. Bu doğrultuda bulgular, çocukların 6 yaşındaki tepkisel mizaç özelliğinin annenin sıcak çocuk yetiştirme davranışı (4 yaş) ile çocukların dışsallaştırma davranış problemleri (7 yaş) arasındaki boylamsal ilişkide aracı rol oynadığını göstermiştir. Bu çalışmanın bulguları davranış problemlerini erken çocukluk döneminde

ortadan kaldırmayı amaçlayan önleme/müdahale programlarını bilgilendirebilmesi açısından önemlidir.

Anahtar kelimeler: okulöncesi, çocuk yetiştirme davranışları, sıcaklık, ceza, mizaç, tepkisellik, yakınlık, dışsallaştırma davranış problemleri ve içselleştirme davranış problemleri, boylamsal çalışma

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CHAPTER 1
INTRODUCTION

Widening our knowledge of etiology, progression, and consequences of maladjustment among young children has a great importance as long as the effectiveness of early prevention and intervention attempts has been concerned (Anderson, 2007; Comer, Chow, Chan, Cooper-Vince, & Wilson, 2013; Erol, Şimsek, Öner, & Münir, 2005). Presence of behavior problems that have mostly been classified into two broad categories as externalizing and internalizing problems have been regarded as crucial markers of maladjustment across childhood and adolescence (Zahn-Waxler, Klimes-Dougan, & Slattery, 2000). While externalizing problems involve acting-out, aggressive, and undercontrolled behaviors such as hyperactivity, impulsivity, conduct difficulties, and disobedience; internalizing problems reflect overcontrolled reactions rather directed inward such as anxiety, depression, withdrawn behavior, and somatic complaints (Achenbach, Edelbroock, & Howel, 1987; Bongers, Koot, Van der Ende, & Verhulst, 2003, Rubin and Mills, 1991; Zahn-Waxler et al., 2000).

Both of these behaviors have been observed to emerge early in childhood, and they are considered as typical for young children (Achenbach & Rescorla, 2004; Lilienfeld, 2003; Stone, Otten, Engels, Kuijbers, & Janssens, 2015; Zahn-Waxler et al., 2000). Campbell (1995) indicated that approximately 10-15 % of preschool children display mild to moderate levels of behavior problems which confirms the typicality of these problems prior to school entry. A more recent review by Bayer et al. (2011) reported similar prevalence rates suggesting that up to 15% children who aged 1.5 to 5 has been affected by externalizing and internalizing problems. There are also studies specifically referring to the epidemiology of either externalizing or internalizing problems. Powell, Fixen, and Dunlap (2003) have

revealed that 8 to 25% of preschool and kindergarten children displays externalizing problems in the classroom. To note, externalizing behavior problems in childhood have received greater deal of attention from researchers compared to internalizing behavior problems in the sense that they are more salient and outer-directed (Rubin & Mills, 1991). However, there have been also studies specifically focused on internalizing problems in early childhood. In one study, for instance, prevalence of internalizing problems among preschool children was estimated to be between 10-15%, and these problems were observed to show stability through childhood and adolescence (Bayer, Sanson, & Hemphill, 2006).

Although symptoms for both externalizing and internalizing behaviors have been observed to emerge at early childhood (Achenbach & Rescorla, 2004; Campbell, 1995), and co-occur (Bornstein, Hahn, & Haynes, 2010; Lilienfeld, 2003; Stone et al., 2015), they follow different developmental trajectories across childhood and adolescence (Bongers et al., 2003). Research have suggested that externalizing symptoms which could emerge as early as toddlerhood are inclined to decline during the preschool years and it is observed to be normatively low until adolescence (Campbell, Shaw, & Gilliom, 2000; Crijnen, Achenbach, & Verhulst, 1999; Mesman et al., 2009; Lorber & Egeland, 2009; Ticholovsky, 2011). Contrary to longitudinal pattern of externalizing problems, internalizing problems which are also evident in early childhood follow an ever-increasing pattern across childhood and adolescence (Bongers et al., 2003; Gilliom & Shaw, 2004). These developmental patterns, however, are not valid for all children meaning that while signs of behavior problems will persist in later ages for some young children (Broidy et al., 2003), they disappear for others beyond early childhood (Cicchetti & Toth, 1998; Williams et al., 2009). For instance, Campbell et al. (2000) and Ticholovsky (2011) have reported that there is still a considerable number of children who continue to exhibit externalizing symptoms beyond early childhood

(Campbell et al., 2000; Ticholovsky, 2011). Therefore, it is important to figure out the reasons why behavior problems are continuous in some cases but not in others (Chang, Olson, Sameroff, & Sexton 2011; Ticholovsky, 2011).

Moreover, both externalizing and internalizing problems interfere with children's social and academic functioning and are associated with a wide range of adjustment problems at later ages (Anderson, 2007; Bayer et al., 2011; Dunlap et al., 2006; Wenar & Kerig, 2000). In this sense, early identification and prevention of these problems turns out to be an important issue for the well-being of children (Dunlap et al., 2006). Indeed, there exist a plenty of studies examining behavior problems after children get started to formal schooling since these problems become more salient and attention-grabbing within school environment (Bayer et al., 2006; Bradley & Corwyn, 2008). However, identifying potential predictors/risk factors of behavior problems prior to school entry which might be internal or external to the child makes prevention and early intervention more likely (Conroy & Brown, 2004; Dunlap et al., 2006; Williams et al., 2009). Furthermore, focusing on preschool and early school years has been suggested to be particularly important in the sense that at around these ages individual differences in children's adjustment patterns are well-established and they could better predict later functioning (Mesman, Bongers, & Koot, 2001). Presumably, detecting these symptoms during preschool years has considerable implications for both theory and prevention (Olson, Sameroff, Lunkenheimer, & Kerr, 2009). Thus, this study primarily aimed to examine the longitudinal relations of externalizing and internalizing behavior problems with parent’s child-rearing practices and children’s temperament in Turkish young children.

At this point, it is crucial to introduce theories regarding behavior problems which have guided research and preventive attempts for several decades (Campbell et al., 2000). Thus, before going into literature review through which we introduced and examined the

relationship between behavior problems and etiological factors predicting these problems in early childhood, the historical overview to the theoretical formulations of behavior problems will be presented.

1.1. Theoretical Formulations of Behavior Problems

1.1.1. Historical overview to theoretical formulations

To date, several theories regarding young children's normative and non-normative development have been influential in the area of developmental and clinical psychology. Not surprisingly, manifestation of behavior problems during early childhood has aroused as much research interest as the display of normative behaviors during this age period (Campbell et al., 2000; Zahn-Waxler et al., 2000). Consequently, researchers/theorists released a variety of theoretical formulations to thoroughly understand factors anticipating behavior problems from early childhood onward. Accumulation of knowledge came out of these formulations has accompanied changes in the direction of research in the field of childhood behavior problems. As a result of these changes, study of maladjustment during early years of childhood has adopted a more inclusive understanding acclaiming that development, both normal and abnormal, reflects a reciprocal, bidirectional, and transactional relationship between children and environmental factors (Campbell et al., 2000; Neece, Green, & Baker, 2012; Wachs & Kohnstamm, 2001; Rubin & Mills, 1991). Indeed, transactional models of child development consider environmental factors (e.g., neighborhood, poverty and school environment) as they influence child development through their impact on parent-child exchanges (Gilliom & Shaw, 2004). In line with this consideration, child dispositional characteristics and parenting practices have been started to be studied extensively (Aunola & Nurmi, 2005; Wachs & Kohnstamm, 2001). In the next section, to have a complete understanding toward how different models have been evolved and how they have been

replaced by newer and more comprehensive models of child adjustment, a brief review considering major theories will be presented.

1.1.2. Psychodynamic Models

Psychodynamic models assume that relatively simple and causal mechanisms are responsible for the emergence of psychopathology in children (Bates, Bayles, Bennet, Ridge, & Brown, 1991). In light of this assumption, theories stemming from psychodynamic models attribute child psychopathology to the failure to satisfy inborn drives, intrapsychic conflicts and defenses, and fixation to and regression toward an earlier psychosexual stage (Hayden & Mash, 2014). Specifically, Zahn-Waxler et al. (2000) cited Freud's (1936) earlier work suggesting that anxiety occurs as a consequence of unconscious infantile libidinal or aggressive desires towards parental figures (p.445). As it is also seen in this explanation, psychodynamic models of child psychopathology attach a great emphasis on earlier experiences children have with close others and early mental representations, thus, they precede following relational models explaining child psychopathology (Reebye, 2005; Zahn-Waxler et al., 2000).

Although psychoanalytic formulations to child psychopathology have lost favor in time, they have led the drive for neo-psychodynamic theories and theories attributing a major role to parent-child relationship in explaining child psychopathology such as attachment theory (Cassidy & Shaver, 2008; Hayden & Mash, 2014; Zahn-Waxler et al., 2000).

1.1.3. Attachment Theory

With the advent of the attachment theory, attention has shifted from traditional psychoanalytic theories assigning a significant role to intrapsychic defenses towards attachment theory emphasizing interpersonal relationships (Bretherton, 1995). Attachment has been categorized under stress-reducing behavioral systems where the child attempts to

maintain balance between stress-reducing behaviors and exploratory, information seeking behaviors. The balance between these behaviors and reliance to one self have been achieved as long as an attachment figure provides a safe heaven and a secure base for exploration (Bretherton, 1995; Colonnesi et al., 2011; Hayden, & Mash, 2014).

On the contrary, caregiver's failure to provide a safe heaven and secure base for exploration and to respond the child needs appropriately have consistently been documented to be associated with insecure attachment organizations (e.g., insecure-avoidant and insecure-ambivalent) and child psychopathology (Colonnesi et al., 2011). Supportably, insecure attachment has been found to be associated with the development of anxiety in children (Esbjørn et al., 2013). Colonnesi et al.'s (2011) meta-analytical work reviewing 46 studies have reported that anxious-ambivalent attachment which is characterized by high levels of distress during separation, seeking contact upon reunion, experiencing distress, and not being able to be comforted by the caregiver after reunion was associated with anxiety disorders in children and adolescents. Another meta-analysis by Groh, Roisman, van IJzendoorn, Bakermans-Kranenburg, and Fearon (2012) have documented congruent findings for internalizing problems suggesting that attachment avoidance which describes attachment behavior characterized by ignorance and avoidance of the caregiver during reunion was significantly related with children’s internalizing symptoms. Groh et al. (2012) have also incorporated studies on attachment quality and externalizing problems in their meta-analysis and reported that insecurity and disorganization which marked by frightening responses and lack of organized strategy to maintain proximity with the caregiver (Colonnesi et al., 2011) have been linked to externalizing problems more so than internalizing problems.

Sroufe (1985), however, has argued against the idea that attachment relationship is the sole predictor of child psychopathology and defend paying equal importance to children's

temperament and the interaction between so called "difficult temperament" and parental response in explaining the variance in attachment quality and the link between attachment and child psychopathology. In light of this argument, the link between early attachment relationship and later psychopathology should be examined with caution, since there doesn't exist one particular type of attachment which is directly associated with child psychopathology. Rather, as emphasized earlier, developmental pathways to psychopathology was shaped by more than one factor, by the child's environmental experiences, biological predispositions, and learning, to name a few (Sroufe, 1985).

1.1.4. Behavioral Theories

Traditional behavioral theories assumed that individual's responses to environmental stimuli do not arise from inner forces and motivations as psychodynamic models assert, but elicited through external forces. In that sense, classical forms of behaviorism conceive individuals as passive recipients of what they are presented, thus, all kind of responses could be easily elicited, maintained, or eliminated by controlling the external stimuli (Bandura, 1971).

Aggression, one of the major concepts in psychodynamic theories, has known to be instinctual in nature and inherent in individuals until a team of psychologists including Dollard, Doob, Miller, Mowrer, and Sears (1939), at Yale University has assigned an important role to learning theory. Although Yale's group -most of them were behaviorists- put the learning theory of classical conditioning at the center while explaining aggressive behavior, their premises have been clearly influenced by biological mechanisms put forward by Freud. For instance, frustration-aggression hypothesis which has been developed by Yale researchers used Freudian concepts of pleasure seeking and pain avoidance as basic goals of humans and asserted that when these goals are thwarted (e.g., when children experience

parental rejection or lack of nutrition), individuals feel frustration and frustration usually elicits aggressive responses (Eron, 1987, 1994).

1.1.5. Social Learning Theory

Bandura (1971) has asserted that humans are neither driven by their inner forces, nor by environmental stimuli, but they are actively involved in the learning process through direct experience or observation of others' behavior and its consequences. In this sense, social learning theory puts an emphasis on individual's higher cognitive capabilities such that mental representations of what they have observed will guide them for their future behavior.

Both behavioral and affective responses have been acquired and distinguished through observation of how others respond to painful or pleasurable experiences (Bandura, 1971). For instance, children can learn anxiety through observing and modeling the parent's anxious behavior, or by listening their parent's painful and frightening experiences with life (Zahn-Waxler et al., 2000). Furthermore, parental child-rearing practices including punishment or harsh discipline contribute to child's reproduction of aggressive behavior through modeling (Ticholovsky, 2011).

1.1.6. Information-processing and Cognitive Learning Theories

Information processing theories which have been developed by Dodge (1986) and reformulated by Crick and Dodge (1994) have attributed maladjustment to the failure in some steps of mental processing in response to a social stimulus. Proponents of information-processing theories have maintained that each individual has a storage where she/he records all the social information. This storage is composed of memory of past events, social schemas, acquired social rules, and information about socially appropriate-inappropriate behaviors. When this storage includes mostly distressing memories such as harsh discipline

of parents, children are more vulnerable to have biased or distorted processing of social information (Dodge, 2006).

Processing social information in a distorted or biased way has been evident in most forms of child psychopathology. For example, socially aggressive children have been found to be more likely to have attribution biases such as hostile attribution to a neutral behavior (Dodge & Pettit, 2003). Similar patterns have also been identified in young children who are withdrawn. For instance, children with anxiety disorders tend to have biased attributions to threatening stimuli such as angry faces (Waters, Henry, Mogg, Bradley, & Pine, 2010) and those with depression are more likely to hold negative cognitions and less likely to recall positive information (Lakdawalla, Hankin, & Mermelstein, 2007).

1.1.7. Biological Models.

Biological models of child psychopathology assume that children are predisposed to exhibit certain forms of behavior problems. Proponents of biological explanations of behavior problems in childhood emphasize the role of genetic and temperamental influences (Zahn-Waxler et al., 2000).

Genetic influences. Twin and adoption studies has led the line of research focusing on genetic influences in explaining childhood behavior problems. According to this line of research, heritable factors could at least in part account for the emergence of externalizing as well as internalizing problems in childhood (Lewis & Plomin, 2015). Smith and Farrington (2004), for instance, reported that antisocial behaviors were transferred across 3 generations such that G1 parent's antisocial behaviors predict G2 children's conduct problems which were measured at age 8-10. Within G2, conduct problems foresee antisocial behaviors which, in turn, predict G3 children's (aged 3-15) conduct problems. Zahn-Waxler et al. (2000) also suggested that familial risk for anxiety disorders were run within families.

Temperamental influences. Certain temperamental traits may also be in part responsible for the development of behavior problems such as anxiety (Nigg, 2006; Zahn-Waxler et al, 2000). Negative affectivity, for instance, has been reported to be associated with both externalizing and internalizing problems (Eisenberg et al., 2005a; Rothbart & Bates, 2006) although different types of negative emotions play role in the development of either of the behavior problems (Karreman, de Haas, van Juijil, van Akken, & Deković, 2010). Moreover, while high impulsivity was related to externalizing problems, high reactivity to novelty was predictive of internalizing problems, specifically depression (Fox, Henderson, Rubin, Calkins, & Schmidt, 2001).

1.1.8. Transactional Models

As a result of the earlier theoretical influences, contemporary researchers become more inclined to study behavior problems in young children as an outcome anticipated by transactional processes, rather than linear processes (Campbell et al., 2000; Wachs & Kohnstamm, 2001; Sameroff, 2009). This inclination came out of the need to reveal the influence of parent-child relationship and other environmental factors on explaining how children regulate their temperamental characteristics such as negative emotionality. Emergence of attachment theory also signaled the need to thoroughly understand early parent-child relationship predicting later adjustment outcomes (Ainsworth, 1985; Rubin & Millls, 1991). Thus, parenting variables such as parental sensitivity and responsiveness, besides temperamental characteristics of children have gained an importance in this line of research (Campbell et al., 2000).

Relatively recently, social learning theory also put an additional emphasis on parent-child interaction and focus more on individual differences in parenting which forms a significant base for the nature of the relationship between the parent and child (Campbell et

al., 2000). All these recent formulations gave a way to more complex conceptualizations emphasizing interplay between multiple ecological influences accounting for the individual differences in the way young children adjust to their social world (Cicchetti & Lynch, 1993; Wachs & Kohnstamm, 2001; Rubin & Mills, 1991; Sameroff, 2009). In the present study, both parenting behaviors and child's own characteristics will be accounted for and the main purpose was to explore the mechanism through which they are related to each other and the outcome variables, namely externalizing and internalizing behavior problems. Consequently, taking both parenting and child characteristics into account while examining child behavior problems allowed us to reach more inclusive conclusions about the developmental antecedents (e.g., risk and protective factors) of these problems in early childhood. Thus, throughout the next section, previous literature on the relations between externalizing and internalizing behavior problems and those between behavior problems and their developmental antecedents (parental child-rearing practices and child temperament) were reviewed.

1.2. Literature Review

1.2.1. Relationship between Externalizing and Internalizing Problems

Even though externalizing and internalizing behavior problems refer to different processes experienced by children, a great deal of research has reported that they are closely associated with each other, tend to co-occur and co-develop in early childhood (Bornstein et al., 2010; Gilliom & Shaw, 2004; Lee & Bukowski, 2012; Lilienfeld, 2003; Stone et al., 2015). Despite a bulk of evidence supporting co-occurrence of behavior problems, growing body of research has studied externalizing and internalizing behavior problems independently and co-occurence of these problems has been widely neglected (Gilliom & Shaw, 2004; Oland & Shaw, 2005). However, relatively recently, studies examining mechanisms

underlying co-occurrence of these problems and why some children display one of these problems while both of these problems co-occurs in other children have been increasing in number (Oland & Shaw, 2005).

Lee and Bukowski (2012) proposed that at least three accounts explaining co-development of externalizing and internalizing problems can be put forward: (1) externalizing problems predicting internalizing problems (failure model), (2) internalizing problems predicting externalizing problems, and (3) both types of problems reinforcing each other and therefore, increasing one another.

Consistent with the first account, Patterson and Capaldi (1990) have suggested that children with conduct problems experience difficulty in social situations which, in turn, increases the risk for developing depression and anxiety. Contrary to the first account, second account has asserted that internalizing symptoms precede acting out behaviors such that depression may impair one's ability to focus on the adverse consequences of his/her actions, thus, leads to acting out behaviors (Capaldi, 1991). Finally, proponents of the third account have proposed that changes in one disorder was linked to the changes in another disorder. Supportably, Gilliom and Shaw (2004) have reported that there exists a modest positive correlation between changes in externalizing and internalizing problems in a sample of boys followed from 2 to 6 years of age.

Apart from the aforementioned three accounts, there is an empirical support for common vulnerability model suggesting that both type of problems share common etiological factors. Gilliom and Shaw (2004) have asserted that certain parenting variables (e.g., lack of emotional support) and temperamental characteristics (e.g., negative emotionality) are influential in both externalizing and internalizing problems. In this sense, discovering these

etiological factors and the way they interact with each other during one's lifetime has a vital importance for prevention of externalizing and internalizing behavior problems.

Given that all these accounts explain the relations between externalizing and internalizing problems by examining how they affect each other and affected by other etiological factors throughout a course of development, developmental psychopathology account was adopted in the current study. That's why, throughout the following part, basic principles of developmental psychopathology account were addressed.

1.2.2. Developmental Approach to Child Maladjustment

Prior to the advent of developmental psychopathology perspective, childhood and adolescent behavior problems have been examined on the basis of adult models of psychopathology (Hayden & Mash, 2014; Zahn-Waxler et al., 2000). However, this approach has brought about a very important problem in that manifestation and symptoms of behavior problems in childhood and adulthood might be different. More precisely, etiological factors (e.g., risk and protective factors) and the symptoms of behavior problems may undergo changes and may have varied presentations in different phases of development (Hayden & Mash, 2014; Murris & Ollendick, 2005). Supposedly, applying adult models of psychopathology to children and adolescents impedes the true understanding of the developmental precursors of externalizing and internalizing problems. Relatedly, it hinders the development of exploratory models and treatment modalities based on the manifestation of behavior problems in children and adolescents (Zahn-Waxler et al, 2000). It is also important to keep in mind that even during childhood, symptoms of a disturbance have differed. For instance, while stranger and separation anxiety have been considered as normative during infancy or toddlerhood, continuity of such problems later in childhood raises concerns (Campbell, 1998). To counter these problems, developmental

psychopathology perspective which adopts a life span approach to child psychopathology utilizes age-appropriate assessment tools and favors multiple time point assessment, thus; longitudinal investigations (Murris & Ollendick, 2005).

Moreover, developmental psychopathology perspective adopts dimensional models of adjustment and maladjustment and assumes that both normal and abnormal exist on a continuum. Thus, it allows researchers, developmental, and clinical psychologists to notice normal, subclinical, and clinical forms of deviations. In this sense, developmental approach to psychopathology ensures flexibility in diagnosis which, in turn, facilitates the development of various methods of prevention, intervention, and treatment if necessary (Hayden &Mash, 2014; Zahn-Waxler et al., 2000). Lastly, developmental psychopathology perspective favors the influence of multiple, interacting causal factors in predicting child psychopathology rather than attributing the major role to a single causal factor (Murris & Ollendick, 2005).

1.2.3 Two Major Antecedents of Behavior Problems in Early Childhood: Maternal Child-Rearing Practices and Child's Temperamental Characteristics

In the literature, the most emphasized etiological factors that have received a considerable attention from a great deal of researchers were parenting and temperament (Gilliom & Shaw, 2004; Putnam, Sanson, & Rothbart, 2002). These two important factors were shown to have unique impacts on children's adjustment (Gilliom & Shaw, 2004; Olson et al., 2011; Kiff, Lengua, & Zalewski, 2011), but at the same time, they act in tandem to predict the child's adjustment outcomes (Chang et al., 2011; Karreman et al., 2010; Kiff et al., 2011; Mesman et al., 2009; Morris et al., 2002).

Parenting refers to the process in which parents raise and socialize their children beginning from the birth into the adulthood. Parents bear an important responsibility in children's social, intellectual, and emotional adjustment (Maccoby, 2000), and their role is

most pronounced during early childhood when children need their parents most (Power, 2004). At the same time, parents have been considered as important agents playing a vital role in children's adjustment as well as maladjustment outcomes. A number of studies have shown that parenting practices are closely related to children's behavior problems (Aunola & Nurmi, 2005; Morris et al., 2002; Ticholovsky, 2011). Thus, parents as key sources of influence on child adjustment have been taken into consideration by a large number of studies (Chang et al., 2011; Hastings, McShane, Parker, & Ladha, 2007; Karreman et al., 2010; Kiff et al., 2011; Morris et al., 2002; Ticholovsky, 2011). To date, various parenting features predicting adjustment outcomes such as parental harsh or permissive discipline and parental sensitivity or intrusiveness have been proposed (Carlo, McGinley, Hayes, Batenhorst, & Wilkinson, 2007; Eisenberg, Taylor, Widaman, & Spinrad, 2015; Kircaali-Iftar, 2004; Ticholovsky, 2011). Of all these variables, parental child-rearing practices -characterizing specific parenting behaviors practiced while taking care of and socializing children (Kircaali-Iftar, 2004)- have often been studied as factors associated with children's behavior problems (Bornstein, Tamis-Lemonda, Hahn, & Haynes, 2008; Kerr, Lopez, Olson, & Sameroff, 2004). Child rearing consists of parenting practices including parental warmth, inductive reasoning, physical punishment, and obedience demanding (Paterson & Sanson, 1999).

In fact, parenting practices have usually been grouped under two basic dimensions, parenting as demandingness/control including behavioral and psychological control; and parenting as responsiveness including emotional responsivity, acceptance, affection, and attachment (Barber, 1996; Darling & Steinberg, 1993; Maccoby & Martin, 1983). Behavioral control, in itself, refers to parental attempts to restrict or manage children's behaviors through the use of monitoring, or by conveying societal rules and standards for appropriate behaviors, rewarding and reinforcing children for attaining such societal standards, explaining them the

consequences of their behaviors and modeling them these desirable behaviors in a consistent manner (Kiff et al., 2011). Psychological control, on the other hand, includes coercive strategies such as guilt induction, love withdrawal, restrictive communication, overcontrol, invalidation and constraint of feelings, and intrusive parenting aiming to manipulate children's behavior (Aunola & Nurmi, 2005; Barber, 1996; Kiff et al., 2011; Shek, 2007). Affective quality of parenting refers to somewhat different processes usually described as connectedness between the parent and child and parent's tendency to show warmth/acceptance (Aunola & Nurmi, 2005).

Temperament, another important construct which has also been documented to predict individual differences in a wide range of adjustment outcomes (Kiff et al., 2011), was defined differently by a number of researchers (Rothbart & Bates, 1998; Thomas & Chess, 1977). However, among various definitions, the most prevailing one defines temperament as constitutionally based individual differences in reactivity and self regulation as marked in the emotional, attentional and motor domains (Rothbart & Bates, 2006). The term "constitutionally" was used to emphasize biological origin of temperament which is influenced by heredity, environment, and experience over time (Rothbart & Bates, 2006). Reactivity and self regulation are two characteristics which were emphasized by most of the researchers as important markers of temperament and they both characterize the way individuals approach and react the situations they faced with (Rothbart, Ellis, & Posner, 2004). Specifically, reactivity refers to individual's emotional and physiological responsiveness to both internal and external changes in the environment, and it is evident as early as the first year of life. Mostly referred indicators of reactivity are negative affectivity/emotionality including frustration or anger, fear (inhibition and withdrawal),

sadness; positive affectivity including high activity level, approach, and high intensity pleasure (Rothbart & Bates, 2006).

Self-regulation, on the other hand, functions as a modulator of reactivity by means of executive control of attention and behavior, and by facilitating or inhibiting a particular physiological, emotional, or motor response. Self-regulation was commonly assessed on the basis of attention focus and shifting, and inhibitory control, therefore, it is used interchangeably with the term "effortful control" (Rothbart, Ahadi, Hershey, & Fisher, 2001). Unlike reactivity, self-regulation which develops together with executive and attentional control follows a delayed trajectory, and emerges towards the end of the first year of life. To note, examining self-regulation aspect of temperament during preschool period is crucial in the sense that transition from infancy to preschool age is characterized by major changes in the regulatory aspect of temperament which is marked by a shift from an orienting-based regulatory system to executive-based effortful control (Rothbart, Sheese, Rueda, & Posner, 2011).

Sanson, Hemphill, and Smart (2004) have described three broad dimensions of temperament; flexibility or reactivity, persistence, and sociability in the Australian Temperament Project (ATP) which is a large scale study of Australian children. Rhythmicity has also been identified as the fourth dimension of temperament, however, it did not seem to be closely associated with child's social behavior. While flexibility or reactivity refers to emotional volatility or one's ability to adjust to new experiences, persistence characterizes one's capability to remain concentrated on an activity or task for a certain period of time, and sociability taps into the tendency to approach vs withdrawal from new situations and people (Prior, Sanson, Smart, & Oberklaid, 2000). Notably, literature abounds with the studies

indicating the associations between these three temperament dimensions and children's social and emotional development.

As underlined previously, parenting and temperament were two etiological factors which have pronounced impacts on the wide-range of adjustment outcomes (Chang et al., 2011; Gilliom & Shaw, 2004; Morris et al., 2011). At this point, even though the current study aimed to examine the joint effects of parental child rearing behaviors and temperament on adjustment problems (Kiff et al., 2011), it is essential to review how each of these factors are related to adjustment outcomes by itself. In this sense, in the following sections, first, literature on the relations between parental child rearing and behavior problems, and temperament and behavior problems and then, the nature of the relationship between parenting and temperament in predicting behavior problems would be examined.

1.2.4. Parental child rearing and its Link with Externalizing and Internalizing Problems

As a far-reaching construct which has considerable influences on children's adjustment outcomes, parenting has been assessed through several ways. Baumrind (1966) has formulated three parenting styles which were authoritative, authoritarian, and permissive based upon how well parents balance between two dimensions: control and warmth. Parental child rearing practices including parental warmth, inductive reasoning, punishment, and obedience demanding were formulated as another way of describing parenting, and they reflect culturally transmitted practices of parenting (Kagitcibasi, 2007; Stewart & Bond, 2002).

As underlined previously, specific parenting practices have always been evaluated on two basic dimensions: responsiveness and demandingness/control (Barber, 1996; Darling & Steinberg, 1993; Maccoby & Martin, 1983). Responsiveness consists of affective compenent of parenting practices and is closely related with parenting behaviors marked by warmth,

acceptance, sensitivity, positive affect and expressivity, and synchronization between the parent and child (Maccoby & Martin, 1983). The positive link between responsiveness and adaptive child outcomes (e.g.; adaptive self-regulation, internalization, and peer acceptance has been established by a substantial body of studies (Davidov & Grusec, 2006; Denham et al., 2000; Karreman, Tuijl, van Akken, & Deković, 2006).

On the other hand, child rearing practices based on parental control have been documented to be related with varied developmental outcomes (Karreman et al., 2006). This variation in child outcomes may be explained by distinction between different types of control such as positive (e.g., behavioral control) and negative control (e.g., power assertive control and psychological control). Positive control refers to parental behavior which aims to teach, encourage and guide the child's behavior (Karreman et al., 2006). Negative control which was also used interchangeably with power assertive control, on the other hand, was characterized by parental behaviors including anger, negative criticism, harshness, intrusive control marked particularly by physical strength over children to ensure compliance (Towe-Goodman & Teti, 2008; Karreman et al., 2006). In particular, power assertive control of parents such as the use of physical punishment interferes with children's ability to adaptively regulate their emotional states and internalizion of parental messages (Karreman et al., 2006), thus, have often reported to be related with children's behavior problems (Gershoff, 2002; Mulvaney & Mebert, 2007).

A growing body of research supported the assumption that various parental child-rearing practices have been associated with both externalizing and internalizing problems in early childhood (Aunola & Nurmi, 2005; Cunningham, Kliewer, & Gardner, 2009; Denham et al., 2000; Power, 2004). Cunningham et al. (2009) suggested that children whose parents offer a warm and supportive environment will be better able to develop adaptive self-

regulatory skills and their emotional and behavioral competence are more likely to be fostered. Children who receive a parental treatment which is characterized by warmth/acceptance are able to attend and internalize their parent's messages which may foster their self-regulation and help them cope with a variety of challenging situations (Cunningham et al., 2009). In support of this, Yavuz, Selçuk, and Çorapçı (2016) have reported that high levels of maternal warmth related to lower levels of internalizing problems in preschool-aged children. Consequently, parental warmth, responsiveness, supportive presence, and use of positive discipline techniques have been linked to positive behavioral adjustment including emphatic responding and peer acceptance (Davidov & Grusec, 2006; Denham et al., 2000).

Oppositely, family environments where children are exposed to negative control, criticism and rejection were associated with children's and adolescent's maladjustment which is marked by both externalizing and internalizing behavior problems (Cummingham et al., 2009; Demirkaya & Abalı, 2013). In a similar vein, Mulvaney and Mebert (2007) emphasized that the negative effects of corporal punishment are markedly higher during early childhood and concluded that it uniquely predicts children's negative behavioral adjustment both at age 3 and at first grade. Consequently, corporal punishment has been found to be linked with elevated levels of disruptive behaviors (especially aggression) by directly modelling aggression or by reinforcing hostile attributions which promote the coercive cycle of relationship between parents and children (Gershoff, 2002). This pattern of relationship has also been documented in Turkish preschoolers. Demirkaya and Abalı (2013) revealed that harsh discipline of mothers including physical punishment was significantly correlated with Turkish preschooler's externalizing symptoms.

Although less research examining the relationship between parenting and internalizing problems in early childhood years has been carried out, theories regarding

internalizing problems pointed at parental psychological control and parental rejection (or lack of warmth) as potential antecedents of social withdrawal, anxiety, and depression during childhood (Bayer et al., 2006; McLeod, Weisz, & Wood, 2007a; McLeod, Weisz, & Wood, 2007b; Rubin & Mills, 1991). Bayer et al. (2006) have documented that over-involved/protective parenting, and low warm-engaged parenting predicted internalizing problems of preschool children. More specifically, McLeod et al. (2007a), McLeod et al. (2007b), and Wei and Kendal (2014) reported that while maternal overcontrol was more strongly associated with childhood anxiety, maternal acceptance/rejection plays a particularly significant role on childhood depression. Besides maternal psychological control and rejection, use of corporal punishment have also found to be related to school-aged children's anxious and depressive symptoms (Gershoff, 2002).

Researchers have come up with several mechanisms underlying the relations between parenting practices and internalizing problems in children. According to Bayer et al. (2006) over involved/protective parents do not allow their children to face with natural life challenges, thus, deprive children of the opportunities to improve their management skills in the presence a challenge. High levels of parental control, intrusiveness, punishment as well as obedience demanding by parents without inductive reasoning transmit the message that the world is threatening and hostile, thus, damage children's autonomy and self competence, which, in turn, making them vulnerable to negative arousal, feelings of helplessness, sense of lack of control, and avoidant behaviors (Bayer et al., 2006; Murray, Creswell, & Cooper, 2009). Moreover, parental rejection and criticism lead to childhood depression by undermining children’s self-esteem, enhancing sense of helplessness, and triggering negative self perceptions (McLeod et al., 2007a).

Studies reviewed thus far were predominantly represent how the relationship between parental child rearing practices and behavior problems in Western samples of young children. However, parenting has long been considered and studied as encompassing culture bound behaviors, practices, values, and attitudes of child rearing (Darling & Stienberg, 1993). Regarding cultural specificity of parenting practices, Sumer, Gundogdu-Akturk, and Helvacı (2010) has pointed out that the effect of parenting practices differs on the basis of cultural context, and parents' socialization goals in a particular culture. Moreover, it has been advocated that cultural values, norms, and teachings are associated with how parents raise their children, what parenting style they adopt and how they evaluate and react to their children's behavior (Rothbaum & Trommsdorf, 2007; Yagmurlu, Cıtlak, Dost, & Leyendecker, 2009). Thus, the observed pattern of parent-child interaction in Western cultures may not be a good representative of the pattern in non-Western populations.

Similar child-rearing practices may have different meanings, elicit different child reactions and end in varied developmental outcomes in different cultural contexts (Kagitcibasi, 2007, Rohtbaum & Trommsdorf, 2007, Yagmurlu & Sanson, 2009). For example, while greater body contact (e.g., carrying and co-sleeping) was considered as a sign of warmth in Non-Western, agricultural communities, it was considered as overprotectiveness in many Western cultures (Rohtbaum & Trommsdorf, 2007). For this reason, it is essential to examine the role of parent's child rearing behaviors on children's behavioral outcomes in consideration with cultural context (Yagmurlu & Sanson, 2009). For this particular study, parenting practices which are related to Turkish cultural values, and norms will be considered, and studies providing knowledge on Turkish parenting will be briefly presented.

Turkish parents have been shown to be mostly authoritarian (Taylor & Oskay, 1995); and punishment-oriented control and obedience-demanding are common child-rearing

behaviors practiced by Turkish parents (Yagmurlu & Sanson, 2009). However, being classified as authoritarian do not necessarily reflect lack of warmth on the side of Turkish parents. Inductive reasoning, on the other hand, was a rarely used rearing practice by traditional Turkish parents (Yagmurlu & Sanson, 2009). Furthermore, traditional Turkish families value respect for parental authority, and they rarely encourage children's autonomy. However, it is important to keep in mind that values and norms of Turkish families have been changing recently. In this regard, it is important to emphasize that parental control, punishment, and obedience demanding of Turkish parents occur in a family environment characterized by mutual emotional attachment (Sunar & Fişek, 2005). In fact, contrary to what past research has suggested, obedience-demanding behaviors of Turkish mothers do not negatively impact child development, on the contrary, they were found to facilitate the development of prosocial behaviors (Yagmurlu & Sanson, 2009). In the current study, both maternal warmth and punishment (power assertive control) were accounted with regard to their relations with Turkish preschool-aged children's temperamental characteristics and behavior problems which further contributed to findings based on cross-cultural comparisons of parenting practices.

1.2.5. Temperament and its Link with Externalizing and Internalizing Problems

Temperament which characterizes individual's differential responsiveness to a variety of experiences has been theorized to be an important marker of children's social, and emotional development and behavior problems (Van der Akker, Deković, Prinzie, & Asscher, 2010; Karreman et al., 2010). Nigg (2006) put forward two alternative models explaining the association between temperament and behavior problems; the spectrum model, and the vulnerability/liability model. The spectrum model assumes that temperamental characteristics and problem behaviors exist on continuum where problem behaviors characterize extreme

forms of normal temperamental characteristics. The vulnerability model, on the other hand, proposes that children with particular types of temperamental characteristics are liable to experience problem behaviors (Nigg, 2006). Nigg (2006) also noted that while the spectrum model is valid in some instances of problem behaviors, the vulnerability model is applied to the most of the cases, and it was also adopted as a framework in explaining the link between temperament, parenting, and behavior problems in the current study.

Several temperamental traits have been proposed as developmental correlates of behavior problems across childhood. Among these traits, negative and positive affectivity/surgency, and effortful control have been consistently documented to be related with externalizing and internalizing problems during early childhood (Gartstein, Putnam, & Rothbart, 2012). As previously noted, negative affectivity and positive affectivity/surgency have usually been considered as two basic dimensions of temperamental reactivity (Rothbart & Bates, 2006). In particular, negative affectivity describing children's predisposition toward negative affective states (Rothbart et al., 2001) and effortful control characterizing children's ability to focus and shift attention, and to inhibit or facilitate a particular response as the situation requires (Gartstein et al., 2012) have studied extensively with regard to their relations with children's behavior problems (Eisenberg et al., 2005a; Rothbart & Bates, 2006). Although positive emotionality and their relations with child outcomes have been relatively understudied in the past, recently, there has been an exponential increase in temperamental studies focusing on this particular temperamental characteristic as a core trait (Kochanska, Aksan, Penney & Doobay, 2007; Putnam, 2012). In line with the increasing interest in positive affectivity; it has been recognized that positive affectivity is a conceptually heterogeneous trait composed of two basic dimensions; approach based positivity including rapid approach extraversion, surgency, exuberance, enthusiasm, energy,

and agency and non-approach positivity characterizing positive affect in interpersonal relationships including agreeableness, communication, affiliation, and sociability.

These dimensions of positive affectivity have shown to be related differently to child outcomes particularly self-regulation abilities, effortful control, and behavior problems (Kochanska et al., 2007; Putnam, 2012). Accordingly, approach based positivity which is marked by approach tendencies, reward sensitivity, and exuberance in highly arousing situations would predict lower levels of inhibition and effortful control, and higher levels of impulsivity, and higher likelihood of experiencing externalizing problems (anger, aggression, and frustration) particularly when reward-salient goals are blocked (Dennis, 2006; Putnam, 2012). Non-approach positivity, on the other hand, characterizes one's agreeableness and affiliatiation in low intensity pleasure situations documented to be linked with adaptive regulatory strategies, peer acceptance, higher levels of effortful control, and lower levels of internalizing and externalizing problem behaviors (Kochanska et al., 2007; Putnam, 2012).

In the literature, there exist contradictory findings regarding the link between temperamental characteristics and types of behavior problems. Importantly, while some temperamental traits were found to precede both externalizing and internalizing behavior problems, some others appear to play role in the emergence of either externalizing or internalizing behaviors. For instance, Rothbart and Bates (2006) found out that negative affectivity and low effortful control were associated with both externalizing and internalizing behavior problems (Rothbart & Bates, 2006). However, in another study, while high negative emotionality was observed to be related to both externalizing and internalizing problems, low effortful control was only related to externalizing symptoms (Eisenberg et al., 2005a). The same study also reported that externalizers were high in impulsivity whereas internalizers were low in this particular temperament dimension. Similarly, Bates, Pettit, Dodge, and

Ridge (1998) indicated that impulsivity/unmanageability was typically linked with externalizing behavior problems more so than internalizing behavior problems. It was also shown that temperamental irritability predicts both internalizing and externalizing problems which contradicts with what most of the studies have reported: Irritability was related to externalizing but not internalizing problems in young children (Eisenberg et al., 2005a).

Although negative emotionality has predictive utility for both internalizing and externalizing problems (Eisenberg et al., 2005a; Rothbart & Bates, 2006) specific types of negative emotions contributed differently to the emergence of internalizing and externalizing problems (Eisenberg et al., 2005a; Karreman et al., 2010). While sadness/depression, fear, and anxiety have often been linked to internalizing symptoms, externalizing problems have mostly been associated with irritability and anger (Eisenberg et al., 2005a). Different forms of reactivity were also differentially related to internalizing and externalizing problems such that while reactivity to novelty contributed to internalizing problems (Fox et al., 2001), reactivity to frustration has often been associated with externalizing problems during early childhood (Hubbard et al., 2002).

Positive affectivity, on the other hand, has been reported to be related to both positive and negative child outcomes. It may function as a protective factor for internalizing difficulties such as depression, and promotes children's interpersonal skills, but at the same time, strong desire for rewards may hinder the development of regulatory capacities, and may result in externalizing difficulties such as aggression and frustration (Kochanska et al., 2007; Putnam, 2012). The reason why positive affectivity predicts differential child outcomes can be explained by distinction between approach-based and non-approach positivity which was underlined previously. Higher levels of surgency which was marked by laughter, smiling, rapid approach to new stimuli, activity, and appreciation of high intensity stimulation has

been found to be related with externalizing problems, while lower levels of surgency was related to higher levels of internalizing problems in preschool children (Gartstein et al., 2012). With regard to these findings, Gartstein et al. (2012) have maintained that strong approach, activity level, and impulsivity aspects of surgency might be related to externalizing problem behaviors whereas sociability, smiling and laughter aspects of surgency may be related internalizing behavior problems. Moreover, Yavuz et al. (2016) have advocated that higher levels of exuberance in non-novel situations predicted lower levels of internalizing problems in Turkish preschoolers.

It is also noteworthy that different temperamental characteristics were found to jointly predict adjustment problems (Gartstein et al., 2012). Moreover, Rothbart and Bates (2006) put forward the idea that regulatory aspects of temperament would moderate more reactive aspects of temperament such that higher effortful control would weaken the link between negative emotionality and adjustment problems, and would direct children to give more adaptive emotional responses toward the stimuli that would normally elicit excessive emotional reactions. Furthermore, in a study investigating the etiology of behavior problems seen in preschool children, higher levels of surgency interacting with negative emotionality was found to be associated with greater levels of preschool internalizing behavior problems than lower levels of surgency (Gartstein et al., 2012).

As reviewed above, previous research indicated that both parental child rearing and child temperament have pronounced influences on children's behavior problems. However, neither parenting nor child temperament have its influence on child development, in isolation, both of these factors influence and are influenced by one another (Chang et al., 2011; Kiff et al., 2011; Kochanska & Kim, 2013). In light of this, examining the dyadic relationship between parenting, and temperament appears to be essential to more truly understand the

complex interplay between parenting, temperament, and behavior problems in early childhood (Kiff et al., 2011), thus, in the next section, studies pertaining to the link between parenting, temperament, and behavior problems will be reviewed.

1.2.6. The Relationship among Child Rearing, Temperament, and Externalizing and Internalizing Problems

There exist different models considering how parenting relates to temperament, and how they, together, associated with adjustment outcomes (Bates & Pettit, 2015; Campbell et al., 2000; Chang et al., 2011; Karreman et al., 2010; Kiff et al., 2011). Firstly, bidirectional or transactional models of parenting and temperament assume that parenting practices and child characteristics appear to mutually influence each other throughout development. More precisely, children interact with their parents in a way compatible with their own characteristics, which in turn, influences the way parents respond to their children. Thus, the relationship between parents and children is marked by reciprocity where children influence and influenced by how their parents treat them (Kiff et al., 2011; Rubin & Mills, 1991; Wachs & Kohnstamm, 2001).

There have been a variety of studies supporting transactional models of parenting and temperament (Eisenberg et al., 2015; Scaramella & Leve, 2004). Lengua and Kovacs (2005), for instance, examined the longitudinal relations between parenting (e.g., acceptance, involvement and inconsistent discipline), child temperament (e.g., fearfulness, irritability, and positive emotionality), and behavior problems in a community sample of children (8-11 ages). As a result, they found a bidirectional association between child temperament and parenting such that parents' inconsistent discipline invokes children's negative emotionality, and child irritability increases inconsistent discipline by parents. In another study, Scaramella and Leve (2004) called attention to parent-child reciprocities characterized by the coercion

between highly reactive children and parents who use harsh discipline in response to children's high reactivity. Eisenberg et al. (2015) also studied the relationship between child effortful control, intrusive parenting, and externalizing problems in early childhood, and illustrated a bidirectional relationship between child effortful control and parental intrusiveness. A number of studies conducted in Turkey has also provided support for the transactional/bidirectional model of parenting and temperament (Altan-Aytun, Yagmurlu, & Yavuz, 2013). Altan-Aytun et al. (2013) indicated that Turkish young children who are emotionally reactive were exposed more to power assertive behaviors of mothers especially when they showed negative affect. Furthermore, in that study, emotional reactivity of children was found to be correlated with maternal obedience-demanding and punitive reactions.

Two explanations were put forward to clarify the mechanism behind assumed bidirectionality between parenting and child temperament; shared genetic bases and modeling. According to shared genetic bases explanation, certain traits such as anxiousness, and inhibition are being transferred from parents to children, in this sense, anxious/inhibited parents have children who are also anxious/inhibited (Kiff et al., 2011). However, twin and sibling studies indicated that parenting practices more likely to influence child adjustment outcomes through non-shared environmental processes (Bayer et al., 2006; Cicchetti & Toth, 1998; Kiff et al., 2011). Modeling explanation, on the other hand, advocates that young children display certain behaviors or reactions such as fear responses through modeling similar behaviors of the parents (Dubi, Rapee, Emerton, & Schniering, 2008). It appears that both genetic and modeling explanations operate in similar directions. However, a bulk of evidence revealed that children's behavior problems were better accounted by the way parents react to and behave towards their children’s behavior such as inconsistent discipline (Lengua

& Kovacs, 2005). In that sense, neither genetic nor modeling explanation seem to explain child behavior problems as adequately as non-shared environmental factors do. (Kiff et al., 2011).

Secondly, interactional models have been introduced to clarify the association between parenting and child temperament. According to this model, child temperament acts as a moderator of the link between socializing agents including parents and adjustment problems (Rothbart & Bates, 2006). Interaction models of parenting and temperament assume that the degree and even the direction to which parenting predicts behavior problems varies based on child's temperamental characteristics. More clearly, parenting practices and child characteristics interact in predicting behavior problems (Kiff et al., 2011). A number of theories supporting interactional models have been proposed (Bates et al., 1998).

Earlier theories advocated "goodness of fit" between environment, in particular parenting and child characteristics. According to goodness of fit theories, adjustment occurs as a result of a match between environment and child characteristics (Lagacé-Séguin & Coplan, 2005). Later on, theories emphasizing children's differential responsiveness to environment within which they grow up has dominated to the field. Within these theories, several models have been put forth such as organismic specificity. Organismic specificity purports that the way individuals respond to their environments depends upon their individual differences such that children variously respond similar environmental factors based on their "easiness" or "difficultness" (Kiff et al., 2011).

Another hypothesis within interactional models of parenting and temperament framework was Belsky's (2005) differential susceptibility hypothesis which specifically focuses on how parenting practices influence different children differently. According to differential susceptibility hypothesis, certain temperamental characteristics increase

children's likelihood to respond both positive and negative parenting practices. Differential susceptibility hypothesis is distinguished from diathesis-stress model such that to assume differential susceptibility, benefit in a positive environment should be evidenced. However, in the diathesis stress model, there is no need to assume that temperamentally vulnerable children will flourish in response to optimal parenting, but they are supposed to be affected most in the face of risky environment, in this case, negative parenting (Belsky, 2005).

It is notable that there have been remarkable findings supporting interactional models of parenting and temperament. For instance, Morris et al. (2002) reported that temperamental vulnerability to anger and frustration which was termed as high irritable distress and low effortful control in first and second-grade school children interacts with maternal psychological control and hostility in predicting internalizing and externalizing problems, respectively. Moreover, low effortful control, when interacts with maternal hostility was related to externalizing problems in these young children (Morris et al., 2002). In another longitudinal study by Mesman et al. (2009), among young children at age 2 to 3 years, only those with difficult temperament who receive sensitive parenting display substantial recovery from their externalizing symptoms. Kochanska and Kim (2013) reported similar results for toddlers in that 30 to 33 months of children with difficult temperament benefited from maternal responsiveness most which is marked by the strongest decrease in externalizing problems at 40 months. Of note, both of the findings reported above, indeed, were also good examples supporting differential susceptibility hypothesis (Kochanska & Kim, 2013; Mesman et al., 2009).

Thirdly, mediational models where mediator turns out to be the third variable linking a cause and an effect were proposed regarding the relations between parenting, temperament and children's behavior problems (Chang et al., 2011; Eisenberg et al., 2005b; Wu & Zumbo,

2008). Mediational models provide a valuable information on how one variable affects another variable through its influence on a third variable, mediator (Selig & Preacher, 2009). Either parenting or temperament has been hypothesized to be "the mediator" by a number of studies testing mediational models. Studies hypothesizing parenting as mediator assumed that child temperament predicts parenting behavior which in turn predicts child behavior problems (Van der Bruggen, Stams, Bögels, & Paulussen-Hoogeboom, 2010). For instance; Paulussen-Hoogeboom, Stams, Hermann, Peetsma, and Van den Wittenboen (2008) reported that the link between 3 year-old children's negative emotionality and their externalizing and internalizing problems was partially mediated by authoritative parenting. Similarly, an empirical research by van der Bruggen et al. (2010) indicated that maternal rejection mediated the link between negative emotionality at age 3.5 years and depression/anxiety at 4.5 years of age.

On the contrary, in the studies where temperament was hypothesized to be the mediator, the relations between parenting behaviors and child behavior problems were assumed to be mediated by child's temperamental characteristics (Chang et al., 2011; Eisenberg et al., 2005b). Although child's temperament has been maintained to be relatively stable, there may be some changes in the behavioral expressions of some temperamental characteristics such as reactivity (Rothbart & Bates, 2006). Changes in the expression of certain temperamental characteristics were closely related to young children's acquisition of regulatory skills which allows them to modulate their temperamental reactivity. Acquisition of self-regulation was at least partly accounted by children's interactions with parents. Blandon, Calkins, Keane, & O'Brien (2010), for instance, asserted that early parenting behavior (both positive and negative) predicted changes in children's temperamental qualities of negative affectivity and surgency later on.

Parental attitudes and practices influence young children's regulation of emotionality in various ways. Parental warm responding promotes young children's regulatory skills by creating an emotional climate which allows children to attend parental messages and by teaching them adaptive ways to regulate their emotional arousal in the face of challenging situations (Cunningham et al., 2009). Children who were able to effectively control their emotional arousal, then become less vulnerable to externalizing and internalizing problems. Oppositely, children whose parents were harsh and punitive could not control their emotionality in highly arousing situations since their emotional arousal was further stimulated by their parents, and harsh and punitive parents directly model emotion dysregulation to their children (Power, 2004). Children whose regulatory skills were hindered by their parents harsh and punitive attitudes were likely to experience externalizing and internalizing problems (Chang et al, 2011).

In support of this, Chang Schwartz, Dodge, and McBride-Chang (2003) have shown that harsh or punitive parenting lead to children's aggression, and this link mediated by child's emotion dysregulation which was characterized by inability to inhibit negative emotions, self-soothe, and focus attention. Moreover, Chang et al. (2011) who examined the longitudinal relationship between parenting practices, child effortful control and externalizing problems in young boys have found out that low levels of parental warm responsiveness and frequent corporal punishment predict child externalizing behaviors through their links with child's effortful control. In another study by Orta, Çorapçı, Yagmurlu, and Aksan (2013), maternal responsiveness was found to be related to better social competency and lower externalizing behaviors of Turkish preschool children in part because of its positive association with effortful control.

Lastly, additive models of parenting and temperament suggesting that parenting and temperament had significant but independent influence on children's behavior problems have been put forth. Additive models assume direct influence of parenting and temperament on adjustment problems and does not account for indirect; mediated or moderated influences (Kiff et al., 2011; Lengua, Wolchik, Sandler, & West, 2000; Olson et al., 2011). Olson et al. (2011), as a result of their cross-cultural study, found out that American, Chinese, and Japanese 4 year-old children's early externalizing problems were predicted independently by temperamental characteristic of inhibitory control; and parental use of harsh discipline. Lengua et al. (2000) also pointed out the direct and independent influence of rejection, inconsistent discipline, and negative emotionality on children's depressive symptoms. Although additive models have been supported by many investigators a decade ago, currently mediated or moderated linkages explaining the link between parenting, temperament and behavior problems received more recognition among investigators (Rothbart & Bates, 2006).

1.3. The Current Study

The parenting practices and child temperament have been considered as two crucial contributors of child adjustment outcomes (Kiff et al., 2011; Olson et al., 2011). Consistent with this consideration, a number of studies have examined parenting and temperament both separately and in relation to each other, and different models characterizing their relation to each other and to developmental outcomes have been tested for several times and for different developmental periods (Cunningham et al., 2009; Denham et al., 2000; Kiff et al., 2011; Nigg, 2006; Rothbart & Bates, 2006). However, as stated previously, both parenting behaviors and child temperament characteristics have markedly distinct connotations in different cultural contexts (Rothbaum & Trommsdorf, 2007). In this sense, increasing the number of “cultural level” investigations in understudied cultures both ensure generalizability

of the findings, and also enlighten culturally specific patterns of parenting practices and child characteristics.

Indeed, Stewart and Bond (2002) suggested that studying parenting practices on cultural level rather than adjusting Western-oriented parenting styles to all cultures allows us making culturally-specific inferences about parenting. However, although non-Western cultures such as Asian, African, Middle Eastern, and Southern and Eastern European represent the majority of world's cultures, studies on parent-child interactions and child adjustment are relatively scant in non-Western cultures (Rothbaum & Trommsdorf, 2007). To address the paucity of research in non-Western cultures, the main purpose of the current study was to examine the mechanism through which parental child rearing practices, temperament and behavior problems of Turkish children were associated during the transition from preschool to school-age. Preschool years are characterized by significant gains in several domains of development including changes in regulatory aspect of temperament; effortful control. During these times, young children's orienting-based regulatory system is transformed into executive based effortful control (Rothbart et al., 2011). Notably, these changes in regulatory skills of preschool children were significantly predicted in part by various parenting practices. Moreover, it has been documented that temperamental reactivity (negative and positive emotionality) and regulation of reactivity were associated with young children's externalizing and internalizing problems. In light of this, in this particular study, parental child rearing practices were hypothesized to be related to externalizing and internalizing behavior problems through the mediation by children's temperamental characteristics as it has been also documented in a number of previous studies (Chang et al., 2011; Chang et al., 2003; Eisenberg et al., 2005b). To note, studies focusing on developmental correlates of behavior problems such as parenting variables and children's

dispositional characteristics in Turkish young children were somewhat limited (Yavuz et al., 2016). Thus, the current study also addressed this gap in the literature and aimed to investigate if the pattern of relationship between these developmental correlates and behavior problems was similar to that of Western populations. Hypothesized model for the primary research questions was depicted in Figure 1. To achieve the aim of the current study stated above, following research questions and hypotheses were provided below.

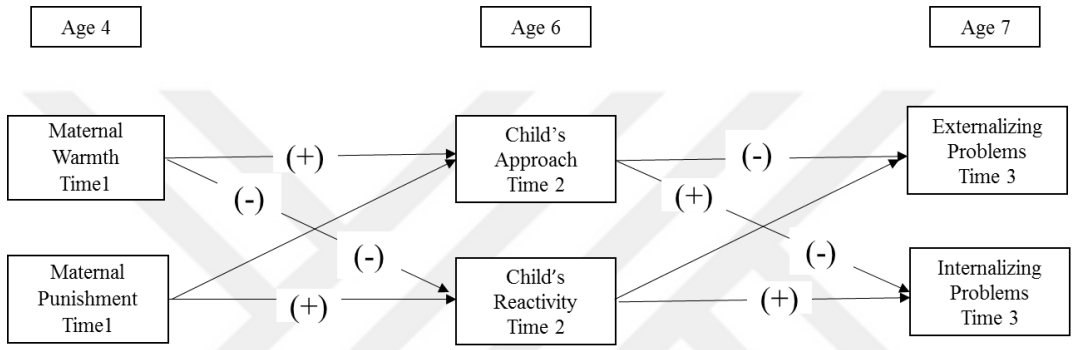


Figure 1. Hypothesized mediational model of maternal child rearing, child temperament, and externalizing and internalizing problems

1.4 Research Questions and Hypotheses

Research Question 1: What is the direction of longitudinal association between maternal child rearing practices and temperament? (Is it from parenting to child temperament or vice versa?)

Hypothesis 1: Maternal child rearing practices (parental warmth and punishment) at age 4 (T1) would predict child temperamental characteristics (approach and reactivity) at age 6 (T2).

Research Question 2: Does child temperament (approach and reactivity) at age 6 (T2) mediate the longitudinal association between maternal child rearing practices (warmth and

punishment) at age 4 (T1) and children's externalizing and internalizing problem behaviors at age 7 (T3)?

Hypothesis 2: Maternal warmth at age 4 (T1) would predict high levels of approach at 6 (T2), which in turn, negatively predicts internalizing behavior problems at Time 7 (T3).

Hypothesis 3: Maternal warmth at age 4 (T1) would predict low levels of reactivity at age 6 (T2), which in turn, negatively predicts both externalizing and internalizing behavior problems at age 7 (T3).

Hypothesis 4: Maternal punishment at age 4 (T1) would predict low levels of approach at age 6 (T2) which, in turn, positively predicts both externalizing and internalizing behavior problems at age 7 (T3).

Hypothesis 5: Maternal punishment at age 4 (T1) would predict high levels of reactivity at age 6 (T2) which in turn, positively predicts both externalizing and internalizing behavior problems at age 7 (T3).

All research questions and related hypotheses were formulated to examine the mediational role of temperament on the longitudinal relationship between maternal child rearing practices, children's externalizing and internalizing problems. To this end, first, the direction of longitudinal association between maternal child-rearing and children's behavior problems was figured out, then the mediational model was formulated and tested accordingly.

Child sex. A profound gender difference has been found regarding in externalizing and internalizing problems during school years and adolescence, but not that much gender difference has been evidenced among preschool age children (Campbell, 1995). For instance, Côté et al., (2009) found out that there are no sex differences in depressive and anxiety symptoms of preschool children. Similarly, in a study carried out by Erol et al. (2005) with Turkish toddlers, no significant sex difference has been observed on externalizing and

internalizing scores (except Anxiety/Depressed scale where girls scored significantly higher than boys). In another study, Combs-Ronto, Olson, Lunkenheimer, and Sameroff (2009) reported that gender differences in disruptive behaviors have become more pronounced during transition from preschool period to school age such that boys tend to display disruptive behavior more than girls do. In light of this, they suggested that preschool period is marked by the emergence, and stabilization of disruptive behavior.

As illustrated above, findings regarding gender differences in behavior problems markedly differs with regard to the period of development. Thus, the current study aims to explore if gender of the child matters in explaining behavior problems and it does, whether or not it interacts with any of the variables included in this study. However, no specific hypothesis was formulated regarding the role of child gender on the relationship between child-rearing, temperament and young children's behavior problems, it rather remained as an exploratory research question.

Socioeconomic Status (SES). SES was another demographic variable which has been referred frequently in child development studies since it was closely associated with children's cognitive, language, and socioemotional development (Bradley & Corwyn, 2002, Letourneau, Duffett-Leger, Levac, Watson, & Young-Morris, 2013; Scaramella et al., 2008). Dodge, Pettit, and Bates (1994), in their longitudinal investigation of SES and conduct problems of school children, have documented that lower SES in preschool was associated with the teacher reported externalizing behaviors in the first, second, and third grade. A number of studies has also shown that SES also contributed to parents' child-rearing practices, affecting child outcomes through the way it influences parent behaviors. Straus and Stewart (1999), for instance, has reported that low SES parents had a higher percentage of using corporal punishment as a way of disciplining child mainly because they were under

multiple stresses and bear more children. Likewise, Pinderhughes, Dodge, Zelli, Bates, and Pettit (2000) have documented that low SES predicted parent's endorsement of harsher discipline methods (such as spanking) to their kindergarten-aged children partly because of high levels of stress parents experience. To note, the effect SES of on child's behavioral and cognitive outcomes might vary with regard to several mediating and moderating factors such as the age of parents and children, parental resources, mental health of parents, and social support (Bradley & Corwryn, 2002; Letourneau et al., 2013, Straus & Stewart, 1999). In the present study, SES was controlled on child-rearing practices to eliminate the possibility that SES might explain some of the variance in hypothesized relationships.

CHAPTER 2
METHODS

2.1 Participants

The current research was a secondary analysis study using data from Longitudinal Study of Children's Cognitive, Emotional and Prosocial Development which was funded by The Scientific and Technological Research Council of Turkey [to Asiye Kumru (Grant No: 104K068)]. In the original study, participants were followed through 4 waves of data collection, and the current study examined the data across three waves (Wave 1: Mage = 4; Wave 3: Mage=6; Wave 4: Mage=7). For the first wave (T1, age 4), 293 mostly middle-class Turkish preschool children (48.1% girls; 51.9 boys; Mage = 49.01 months; SD = 3.86; range 39-58 months) were recruited through public (48%) and private (52%) day-care centers in Bolu, Ankara, and Istanbul, Turkey. The income of the families was measured on a 6-point scale where 1 represents less than 450 TL which was the minimum wage at the time, and 6 represents more than 5000 TL. Mean years of education was 13.81 years for mothers (range=5-25 years) and 14.39 years for fathers (range=5-27 years).

For the second wave (T2, $M_{ag\ e}$ = 49.03, *SD* = 3.78), number of children was 179 (48% girls, 52 % boys; 54.7 % from public school, 45.3% from private school). For the third wave (T3, M_{age} = 48.9, *SD* = 3.77), the sample had 158 children (45.6% girls, and 54.4% boys) among which 48.7% went to public school, 51.3% went to private school. Demographic characteristics of children and parents were shown in Table 1.

Table 1.

Demographic Characteristics of the Sample (n=293)

Characteristic		n	%
Gender			
	Boys	152	51.9
	Girls	141	48.1
Age (months)			
39-48		124	42.2
49-58		169	57.5
Income (TL)			
	<450	4	1.4
	450-750	9	3.1
	750-1500	51	17.4
	1500-3000	131	44.7
	3000-5000	46	15.7
	>5000	47	16
Mother's age			
	<30	65	22.2
	30-40	206	70.3
	>40	21	7.5
Mother's education			
	Primary school	15	5.1
	Secondary school	7	2.4
	High School	83	28.3
	College and above	188	64.2
Father's Education			
	Primary school	10	3.5
	Secondary school	7	2.4
	High School	72	25.2
	College and above	197	68.8
Mother's Marital Status			
	Married	278	94.9
	Separated/Divorced	13	4.4
	Widowed	1	0.3
	Remarried	1	0.3

2.2 Materials

2.2.1 Maternal Child Rearing Practices

Mothers completed Child Rearing Questionnaire (CRQ) which was first developed by Sanson (1994), and later elaborated by Paterson and Sanson (1999). CRQ has 30 items on which mothers rated each behavior on a 5-point Likert scale where 1 indicating "Never" and 6 indicating "Always", and it has 4 subscales measuring Warmth (e.g., "I often hug or hold my child for no particular reason."), Punishment (e.g., I use physical punishment, e.g., smacking, for very bad behavior."), Obedience-Demanding (e.g., "I expect my child to do what he/she is told to do, without stopping to argue about it.") Inductive Reasoning (e.g., "I give my child reasons why rules should be obeyed."). CBQ was translated and validated with the sample of Turkish mothers by Yagmurlu and Sanson, (2009), and Cronbach alpha's were .74 (Warmth), .90 (Punishment), .76 (Obedience Demanding), and .78 (Inductive Reasoning) In the current study, related with our research questions, we used two subscales; warmth (including 10 items) and punishment (including 8 items). Cronbach's Alphas were .73 for Warmth, and .75 for Punishment.

2.2.2 Child's Temperament

The Short Temperament Scale for Children (STSC) was developed from factor analysis of the Child Temperament Questionnaire developed by Thomas and Chess (1977) and further elaborated by Prior, Sanson, and Oberklaid (1989) to measure temperamental characteristics of children. It consists of 30 items rated on a 6-point scale, and aims to tap into four temperamental dimensions which are Reactivity (e.g., "When upset or annoyed with a task, my child throws it down, cries, slams doors."), Persistence (e.g., "My child likes to complete one task or activity before going on to the next."), Approach (e.g., "When in the park or visiting, my child will go up to strange children and join in their play."), and

Rhythmicity (e.g., "My child asks for or takes a snack about the same time in each day."). Turkish version of STSC was developed by Yagmurlu and Sanson, (2009) and used reliably with Turkish samples previously (Cronbach alpha's were .77 for Reactivity, 76 for Persistence, .80 for Approach, and .48 for Rhythmicity). In the current study, two subscales of Turkish version of STSC; approach (including 7 items) and reactivity (including 9 items) were used. Cronbach alpha's were .70 for at reactivity subscale and .73 for approach subscale.

2.2.3 Externalizing and Internalizing Problems

CBCL 1.5/5 was developed by Achenbach and Rescorla (2000) to assess preschooler's externalizing and internalizing behavior problems. The scoring CBCL 1.5/5 provides a summary profile of externalizing, internalizing and total problem scores. Items are scored on eight syndrome scales including Emotionally Reactive, Anxious/Depressed, Somatic Complaints, Withdrawn, Sleep Problems, Attention Problems, Aggressive Behaviors, and Other Problems, and on five DSM-oriented scales which are affective problems, anxiety problems, pervasive developmental disorders, attention deficit/hyperactivity problems, and oppositional defiant problems. Turkish adaptation of this instrument has been made by Erol (2002). CBCL 1.5/5 consists of 100-items, 99 of which are problem-related statements rated on a 3-point Likert-type scale (0 = "Not true"; 1 = "Somewhat or Sometimes true"; 2 = "Very true or Often true") and 1 open-ended problem item. The scale assesses externalizing symptoms such as "Doesn't seem to feel guilty after misbehaving" and internalizing symptoms such as "There is very little he/she enjoys" and "Feels dizzy and lightheaded". In the current study, only Aggressive Behaviors syndrome scale (including 19 items) was used to get a score on externalizing behavior problems while Anxious/Depressed (including 8 items), Somatic Complaints (including 11 items), and Withdrawn (including 8 items)

syndrome scales were used to get a score on internalizing behavior problems. Internal consistencies were; .87 for "Aggressive Behavior", .63 for "Anxious/Depressed", .66 for "Somatic Complaints”, and .60 for "Withdrawn".

2.3 Procedure

After the approval was taken from Research and Development Department of National Education Ministry, the data was collected through public and private schools in Ankara, İstanbul, and Bolu. First, recruitment letters were sent to mothers through children and their teachers. Then, participants who returned the consent forms signed by their mothers considered to be volunteer to participate in this study. After mothers’ consent was obtained, demographic forms and measurements were sent to them. Mothers filled out all the measurements and sent them back to the teachers through their children in a sealed envelope Teachers were also filled out the same questionnaires. At the end, mothers and teachers were informed about the study and they were thanked for their participation.

CHAPTER 3

RESULTS

3.1 Attrition Analysis

The difference between T1 scores of participants who retained at T2 and those who withdrew; and T1 scores of participants who retained at T3 and those who withdrew were tested to examine the possible influence of attrition across three waves. Chi-square tests of independence were carried out to see whether these groups differ in terms of gender, and it was found that these groups did not differ significantly on gender distribution. A series of ANOVA tests were run to test the difference between these groups on demographic and the main study variables. T1 scores of participants who retained at T2 and those withdrew were significantly different on mother's years of education, F (1, 289) = 16.782, p = .000, with mothers retained were more highly educated than those who withdrew ($M_{retained}$ = 14.46, SD= 3.14; $M_{withdrew}$ = 12.80, SD = 3.69), and on maternal punishment at T1, F (1, 174) = 3.98 , p = .048, with mothers who retained endorsed higher levels of punishment than those who withdrew ($M_{retained}$ = 1.32, SD= .38; $M_{withdrew}$ = 1.22, SD = .36).

Additionally, T1 scores of participants who retained at T3 and those withdrew were significantly different on mother's years of education, F (1, 289) = 31.85, p = .000, father's years of education, F (1, 279) = 11.80, p = .001 and maternal punishment at T2, F (1, 174) = 3.98, p = .048. Accordingly, mothers of children who retained at T3 were more highly educated than those who withdrew ($M_{retained}$ = 14.82, SD= 2.94; $M_{withdrew}$ = 12.63, SD = 3.64). Similarly, fathers of children who retained at T3 were more highly educated than those who withdrew ($M_{retained}$ = 15.08, SD= 3.27; $M_{withdrew}$ = 13.63, SD = 3.67). Finally, mothers of children who retained in the study at T3 were also less likely than those who withdrew to

endorse punishment ($M_{retained}$ = 1.29, *SD*= .39; $M_{withdrew}$ = 1.48, *SD* = .55). Attrition rate from T1 to T3 was 46% across four waves.

3.2 Data Analyses Plan

This study aimed to find out if temperamental characteristics of children (approach and reactivity) mediate the relationship between maternal child-rearing behaviors (maternal warmth and punishment), and children's externalizing and internalizing behavior problems. Cole and Maxwell (2003) put forward the idea that at least 3 time points are optimal to test a mediated association. When the data is longitudinal and main variables were tested in at least three points in time, it is reasonable to use the Structural Equation Modeling (SEM). Even though causality cannot be implied even in the SEM, it is mainly used to test how plausible to assume causality in a particular association (Eisenberg et al., 2005b). For this reason, in the current study, two longitudinal models which were analyzed through SEM were proposed.

According to Cole and Maxwell (2003) omitted parts (e.g., child driven paths to maternal child rearing behaviors, in the current study) should also be included in a mediational analysis. Taking this into account, direction of association between maternal child rearing practices and child's temperament at T1 and T2 were tested through an autoregressive cross-lagged model. With the help of this model, first, we were able to explore if maternal child rearing practices and child's temperament have a cross time consistency from T1 to T2. This analysis also enlightened us if cross-lagged relationships between maternal child rearing practices and temperament across two different time points exist, if so, what is the direction of these relations. Thus, with this analysis, it was also possible to explore if the paths from a prior measurement of children's temperamental characteristics were predictive of later parental child-rearing behaviors or not. Thus, as Cole and Maxwell

(2003) recommended, possible child-driven paths as well as parent-driven paths were tested by means of autoregressive cross-lagged model.

Lastly, another longitudinal model in which maternal warmth and punishment at T1 were hypothesized to predict child's temperamental characteristics (approach and reactivity) at T2 which, in turn, predict externalizing and internalizing problems of children at T3 was also tested via SEM. This longitudinal model was first tested without controlling prior measurement of externalizing and internalizing problems at T2. Then, the model was retested as T2 externalizing and internalizing problems controlled.

Descriptive statistics for and bivariate correlations among main variables included in three hypothesized models were analyzed by using SPSS (V. 20) and SEM analyses were conducted through Mplus 7.4 (Muthen & Muthen, 2012).

3.3 Preliminary Analyses

Descriptive statistics (means and standart deviations) and correlational analyses were carried out on gender, SES, maternal warmth, punishment, child's approach and reactivity, and externalizing and internalizing behavior problems for all three waves of measurement. (externalizing and internalizing problems at T2 were added into the correlation matrix since they were controlled at the second test of the longitudinal model). Descriptive statistics and correlations was shown in Table 1. Results from correlational analyses indicated that all child's sex had a significant correlation with only externalizing problems at T2 such that boys showed higher levels of externalizing problems than girls. SES, on the other hand, had significant correlations with more than one variables. It had negative correlations with maternal punishment at T1 and T2 and internalizing problems at T2 and T3, externalizing problems at T3 and positive correlations with maternal warmth at T1 and T2.

Maternal warmth significantly associated with low levels of maternal punishment both concurrently and longitudinally. Regarding the associations between maternal warmth, temperament, and child behavior problems, high maternal warmth at T1 and T2 correlated with high levels of child's approach tendency at T2, low levels of child's reactivity at T2 and externalizing and internalizing problems at T2 and T3. On the other hand, frequent use of maternal punishment at T1 and T2 associated with elevated levels of child's reactivity at T2 and externalizing and internalizing problems at T2 and T3.

Temperamental approach, at T1 and T2 was negatively correlated with reactivity at T2 and internalizing problems at T2 and T3. Approach at T1 was also negatively correlated with reactivity at T1. Reactivity at T1 and T2, on the other hand, was positively correlated with both externalizing and internalizing problems at T2 and T3. Finally, externalizing and internalizing problems were highly correlated with each other both cross-sectionally and longitudinally.

Table 2.

Means, Standard Deviations, and Correlations among Main Study Variables

	M	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Sex	_	_	_												
2. SES	10.82	2.26	.02	_											
3. Punishment T1	1.28	.38	-.04	-.23**	_										
4. Warmth T1	4.69	.30	.02	.13*	-.16**	_									
5. Approach T1	3.94	1.04	-.08	-.02	-.11	.03	_								
6. Reactivity T1	3.17	.87	-.01	-.01	.23**	-.06	-.18**	_							
7. Punishment T2	1.32	.42	-.04	-.21**	.59**	-.30**	.01	.11	_						
8. Warmth T2	4.58	.36	-.11	.17*	-.13	.53**	.07	.06	-.33**	_					
9. Approach T2	4.31	1.02	-.14	-.04	-.13	.16*	.60**	-.04	-.05	.16*	_				
10. Reactivity T2	2.81	.78	.07	.03	.18*	-.20**	-.19*	.44**	.34**	-.20**	-.20**	_			
11. Externalizing T2	.48	.29	-.17*	-.10	.32**	-.24**	-.04	.30**	.36**	-.18*	-.09	.45**	_		
12. Internalizing T2	.32	.19	-.04	-.18*	.22**	-.29**	-.27**	.14	.24**	-.22**	-.47**	.34**	.51**	_	
13. Externalizing T3	.43	29	-.08	-.23**	.26**	-.20*	.03	.32**	.38**	-.17*	-.03	.39**	.67**	.28**	_
14. Internalizing T3	.27	.19	-.07	-.23**	.19*	-.26**	-.20*	.17*	.17*	-.19*	-.34**	.26**	.38**	.63**	.53**

Note. *p<.05, **p<.01

3.4 Testing the Direction of Longitudinal Association between Maternal Child Rearing Practices and Temperament

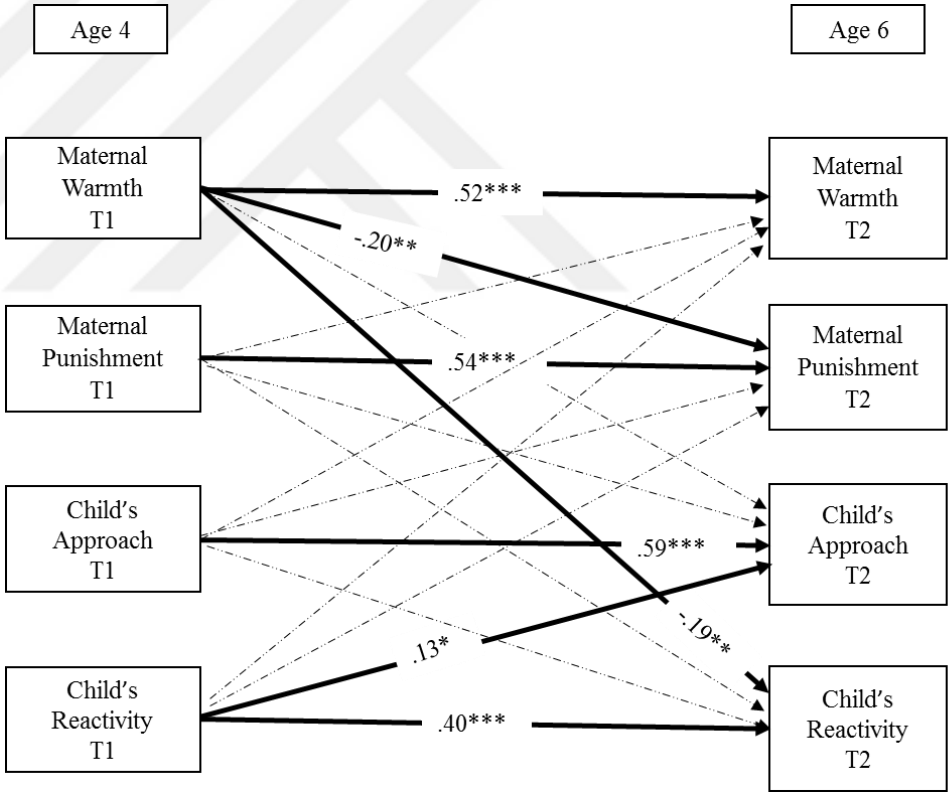
To test the first research question, autoregressive cross-lagged panel model was used. This model has been commonly used to reveal the structural associations between repeatedly measured constructs (Selig & Little, 2012). Two time points (T1, T2) and four observed variables (maternal warmth and punishment; and child's approach and reactivity) were used in this model.

In the model, the linear regression coefficients refer to autoregressive effects showing the influence of a construct on itself measured at a later point in time. To be more precise, a significant autoregressive effect allows one to conclude that measured construct shows stability from one time point to the next (e.g. from $X_{Time\ 1}$ to $X_{Time\ 2;}$ Selig & Little, 2012). Cross-lagged effects, on the other hand, show the influence of a construct on another measured at a later point in time (e.g., from $X_{Time\ 1}$ to $Y_{Time\ 2}$). There is an important feature of cross-lagged effects such that while a cross-lagged path was tested, the prior level of the construct was being controlled. By means of this feature, one can conclude that a sizable cross-lagged effect from $X_{Time\ 1}$ to $Y_{Time\ 2}$ was not due to the high correlation between $X_{Time\ 1}$ and $Y_{Time\ 1}$ (Cole & Maxwell, 2003; Gollob & Reichardt, 1987, Selig & Little, 2012).

Moreover, autoregressive cross-lagged panel models were advantageous in the sense that it allows testing reciprocal relations that have a significant place in developmental sciences (Sameroff, 2009). It makes it easier to test if cross-lagged effects occurs in both directions (e.g., from $X_{Time\ 1}$ to $Y_{Time\ 2\ and}$ $Y_{Time\ 1}$ to $X_{Time\ 2)}$ thus showing reciprocal relations, or occurs only in one direction (e.g. $X_{Time\ 1}$ to $Y_{Time\ 2)}$. In this sense, in the current study, it serves an important aim: figuring out if cross-lagged relations occur between

maternal child rearing practices and child's temperament, if they do, what are the directions of these cross-lagged effects.

As can be seen in Figure 2, results from the autoregressive cross-lagged model have shown that all the autoregressive effects were significant and positive suggesting that both parenting child-rearing practices and child's temperamental characteristics showed considerable stability from T1 to T2. With regard to cross-lagged paths, high maternal warmth at T1 was able to predict low levels of maternal punishment at T1 and child's reactivity at T2. In addition, child's reactivity at T1 positively predicted child's approach at T2. Consequently, the direction of the relations between maternal child rearing practices and child's temperament turns out to be from maternal child rearing (maternal warmth but not punishment) to temperament (child's reactivity but not approach). Thus, there were not reciprocal, bidirectional relations between maternal child rearing practices and child temperament. It is also important to note that mothers who were warm at T1 remained warm, and did not show punitive reactions at T2, thus, they maintained their positive attitudes and avoid negative reactions over time. In addition, children who were high on reactivity at T1 remained highly reactive at T2, but strikingly, they have become more approaching at T2, as well.



***p<.001, **p<.01, *p<.05 *Note.* Standardized path coefficients were shown in the figure. Dashed lines represent nonsignificant paths. Initial levels of maternal child rearing practices and child temperament characteristics were controlled. SES was controlled on all variables in the model.

Figure 2. Autoregressive cross lagged model using mother-reported data at T1 and T2

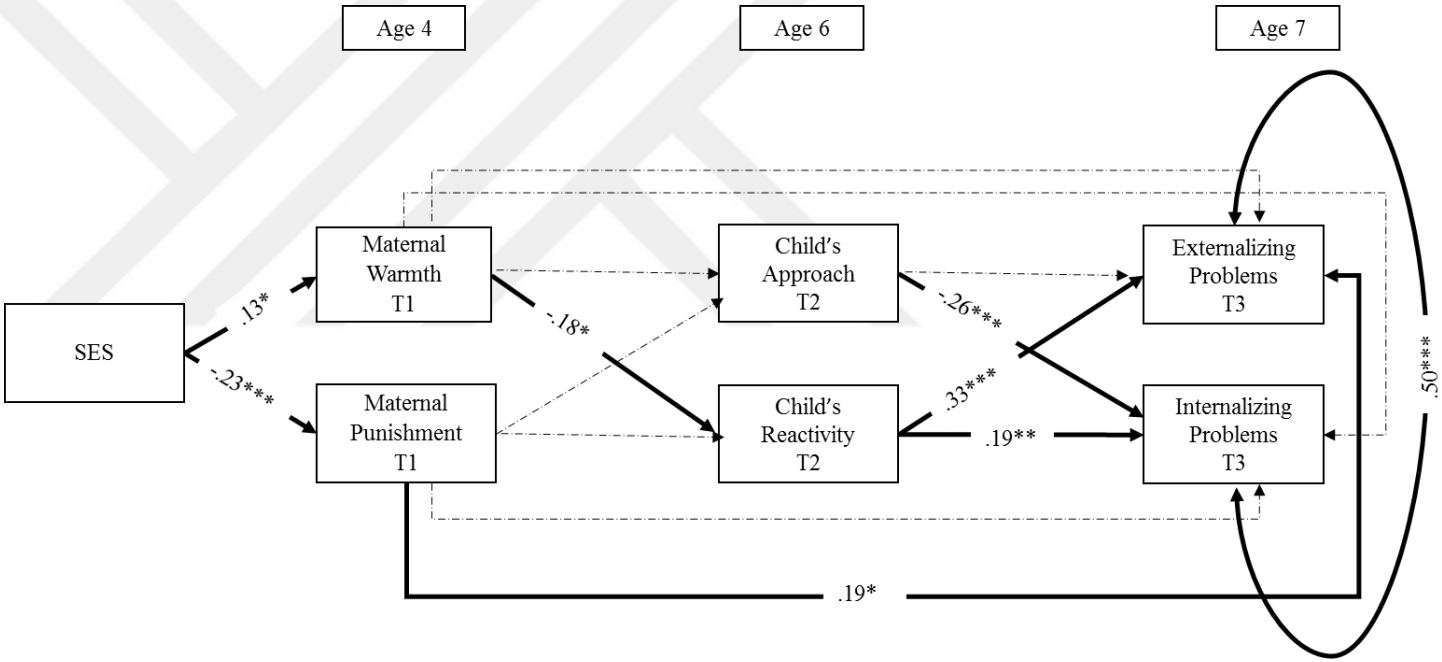
3.5. Testing Longitudinal Mediational Model among Maternal Child-Rearing Practices, Child's Temperament, and Externalizing and Internalizing Problems

In light of findings from autoregressive cross-lagged model, longitudinal model with 3 waves of data were designed as such; from maternal warmth and punishment (T1) to child's reactivity and approach (T2), and in turn to externalizing and internalizing problems of children (T3). Longitudinal model was tested first, without controlling T2 externalizing and internalizing problems on T3 externalizing and internalizing problems, and second, controlling for earlier behavior problems (at T2) on subsequent behavior problems (at T3). In both model tests, SES was controlled on T1 maternal child rearing practices.

Hu and Bentler (1998) suggested that to evaluate, and compare the model fit, the root mean square error of approximation (RMSEA), comparative fit index (CFI), and the Chi Square Test were the indices that were widely accepted and used. While values for the CFI closer to .95 and those for the SRMR approximating to .08 indicate a good fit, CFI values closer to .90 were also considered to reflect an acceptable model fit (Hu & Bentler, 1998, 1999). Furthermore, advocated that RMSEA values closer to .05-.08 indicates a reasonable fit between the conceptual model and the observed data.

Following the commonly used values for model fit (Hu & Bentler, 1998), results from the first longitudinal model (without controlling T2 behavior problems) demonstrated that the model fit was adequate χ^2 (df = 27, N = 276) = 24.080, p < .01, CFI = .87, RMSEA = .10, and SRMR= .06). Tested model was depicted in Figure 3. In the model, SES predicted both maternal warmth (β = .13; p < .05) and punishment (β = -.23; p < .001) at T1. Maternal warmth (but not punishment) negatively predicted child's reactivity at T2, which in turn, predicted both externalizing and internalizing problems at T3 positively. Maternal punishment, on the other hand, positively predicted only externalizing problems at T3. In

addition, high levels of child's approach at T2 predicted low levels of internalizing problems at T3. In addition, indirect links from maternal child-rearing practices to child behavior problems were tested. Only one indirect link occurred; (1) from maternal warmth to externalizing behaviors, this indirect link was fully mediated by child's reactivity. Strikingly, maternal warmth by itself did not predict children's behavior problems 3 years later. However, high maternal warmth when children were at age 4 somewhat attenuated children's reactivity at age 6, and lower levels of reactivity, then, made these children less vulnerable to externalizing and internalizing problems at age 7.

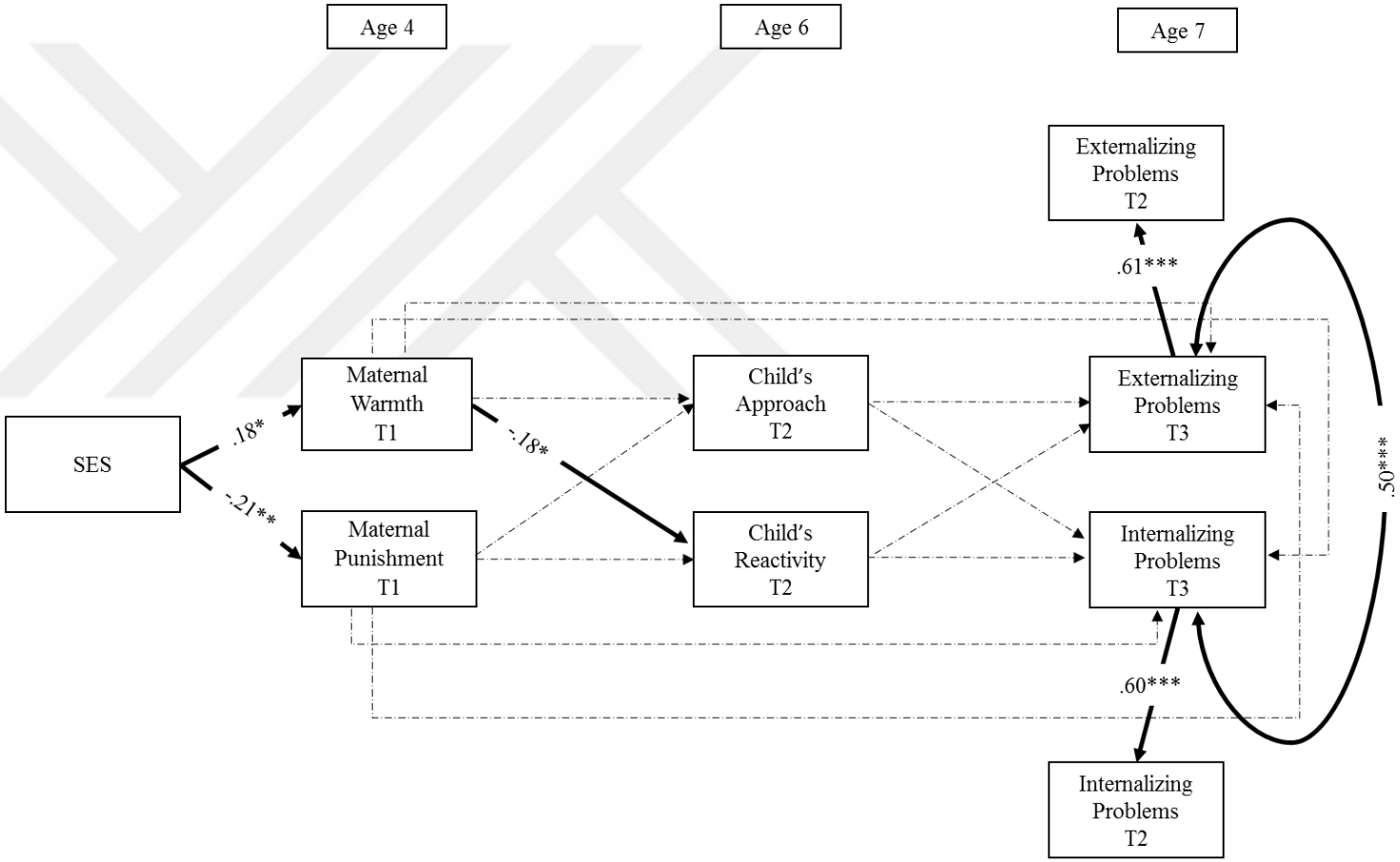


λ^2 = 24.08 *p*=.000 CFI= .87 RMSEA= .10 SRMR=.06

***p<.001, **p<.01, *p<.05 *Note.* Standardized path coefficients were shown in the figure. Dashed lines represent nonsignificant paths. Error covariances between behavior problems were not depicted. SES was controlled on maternal child-rearing practices. Significant indirect effect: maternal warmth to externalizing problems through child's reactivity (*β*= -.06, *SE*= .03, *p*= .04)

Figure 3. Longitudinal model using mother-reported data (initial levels behavior problems at T2 were not controlled.)

In the second longitudinal model, prior measurements of externalizing and internalizing problems (at T2) were controlled. When T2 behavior problems were controlled, model fit weakened strikingly, χ^2 (df = 16, N = 166) = 121.742, p < .01, CFI = .67, RMSEA = .20, and SRMR = .15, and many of the significant paths occurring in the first longitudinal model were disappeared. Tested model was shown in Figure 4. In this model, SES was again able to predict maternal warmth (β = .18; p < .05) and punishment (β = -.21; p < .01). Similar to the first longitudinal model, maternal warmth at T1 negatively predicted child's reactivity at T2, however, this time, child's reactivity did not predict neither externalizing nor internalizing behaviors at T3. Thus, unlike the first longitudinal model, full mediation by child's reactivity did not occur in this model. Furthermore, no other mediated relationship was found between any of the maternal child-rearing practices and behavior problems. Notably, autoregressive paths from T2 to T3 behavior problems were strikingly significant suggesting that externalizing and internalizing problems showed considerable stability from age 6 to 7.



λ^2 = 121.74 p=.000 CFI= .67 RMSEA= .20 SRMR=.15

***p<.001, **p<.01, *p<.05 *Note.* Standardized path coefficients were shown in the figure. Dashed lines represent nonsignificant paths. Error covariances between behavior problems were not depicted. SES was controlled on maternal child-rearing practices

Figure 4. Longitudinal model using mother-reported data (earlier behavior problems at T3 were controlled.)

CHAPTER 4

DISCUSSION

The main purpose of the current study was to explore the longitudinal relations of temperament and maternal child rearing practices with externalizing and internalizing behavior problems in Turkish young children. Drawing upon the existent theoretical and empirical work on the influence of parental child rearing practices (Maccoby & Martin, 1983; Paterson & Sanson, 1999) on young children's externalizing and internalizing behavior problems (Bornstein et al., 2008; Denham et al., 2000; Gershoff, 2002; Mulvaney & Mebert, 2007) two main research questions were addressed to investigate the nature of the longitudinal relationship between maternal child rearing and children's temperament (whether it was transactional or directional), and to find out if children's temperamental characteristic of approach and reactivity mediates the relations between maternal child rearing practices of warmth and punishment and externalizing and internalizing behavior problems longitudinally. These research questions were tested through two structural equation models (SEMs); autoregressive cross-lagged model, and a three wave mediational model, respectively.

Overall, the findings of the current study revealed a directional (but not a bidirectional) relationship between maternal child rearing practices and children's temperamental characteristics. The direction of this longitudinal relationship was from maternal child-rearing to children's temperament such that high maternal warmth (at age 4) predicted lower levels of children's reactivity (at age 6) over time. Moreover, while maternal punishment only directly predicted children's subsequent externalizing problems (but not internalizing problems), maternal warmth was found to be indirectly predict externalizing problems, and this association was fully mediated by children's temperamental reactivity. In the following sections, findings were discussed in detail by considering each research

question separately. After discussing the main findings, strength and limitations of the study and directions for future research were provided. Finally, implications of the current study were presented.

4.1 Bivariate Correlations among Main Study Variables

Correlations among demographic variables (child's sex and family SES) and the main study variables; maternal warmth and punishment, children's temperamental characteristics of approach and reactivity, and their externalizing and internalizing behavior problems were all significant and in the expected directions. Child sex was not correlated with any of the main variables except externalizing behavior problems when children were 6 years old. That is, boys exhibited higher levels of externalizing problems than girls at age 6. It was in line with the previous studies indicating that there was not a profound difference between boys' and girls' behavior problems in early childhood (Campbell, 1995; Combs-Ronto et al., 2009; Côté et al., 2009; Erol et al., 2005). Indeed, Sameroff (2009) also maintained that gender differences in disruptive behaviors become more salient during the transition to school in that boys tend to show more disruptive behaviors than girls as found in this study. Regarding the family SES, the results indicated that low family SES at age 4 was correlated with lower levels of maternal warmth, but higher levels of punishment at age 4 and 6, and higher levels of externalizing at age 7 and internalizing behavior problems at age 6 and 7. In support of these findings, Straus and Stewart (1999) also reported that low SES parents were more eager to use corporal punishment for disciplining their children. Dodge et al. (1994) also revealed that low SES during preschool years were related to higher levels of externalizing problems during 1st, 2nd, and 3rd grade. Thus, the patterns of the relationship between SES, maternal child rearing, and child behavior problems appeared to be similar those found in the studies with Western samples.

Regarding correlations among main variables, maternal warmth and punishment were significantly and negatively correlated with each other. Thus, mothers who displayed higher levels of warmth were less likely to use power assertive techniques than those who were lower on warmth dimension and vice versa both concurrently and longitudinally. Moreover, maternal warmth was positively related to children's temperamental characteristic of approach, but negatively related to reactivity. Temperamental approach characterizes children's sensitivity to rewards, high excitement and positive affect toward pleasurable activities, and behavioral approach to novel stimuli (Dennis, 2006; Guerin et al., 2011). Notably, literature examining the associations between different parenting styles/practices and children's approach (vs withdrawal) was scarce (Lengua & Kovacs, 2005). In a study, Perry and her colleagues have indicated that lower levels of maternal emotional support predicted higher initial levels of vagal withdrawal to frustration and increases in withdrawal in preschool children over time (Perry et al., 2003). It is noteworthy to note that temperamental approach which was considered under higher order temperamental characteristic of positive affectivity may also characterize sociability and affiliation in interpersonal relationships including parent-child relations (Kochanska et al., 2007; Putnam, 2012). In this sense, attachment theory provides a strong theoretical support for the positive correlation between maternal warmth and young children's approach tendencies. According to attachment theory as far as a primary caregiver responds to an infants' attachment behaviors sensitively, the infant perceives the caregiver as safe haven and secure base from which he or she can explore the environment (Colonnesi et al., 2011). In this sense, secure attachment organization may provide young children with a sense of security which allows them to actively engage and explore the environment around them. The positive correlation between maternal warmth and children's approach in the current study may be supported by main understanding of attachment theory.

Reactivity, on the other hand, includes both positive and negative affectivity and characterize children's predisposition toward negative (e.g., anger, sadness, frustration, and fear) and positive (high activity level, approach, and high intensity pleasure) affective states (Blandon et al., 2010; Rothbart et al., 2001). There has been an ample support in the literature for the associations among parental warmth, (also sensitivity and the use of positive discipline techniques), and younger as well as older children's regulations of negative/positive emotionality, and positive behavioral adjustment (Cunningham et al., 2009; Denham et al., 2000). Bates, Schermerhorn, and Petersen (2012) reported that higher levels of parental warmth and sensitivity predicted declines in children's later negative emotionality even after controlling initial levels of temperament. Davidov and Grusec (2006) have asserted that parental warmth was related to regulation of positive affectivity (but not negative affectivity) in young children.

Consistent with the previous findings, the current study indicated that high maternal warmth was associated with lower levels of externalizing and internalizing problems at age 6 and 7. Reuben et al. (2016), for instance, has documented that adoptive mothers' warm parenting associated negatively with externalizing problems of children during school entry. Similarly, a number of studies have also consistently shown that lower levels of parental warmth were associated with elevated levels of anxiety and depression (McLeod et al., 2007a; McLeod et al., 2007b).

As expected, results from correlational analyses also revealed that maternal punishment was negatively correlated with approach and positively correlated with reactivity. Thus, children whose mothers who endorsed higher levels of punishment were less likely to be approaching or sociable while they were more likely to experience intense emotional arousal. In support of this, a growing body of research from Western studies have, indeed, documented that punitive or harsh parenting adversely affects young children's adaptive

regulation of positive as well as negative emotions, thus, make them prone to elevated levels of both positive and negative affect (Blandon et al., 2010; Chang et al., 2003).

It has also been shown that higher levels of maternal punishment were related to higher levels of externalizing and internalizing behavior problems. This was indeed in accord with what the previous literature has indicated with regard to the relations of power assertive parenting practices, with children's externalizing and internalizing problems. Combs-Ronto et al. (2009), for instance, have documented that negative maternal parenting and children's externalizing behavior problems were reciprocally related during preschool to school transition. Besides externalizing problems, parental negative control and punishment have also been found to be predictive of young children's internalizing problems. Mulvaney and Mebert (2007) have shown that maternal punishment was longitudinally associated with high levels of internalizing problems during toddlerhood and the first grade.

In terms of children's temperamental characteristics, approach was negatively related to both reactivity and internalizing problems, while high reactivity was related with higher levels of externalizing and internalizing problems. Blandon et al. (2010) has suggested that surgency which encompasses children's approach and engagement with the environment was usually associated with positive development of young children although, in some instances, it was related with aggression and frustration (particularly when children's goals were thwarted). Kochanska et al. (2007) emphasized the dual nature of positive affectivity, and asserted that one aspect of positivity; affiliative, positive social emotions which are marked by harmonious interpersonal relationships were related to well-regulated behaviors in young children. It has also been documented that higher levels of affiliative approach in interpersonal relationships were related to lower levels of internalizing behavior problems (Putnam, 2012). Reactivity, on the other hand, was usually associated with children's dysregulation of positive or negative emotionality, and behavior problems (Fox et al., 2001;

Hubbard et al., 2002). In this sense, negative associations of children's approach with reactivity and internalizing problems and positive associations of children's reactivity with externalizing and internalizing problems were not surprising. Finally, externalizing and internalizing problems were found to be highly correlated with each other. Indeed, this might lend initial support for the co-occurrence, and codevelopment of externalizing and internalizing problems (Bornstein et al., 2010; Stone et al., 2015).

4.2 Autoregressive and Cross-Lagged Relationships between Maternal Child-Rearing Practices and Temperament-Hypothesis 1

Before testing hypothesized mediational relationship between maternal child rearing, child's temperament, and externalizing and internalizing problems, the associations between maternal child-rearing practices and temperament were examined by means of autoregressive cross lagged model. In this model, both autoregressive and cross-lagged paths from T1 to T2 were tested. Overall, all the autoregressive paths appeared to be significant. Moreover, as hypothesized, maternal warmth when children were 4 years old predicted children's reactivity at age 6. Not surprisingly, high maternal warmth at age 4 predicted low levels of maternal punishment two years later. However, the current study failed to support the hypothesis that maternal punishment would predict children's temperamental characteristics of approach and reactivity. Although not hypothesized in the current study, child's high reactivity at age 4 predicted high levels of child's approach at age 6.

Contrary to great deal of theoretical and empirical research supporting transactional relationship between parenting practices and children's temperamental characteristics (Campbell et al., 2000; Lengua & Kovacs, 2005; Scaramella & Leve, 2004), there was no bidirectional association between maternal child rearing and temperament in the current study. Overall, results showed that all the autoregressive paths were significant suggesting that both maternal child rearing practices (warmth and punishment) and child's

temperamental characteristics of reactivity and approach showed considerable stability over time. Thus, Turkish mothers who rated themselves as warm at T1 remained warm 2 years later, and those who rated themselves punitive at T1 maintained their punitive behaviors at T2. Regarding the stability of temperamental characteristics in the current study, it can be said that it was in accordance with the previous work suggesting that temperamental characteristics were relatively stable with stability coefficients ranging from .35 to .70. To illustrate, Caspi and Silva (1995) have reported that children who were high in approach tendencies at age 3, reported that they were more impulsive, careless and spontaneous when they reached 18.

In cross-lagged analyses, initial levels of the variables (parenting and child's temperament variables) were controlled in all paths (Selig & Little, 2012). Not all the cross-lagged paths turned out to be significant, however. One significant autoregressive path was from maternal warmth at T1 to maternal punishment at T2 in that mothers who were warm and responsive when their children were 4 withheld themselves from being punitive to their children two years later even after controlling for initial levels of maternal parenting and children's temperamental characteristics at age 4. Thus, mothers retained their attitudes over 2 years regardless of their children's temperamental characteristics of approach and reactivity.

Although, results did not support bidirectionality between maternal child rearing practices and children's temperament, a directional longitudinal relationship was found, and it was from maternal child rearing practices (warmth) to children's temperament (reactivity). Thus, maternal warmth at T1 negatively predicted children's reactivity at T2 even after initial levels of maternal warmth and temperamental reactivity (at T1) were controlled. By doing that, the possibility that the longitudinal relationship between maternal warmth (T1) and child's reactivity (T2) might be due to the high correlation between maternal parenting and child's reactivity at T1 was ruled out. Consequently, higher levels of maternal warmth when

children were 4 years old predicted declines in children's temperamental reactivity at age 6 with autoregressive controls.

Regarding the direction of the relationship between parenting practices and children, some studies have maintained that child's temperament predicted parents' subsequent attitudes. Lengua and Kovacs (2005) have shown that child irritability predicted subsequent maternal inconsistent discipline while child fearfulness and positive affectivity predicting later maternal acceptance. On the other hand, a growing number of studies have supported the opposite direction in that earlier parenting practices shaped the expression of children's temperamental characteristics subsequently (Blandon et al., 2010; Perry et al., 2013). The current study provided further support for the latter showing that the direction of the relationship between parenting practices and child's temperament is from parents to children. Besides revealing a direction, this finding also implies that expression of temperamental characteristics can be altered by early maternal child rearing practices.

Although temperament has been assumed to be relatively stable, there is compelling evidence showing that the expression of temperament can be modified by numerous contextual and experiential factors. It has also been emphasized that rank order positions of individuals on temperament change considerably as a result of growth and maturation (Bates & Pettit, 2015; Blandon et al., 2010; Rothbart & Bates, 2006). The expression of negative emotionality as well as positive emotionality, for instance, may change over time as a result of maturational changes in the brain, cognition and motor abilities which enhance young children's self-regulatory skills. (Bates & Pettit, 2015; Blandon et al., 2010). Beside maturational changes, preschool children experience changes in their daily contexts such as starting school where they need to learn adaptive ways of emotion regulation. In support of malleability of temperamental characteristics, Blandon et al. (2010) have shown that, levels of negative affectivity and surgency (positive affectivity) have declined from age 4 to 7. Given

that early childhood is a time when children experience maturational and biological changes which allow them to better regulate their positive and negative emotionality, the decline in reactivity and surgency over time is a normal developmental pattern.

However, it is also important to note that for young children, parenting behavior have significant implications on the way children express their temperamental characteristics such as reactivity (Blandon et al., 2010). Although ordinary practices of parents may not be able to impact genetic underpinnings of temperamental characteristics, they could play a significant role in the behavioral phenotypes. For instance, some children may be predisposed to experience high intensity emotions more than the others which is explained by individual differences in temperament. Even though, this predisposition could not be changed completely, it could be altered by parenting practices in a variety of ways. Accumulated evidence has indicated that parental warmth, responsiveness, punitiveness, negative and directive strategies were closely linked with the changes in young children's reactivity including negative and positive affectivity and effortful control (Bates & Pettit, 2015; Blandon et al., 2010; Chang et al., 2003; Chang et al., 2011; Eisenberg et al., 2005b). Cunningham et al. (2009) emphasized the role of parental warmth in promoting children's ability to attend their parents' messages which then allows children to internalize and effectively perform regulatory skills in the face of emotionally challenging situations. Oppositely, parents' use of punitive strategies may damage children's regulatory capacities, through stimulating intense emotional arousal, or directly modeling them emotion dysregulation (Power, 2004). Consequently, children who are not able to adaptively regulate their emotional states fail to manage their arousal, which then renders them experiencing aggression or impulsivity in the face of challenging situations (Chang et al., 2011). Thus, parents can alter the expression of certain temperamental characteristics such as negative

emotionality and surgency by assisting children to gain adaptive regulatory skills, and teaching them the ways which are useful for coping with emotional arousal.

The current study provided an ample support for this view revealing that high maternal warmth when children were 4 might equip children with adaptive skills of regulating their reactivity, thus, alleviating it when they were 6. However, contrary to a growing body of studies in Western cultures indicating that harsh, punitive, and controlling parenting predict increases in emotionality and hinders children's regulatory skills (Blandon et al., 2010), in the current study, earlier maternal punishment was not able to predict any of the temperamental characteristics over time. This might be due to the mean level differences between maternal warmth and punishment in that, in Turkish sample, mothers did not use punishment so frequently, they may rather be characterized as warm and responsive. Thus, the effects of maternal warmth may have overridden that of maternal punishment in this particular sample. Furthermore, as previously reviewed, parental control, punishment, and obedience demanding of Turkish parents occurs in a family environment characterized by mutual emotional attachment (Sunar & Fişek, 2005). In this sense, maternal punishment which has already been infrequent in this sample may be further balanced by maternal warmth, thus, was not be able to affect children's subsequent reactivity or approach.

Another significant but striking cross-lagged path was from children's reactivity to approach indicating that high reactivity at age 4 predicted increases in children's approach tendencies at age 6. Given that autoregressive path for reactivity was also significant, children who were high in reactivity when they were 4 remained reactive at age 6 but at the same time they have become highly approaching, as well. There has been a line of research indicating that approach was included within surgency dimension of temperament, thus, it may be closely related to positive affectivity, high intensity pleasure, and high levels of activity. Moreover, surgency has been considered as one of the two dimensions of temperamental

reactivity (the other one is negative affectivity) (Blandon et al., 2010; Rothbart et al., 2001). The assumption that temperamental approach constitutes one sub dimension of temperamental reactivity may account for significant cross-lagged path from children's reactivity at age 4 to approach at age 6.

Another approach to reactivity has assumed that two of the most fundamental dimensions of reactivity were approach and avoidance behaviors in which children display in the face of novel, unfamiliar, and challenging situations (Carver, 2004; Dennis, 2006). As previously defined, approach characterizes one's sensitivity to rewards, high levels of exuberance, and approach towards pleasurable and novel activities while avoidance refers to sensitivity towards possible threats, fearfulness, anxiety, and behavioral withdrawal in the face of novelty (Carver, 2004). Approach reactivity, in this sense, characterizes one's sensitivity to rewards, high excitement, appreciation of high stimulation, positive affect toward pleasurable activities, and behavioral approach to novel stimuli. Thus, it may be related to difficulties in effortful control and to impulsivity, and may also be linked with frustration and aggression in reward salient situations (especially when children's goals are blocked) (Calkins & Fox, 2002, Kochanska et al., 2007; Putnam, 2012). In accord with this line of research, in the current study, children who were highly reactive at age 4 and later at age 6 might also be approaching at age 6, but have hard times regulating their affect (both positive and negative) when their goals were hindered or when they were not able to get reward. Following this logic, higher levels of reactivity may longitudinally predict approach tendencies of children as it did in the current study.

4.3 Longitudinal Relations among Maternal Child-Rearing Practices, Temperament, and Externalizing and Internalizing Problems - Hypotheses 2, 3, 4, and 5

4.3.1 Longitudinal Mediational Model without Controlling T2 Behavior Problems

The longitudinal mediational models were designed to reveal if maternal practices of warmth and punishment at T1 would predict their externalizing and internalizing problems at T3 through its' link with children's approach and reactivity at T2. The longitudinal mediational model was first tested without controlling prior levels of behavior problems (at T2). As stated previously, family SES was controlled on maternal warmth and punishment. In line with the previous literature, SES was considerably influential on both maternal warmth and punishment at T1 such that the lower the family SES, the lower the maternal warmth, and the higher the maternal use of punishment (Straus & Stewart, 1999). Only hypothesis 3 was supported in the model such that when T2 behavior problems were not controlled, higher levels of maternal warmth when children were 4 was able to predict declines in children's reactivity at age 6, and lower levels of reactivity then alleviated the risk for later externalizing and internalizing problems in the first grade (at age 7). Moreover, a significant indirect path from maternal warmth to externalizing problems was obtained. More precisely, children's reactivity was fully mediated the longitudinal relationship between maternal warmth and externalizing problems since the direct path from maternal warmth to externalizing problems was not significant.

A growing number of studies in Western samples of children have documented that earlier sensitive, responsive, and warm parenting predicted declines in children's subsequent negative reactivity even after prior levels were controlled (Bates et al., 2012). Braungart-Rieker, Hill-Soderlund, and Karrass (2010), for instance, have indicated that sensitive parenting predicted slower increases in infants' fear reactivity from 4 to 16 months. Reactivity, in turn, has been documented to predict an array of adjustment problems including externalizing and internalizing problems (Hubbard et al, 2002; Fox et al., 2001). It is important to note that majority of studies supporting mediational relationship among parenting, child's temperament and behavior problems have mainly focused on effortful

control as mediator. Indeed, effortful control as higher order cognitive system functions as a modulator of reactivity through executive control of emotions, behaviors and attention, and by activating or inhibiting a particular emotional, motor or physiological response (Rothbart et al., 2001; Rothbart & Bates, 2006). Reactivity and effortful control (used interchangeably with self-regulation) which have been assumed to represent two major dimensions of temperament (Rothbart & Bates, 2006) have often studied together (Gartstein et al., 2012). In the current study, since they were closely related to effortful control, temperamental approach, as a relatively understudied trait, and reactivity have been addressed as their critical roles on young children's behavior problems were considered (Eisenberg et al., 2005a; Gartstein et al., 2012).

Notably, preschool and early school years are marked by significant changes in regulatory aspect of temperament, namely, effortful control (Rothbart et al., 2011). It is also important to emphasize that the effects of positive parenting on children's effortful control and regulatory skills are even more pronounced during earlier years of childhood when parents are more dominant socializers in the lives of children than other socializing agents (Eisenberg et al., 2005b). Accordingly, previous literature has lent an ample support for the view that parental warm responding has been directly related to the intensity to which children experience negative and positive emotions and the way they regulate these emotional experiences (Chang et al., 2011; Cunningham et al., 2009; Eisenberg et al., 2001; Eisenberg et al., 2010; Sulik, Blair, Mills-Koonce, Berry, & Greenberg, 2015). According to these studies, children whose parents' warm and sensitive raise children who were better at regulating their own affective states (e.g., anger and frustration). Children who were successfully regulating their emotional arousal, in turn, were less likely to develop behavior problems (Eisenberg et al., 2005b). Likewise, the current study further emphasized the significant direct and indirect

contributions of maternal warmth on young children's subsequent temperamental reactivity, self-regulation, and externalizing problems.

Even though, direct effects of positive parenting including parental warmth and support on children's behavior problems in early childhood have been evidenced by a great deal of studies in Western samples (Bayer et al., 2006; Denham et al., 2000; McLeod et al., 2007a; McLeod et al., 2007b), the current study did not find such a direct association between positive parenting and behavior problems. In Turkish sample, positive maternal parenting may not be able to predict changes in children's subsequent behavior problems by itself, children's dispositional characteristics (e.g., reactivity) may be actively involved in the process in which maternal warmth predicted children's subsequent behavior problems.

Moreover, in the current study, children's approach did not mediate the link between maternal warmth and later behavior problems as hypothesized in the current study. In fact, there is not much research investigating parental influence on children's behavior problems through children's approach tendencies or positive emotionality (Bates & Pettit, 2015). There have been studies showing the impact of positive parenting practices on children's surgency/positive affectivity. As one example, Blandon and her colleagues have maintained that maternal warmth and responsiveness predicted declines in preschool children's surgency across early childhood (Blandon et al., 2010). However, Turkish mothers' warm responding had no direct influence on children's approach tendencies in the current study.

Moreover, in the model where initial levels of behavior problems were not controlled, maternal punishment when children were 4 did directly predict externalizing problems at age 7. Direct link between parental punishment and externalizing behaviors has been evidenced by a large body of previous research (Demirkaya & Abalı, 2013; Gershoff, 2002; Mulvaney & Mebert, 2007). The power assertive practices of parents, particularly corporal punishment, have been found to be linked with elevated levels of disruptive behaviors (especially

aggression) through a variety of ways; by directly modelling aggression or by reinforcing hostile attributions by parents and children which gives rise to coercive relationship between parents and children (Chang et al., 2003; Gershoff, 2002). However, the longitudinal relationship between maternal punishment and externalizing problems was not mediated by any of the temperamental characteristics at age 6. This was, indeed, not in line with the previous line of research from Western samples. Chang et al. (2011), for instance, have documented that for young boys, parental use of corporal punishment indirectly predicted children's externalizing problems three years later through child effortful control. Likewise, both mothers and fathers harsh parenting disrupted school age children's effective emotion regulation, which was eventually associated with higher levels of aggression in school environment. To note, while mothers harsh parenting affected children's emotion regulation more strongly than fathers, fathers' harsh parenting had stronger effect on children's (especially boy's) aggression (Chang et al., 2003).

Lastly, higher levels of children's temperamental approach at age 6 longitudinally predicted lower levels of internalizing problems at age 7. Sociability or affiliation aspects of positive affectivity which are related to low intensity pleasure in interpersonal relationships have been assumed to assist children in acquiring adaptive self-regulatory skills which are essential in social relationships, thus, somewhat protects them against internalizing difficulties, particularly depression (Putnam, 2012). In accordance with this assumption, Yavuz et al. (2016) reported that higher levels of exuberance in non-novel situations predicted lower levels of internalizing problems in preschool children.

4.3.2 Longitudinal Mediational Model with controlling T2 Behavior Problems

The longitudinal mediational model was tested for the second time with controlling initial levels of externalizing and internalizing problems (at age 6). This model did not even fit the data sufficiently, and almost all the significant paths occurred in the first test of the

model (without controlling initial levels of behavior problems) have disappeared (expect the direct path from maternal warmth at T1 to children's reactivity at T2). As shown by previous studies, parent's SES has appeared to be a significant precursor of maternal practices in this model, as well (Pinderhughes et al., 2000; Straus & Stewart, 1999). Even though model fit was poor, maternal warmth at T1 was still able to predict lower levels of reactivity at T2. However, maternal warmth did neither directly nor indirectly predict externalizing and internalizing problems, thus children's temperamental characteristics did not appear to be the mediator, in this model.

One reasonable explanation that might account for poor model fit after controlling T2 behavior problems was considerable stability of behavior problems from age 6 to 7. It has been strongly emphasized that during preschool and early school years, individual differences in adjustment patterns have become well-established and better predicted persistence of behavior problems into middle childhood to adolescence (Campbell, 1995; Mesman et al., 2003; Mesman & Koot, 2001; Neece et al., 2012). Campbell (1995) further emphasized that although overall levels of behavior problems show declines across childhood, children's rank order does not change much. A handful of studies suggested that several genetic and environmental factors such as parent's rearing practices including lack of warmth and poor monitoring, and family adversity (e.g., ongoing marital conflict) may contribute to the stabilization of behavior problems across early childhood (Campbell, 1995; Denham et al., 2000). Parental anger, for example, has been found to predict the stability of externalizing problems over time (Denham et al., 2000). Notably, behavior problems have been asserted to rather persist in the context of ongoing parental negativity and family adversity (Campbell, 1995). In the current study all the autoregressive paths for maternal practices and children's temperamental characteristics were found to be significant in autoregressive cross-lagged model. More clearly, strong stability of externalizing and internalizing problems from age 6 to

7 may be explained by stable maternal practices and temperamental characteristics of children over time.

Overall, the results of the current study revealed the nature of longitudinal relationship between Turkish mothers' warmth and punishment, and children's temperamental characteristics of approach and reactivity. Earlier maternal warmth, but not punishment was found to be influential on Turkish preschool children's reactivity. Likewise, in the longitudinal model (without controlling T2 behavior problems), only maternal warmth was able to predict children's reactivity, which in turn, predicted externalizing and internalizing problems of children which was in line with the findings from Western research. Maternal punishment only directly predicted children's externalizing problems which was also in accordance with previous studies. However, this finding should be interpreted with caution since in the second test of the longitudinal mediational model where behavior problems at age 6 were controlled the mediational relationship has disappeared, only maternal warmth at T1 predicted declines in children's reactivity at T2.

4.4. Strengths and Limitations

Overall, results from three structural equation models indicated the longitudinal directional relationship from maternal parenting to children's temperament and favored both relative and joint contributions of maternal child-rearing and temperament to young children's behavior problems longitudinally. Furthermore, the current study revealed a mediational model which highlighted the mechanism through which maternal warmth were longitudinally related to Turkish children's externalizing problems during preschool to early school years when initial levels of behavior problems were not controlled. Although most researchers have examined direct effects, it has been recently recognized that indirect, mediated relations may underlie what seems to be direct effects (Paulussen-Hoogeboom et al., 2008). In line with this, the current study also investigated both direct and indirect relations among maternal

parenting, child's temperament, and externalizing and internalizing problems during preschool and early school years. Although a number of studies examining the relations between Turkish parents' practices, young children's dispositional characteristics, and adjustment outcomes have been growing in number, longitudinal nature of the current study provided a clearer picture illustrating how these variables came to be related with each other across early childhood.

It has been strongly emphasized that parenting practices are culturally-bounded, and parent's own cultural value systems and attitudes are reflected onto their parenting practices. Thus, parenting practices must be evaluated within the context of culture (Kagitcibasi, 2007; Maccoby & Martin, 1983; Sumer et al., 2010). In line with this consideration, the current study reveal Turkish parent's cultural patterns of child-rearing and how it is related to child outcomes across early childhood. Moreover, Sumer et al. (2010) indicated that studies on Turkish parent's child rearing practices have focused more on adolescents, college students, and adults while those focusing on preschooler and school-aged children were relatively scant. The current study concentrated on practices of mothers whose children were at preschool, and early school period, and further shed light on how Turkish mother warmth and punishment direct and indirectly related to young children's temperament and behavior problems.

The current study had a number of limitations, as well. Although it was a longitudinal study, it had relatively high levels of attrition rates across three waves. Notably, children who retained at T2 and those who withdrew significantly differed on mother's years of education and maternal punishment. Accordingly, mothers of children who retained have higher levels of education, but endorsed more punishment than those who withdrew. With regard to attrition from T1 to T3, children who retained significantly differed from those who withdrew on mother's years of education, father's years of education, and maternal punishment. Both

mothers and fathers of children who retained had higher levels of education and mothers of these children used punishment to a lesser extent. Consequently, children who continued to participate in the study across 3 waves were systematically different from those who withdrew on a number of variables which may pose a threat for the variability in the sample and make conclusions drawn from the study erroneous.

Some methodological issues must be underlined as limitations of the current study. Firstly, maternal child-rearing practices, child's temperament, and externalizing and internalizing problems were all measured by utilizing maternal reports. Particularly in the current years, fathers have taking an active role in child-rearing in this sense, they are eligible to report on temperamental characteristics, and behavior problems of their children (Karreman et al, 2010). In fact, the same parenting practice performed by father vs mother may have differential consequences on child's part. To illustrate, Chang et al. (2003) have maintained that maternal harsh parenting had an emotional influence while paternal harsh parenting had a rather behavioral effect on children. Moreover, mothers and fathers may bear distinct duties in child socialization such that traditionally fathers undertake disciplinary duties while mothers take on the role of caregiving (Chang et al., 2003; Karreman et al., 2010) Consequently, paternal report of children's characteristics, emotions and behaviors carries an even greater value today than it does in the past.

The child characteristics, particularly temperament, have been assessed primarily by using parent questionnaires since researchers have been interested in parental perception. Although parental measures of child characteristics have appeared to be valid measures since they were highly converged with observational measures (Rothbart & Bates, 1998; Paulussen-Hoogeboom et al., 2008), in some instances parent's report may be biased. Using only maternal reports on children's temperament and behavior problems may be one of the limitations of the current study. Another limitation was that none of the children in the current

sample was manifesting externalizing and internalizing problems in clinical range. That's why, findings may not be generalizable to the samples whose behavior problems were in clinical range.

4.5 Future Directions

Future studies may also include fathers, and utilize paternal reports of child behavior and outcomes, as well as maternal reports. Given that grandparents have an important place in children's socialization in Turkish culture (Sumer et al., 2010), even their reports on child characteristics may be obtained in the future studies. Moreover, despite it is complexity in longitudinal designs, utilizing observational measures as well parental reports might help making more accurate and objective conclusions on the pattern the relationship among parenting, child characteristics, and outcomes. Additionally, using more than one type of assessment may allow tapping all aspects of a construct such as child's temperament adequately. Thus, future studies may consider using observational methods as well as parental reports while examining child characteristics and adjustment outcomes.

Also, in the current study, longitudinal mediational relationship between maternal warmth and children's reactivity and externalizing problems was acquired only when behavior problems at age 6 were not controlled. When initial levels of behavior problems were controlled, this mediational relationship has disappeared. This finding may indicate a large amount of variability in behavior problems at age 7 may be explained by behavior problems at age 6. Following this logic, behavior problems may be considerably stable from age 6 to 7. This may implicate an important direction for future studies that could examine stability of behavior problems in young children with assessments at multiple time points. Furthermore, previous studies have revealed a number of genetic and environmental factors such as family adversity that might account for the persistence of behavior problems in childhood (Campbell, 1995; Denham et al., 2000). Future studies may aim to discover the

factors related to the stability of behavior problems and to reveal the mechanisms through which these factors predict persistence of behavior problems across early childhood.

4.6 Implications

The current study may have several implications, as well. First, it challenged the idea that temperament is unchangeable and further supported the view that temperamental characteristics are malleable. It indicated that temperamental negativity (e.g., high levels of reactivity) may be lessened by parents warm responding. Parental warmth may help children to better regulate their negative as well as positive emotional states, and to be able to internalize socially appropriate rules of conduct which, in turn, make children less vulnerable to externalizing and internalizing problems. This study also emphasized the complex nature of development where both parents and children actively shape each other's behaviors. In this sense, it could also inform prevention and intervention attempts by revealing that efforts should be directed at both parents and children. Lastly, the current study further supported the view that preschool and early school years are when children undergo maturational changes and acquire several important skills such as affect regulation, thus, remarkably significant to imply prevention/intervention.

APPENDIX A

ÇOCUK YETİŞTİRME ANKETİ

(Child-Rearing Questionnaire) maddeler, çocuk yetiştirmeye ait bazı durumları anlatmaktadır. Lütfen her bir ifadeyi dikkatlice okuyunuz ve bu ifadelerin size ne kadar uyduğunu 1'den (hiç bir zaman) 5'e (her zaman) kadar rakamlarla gösterilen ölçek üzerinde değerlendiriniz. Doğru veya yanlış cevap yoktur. Amacımız, yanlızca annelerin çocuk yetiştirme konusundaki düşüncelerini öğrenmektir. Lütfen her bir maddeye olabildiğince içtenlikle cevap veriniz

	Hiç Bir Zaman	Çok Seyrek	Bazen	Çoğu Zaman	Her Zaman
1. Çocuğumun kendisine söyleneni açıklamasız yapmasını beklerim. **(itaat bekleme)**	1	2	3	4	5
2. Tokat atmanın, çocuğumun daha iyi davranmasını sağlayacak iyi bir yol olduğunu düşünüyorum. **(cezalandırma)**	1	2	3	4	5
3. Çocuğum korkmuş ya da üzüntülü olduğu zaman, onu rahatlatır ve ona anlayışlı davranırım. **(sıcaklık)**	1	2	3	4	5
4. Çocuğumun, cezalandırılma veya kısıtlanma konusunda duygularını ifade etmesine izin veririm. **(itaat bekleme)**	1	2	3	4	5
5. Çocuğuma disiplin verirken, onu beş dakikalığına odaya gönderirim. (**itaat bekleme)**	1	2	3	4	5
6. Çocuğuma sevgimi, onu kucaklayarak, öperek ve sarılarak ifade ederim. **sıcaklık)**	1	2	3	4	5
7. Çocuğumun, anne ve babasına sorgusuz itaat etmesini beklerim**. (itaat bekleme)**	1	2	3	4	5
8. Çocuğumun davranışını kontrol etmek için ona tokat atar veya vururum. **(cezalandırma)**	1	2	3	4	5
9. Belirli bir neden olmaksızın, çocuğumu kucaklar veya sarılırım. **(sıcaklık)**	1	2	3	4	5
10. Çocuğuma, davranışlarının sonuçlarını açıklarım**. (açıklayıcı akıl yürütme)**	1	2	3	4	5
11. Çocuğum olmadan bir yerlere gitmeyi veya bir şeyler yapmayı tercih ederim. **Reverse (sıcaklık)**	1	2	3	4	5
12. Çocuğuma disiplin verirken, ona bağırırım. **(cezalandırma)**	1	2	3	4	5
13. Çocuğuma bazı şeylerin neden gerekli olduğunu açıklamaya çalışırım. **(açıklayıcı akıl yürütme)**	1	2	3	4	5
14. Çocuğuma, onun beni ne kadar mutlu ettiğini söylerim. **(sıcaklık)**	1	2	3	4	5
15. Çocuğuma disiplin verirken, az açıklama yaparak veya hiç açıklama yapmadan, onu odasına gönderirim. **(itaat bekleme)**	1	2	3	4	5
16. Çocuğumun, kendisine söyleneni tartışmasız yapmasını isterim. **(itaat bekleme)**	1	2	3	4	5

17. Çocuğumla benim, sıcak ve çok yakın olduğumuz anlar vardır. **(sıcaklık)**	1	2	3	4	5
18. Yanlış davrandığı zaman, çocuğuma tanıdığım ayrıcalıkları geri alırım. **(cezalandırma)**	1	2	3	4	5
19. Çocuğumu dinlemek ve onunla bir şeyler yapmaktan zevk alırım. **(sıcaklık)**	1	2	3	4	5
20. Çocuğuma, kurallara neden uyması gerektiğini açıklarım. **(açıklayıcı akıl yürütme)**	1	2	3	4	5
21. Canımı sıktığı zaman, kendimi ondan uzaklaştırırım. **(cezalandırma)**	1	2	3	4	5
22. Çok kötü davrandığında, çocuğuma fiziksel ceza veririm; örnek, tokat atarım. **(cezalandırma)**	1	2	3	4	5
23. Çocuğuma, neden cezalandırıldığını veya kısıtlandığını açıklarım. **(açıklayıcı akıl yürütme)**	1	2	3	4	5
24. Çocuğumu kucaklamayı ve öpmeyi severim. (**sıcaklık)**	1	2	3	4	5
25. Fiziksel cezalandırmanın, çocuğumu disipline sokmada en iyi yol olduğuna inanırım. **(cezalandırma)**	1	2	3	4	5
26. Çocuğuma, kuralların nedenini açıklarım. **(açıklayıcı akıl yürütme)**	1	2	3	4	5
27. Çocuğum mutlu olduğunda da, endişeli olduğunda da kendimi ona yakın hissederim. **(sıcaklık)**	1	2	3	4	5
28. Çocuğum itaatkar davranmadığı zaman, ona tokat atarım. **(cezalandırma)**	1	2	3	4	5
29. Çocuğum, yanlış davrandığı zaman, onunla mantıklı bir şekilde konuşur ve olayın üzerinden geçerim. **(açıklayıcı akıl yürütme)**	1	2	3	4	5
30. Çocuğumla şakalaşır ve oyun oynarım. **(sıcaklık)**	1	2	3	4	5

APPENDIX B

ÇOCUKLAR İÇİN KISA MİZAÇ ÖLÇEĞİ

Her soru için, çocuğunuzun <u>son zamanlardaki</u> ve <u>şimdiki</u> davranışını en iyi anlatan numarayı lütfen yuvarlak içine alınız. Sorulardan hiçbiri çocuğunuza uymuyorsa veya cevaplanamazsa üzerini çiziniz.

	Hemen Hiç	Sık Değil	Değişken, Genelde Olmaz	Değişken Genelde Olur	Sık Sık	Hemen Her Zaman
1. Çocuğum, yabancı yetişkinlere karşı utangaçtır. **(sıcakkanlılık-utangaçlık) R**	1	2	3	4	5	6
2. Çocuğum bulmaca çözmek veya yap-boz (lego) gibi bir işe başladığında uzun zaman alsa bile bitirinceye kadar üzerinde çalışır**. (sebatkarlık)**	1	2	3	4	5	6
3. Çocuğum her gün, hemen hemen aynı zamanda kakasını yapar. **(ritmiklik)**	1	2	3	4	5	6
4. Çocuğum ilk defa tanıştığı çocuklara karşı utangaçtır. **(sıcakkanlılık-utangaçlık) R**	1	2	3	4	5	6
5. Çocuğum, yeni bir işe geçmeden önce başlamış olduğu işini tamamlamayı sever. **(sebatkarlık)**	1	2	3	4	5	6
6. Çocuğum her gün, hemen hemen aynı zamanda bir şeyler atıştırmak ister. **(ritmiklik)**	1	2	3	4	5	6
7. Çocuğum bir işle uğraşırken, üzüldüğü ya da canı sıkıldığında, onu yere atar, ağlar, kapıları çarpar. **(tepkisellik)**	1	2	3	4	5	6
8. Alışveriş yaparken, çocuğum oyuncak ya da şeker istediğinde, onun yerine kolayca başka bir şeyi kabul eder. **(tepkisellik) R**	1	2	3	4	5	6
9. Çocuğumu yatağa yatırdığımda, uykuya dalması aşağı yukarı her gece aynı zamanı alır. **(ritmiklik)**	1	2	3	4	5	6
10. Çocuğum, tamamlamadığı bir oyunu ya da aktiviteyi bırakmayı istemez. **(sebatkarlık)**	1	2	3	4	5	6
11. Çocuğum saçının taranması gibi bir işe karşı çıkarsa, buna aylarca direnmeyi sürdürür. **(tepkisellik)**	1	2	3	4	5	6
12. Çocuğum, bulmaca, yap-boz ve okuma gibi bir aktiviteyle uzun zaman uğraşır**. (sebatkarlık)**	1	2	3	4	5	6
13. Parkta ya da ziyaretteyken, çocuğum yabancı çocukların yanına gider ve onların oyununa katılır. **(sıcakkanlılık-utangaçlık)**	1	2	3	4	5	6
14. Çocuğum, her akşam farklı süreler uyur. **(ritmiklik)**	1	2	3	4	5	6
15. Çocuğum yabancı bir yetişkine karşı utangaçsa, bunun üstesinden yarım saat kadar bir sürede, hemen gelir. **(sıcakkanlılık-utangaçlık)**	1	2	3	4	5	6

16. Çocuğum bir şeye kızgınsa, bunu geçiştirmek zor olur. **(tepkisellik)**	1	2	3	4	5	6
17. Çocuğum, her gün farklı zamanlarda acıkır. **(ritmiklik) R**	1	2	3	4	5	6
18. Ailece yolculuğa çıktığımızda, çocuğum yeni ortamına hemencecik, evindeymiş gibi alışır. **(sıcakkanlılık-utangaçlık)**	1	2	3	4	5	6
19. Beraber alışveriş yaparken, çocuğumun istediğini almazsam (örnek: şeker, giysi gibi) ağlar ve bağırır. **(tepkisellik)**	1	2	3	4	5	6
20. Çocuğum üzüntülü ise, onu rahatlatmak zordur**. (tepkisellik)**	1	2	3	4	5	6
21. Yabancı yetişkinler evimizi ziyaret ettiğinde, çocuğum hemen dostça davranır ve onlara yaklaşır. **(sıcakkanlılık-utangaçlık)**	1	2	3	4	5	6
22. Çocuğum, her gün aynı miktarda yemek yeme yerine, bir gün fazlasıyla, ertesi gün de çok az yemek yer**. (ritmiklik) R**	1	2	3	4	5	6
23. Bir oyuncak ya da oyun zor geldiği zaman, çocuğum hemen başka bir aktiviteyle ilgilenir**. (sebatkarlık) R**	1	2	3	4	5	6
24. Sevdiği bir oyun ya da oyuncağı çalışmadığı zaman, çocuğum belirgin şekilde üzülür. **(tepkisellik)**	1	2	3	4	5	6
25. Çocuğum bir kıyafeti giymek istemediğinde, bağırarak tartışır ya da ağlar. **(tepkisellik)**	1	2	3	4	5	6
26. Hafta sonu ve tatillerde, çocuğum her sabah aynı saatte uyanır. **(ritmiklik)**	1	2	3	4	5	6
27. Çocuğum bir şeyi iyice öğreninceye kadar (bulmaca, yeni şarkı veya yazmak gibi), o işin üzerinde çalışır. **(sebatkarlık)**	1	2	3	4	5	6
28. Çocuğum, annesinin olmadığı yeni bir ortama (yuva, okul ya da müzik dersi gibi) ilk kez bırakıldığı zaman, üzülür. **(sıcakkanlılık-utangaçlık) R**	1	2	3	4	5	6
29.Çocuğum bir şeyle oynamaya başladığında, bunu durdurmasını isteyip uğraşsam da zor olur**. (tepkisellik)**	1	2	3	4	5	6
30. Çocuğum, kitap okumak ya da kitaplara bakmak ve el işi yapmak gibi sessiz aktivitelerle uğraşır**. (sebatkarlık)**	1	2	3	4	5	6

APPENDIX C

CBCL 1.5-5 / ANNE FORMU

Aşağıda çocukların özelliklerini tanımlayan bir dizi madde bulunmaktadır. Her bir madde **çocuğunuzun şu andaki ya da son 6 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.

LÜTFEN TÜM MADDELERİ YANITLAYINIZ. SİZİ KAYGILANDIRAN MADDELERİN ALTINI ÇİZİNİZ.

0: Doğru Değil (Bildiğiniz kadarıyla) 1: Bazen ya da Biraz Doğru 2: Çok ya da Sıklıkla Doğru

0 1 2 1. Ağrı ve sızıları vardır (tıbbi nedeni 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, herşeyin 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. Kabızdır, kakasını kolay yapamaz (hasta değilken bile).
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. Ailesine ait eşyalara zarar verir.
0 1 2 19. Hasta değilken bile ishal olur, kakası yumuşaktır.
0 1 2 20. Söz dinlemez, kurallara uymaz.
0 1 2 21. Yaşam düzenindeki en ufak bir değişiklikten rahatsız olur.
0 1 2 22. Tek başına uyumak istemez.
0 1 2 23. Kendisiyle konuşulduğunda yanıt vermez.
0 1 2 24. İştahsızdır (açıklayınız)……. .....
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. Evden dışarı çıkmak istemez.
0 1 2 29. Güçlükle karşılaştığında çabuk vazgeçer.
0 1 2 30. Kolay kıskanır.
0 1 2 31. Yenilip içilmeyecek şeyleri yer ya da içer- (kum, kil, kalem, silgi gibi)- (açıklayınız)…….....
0 1 2 32. Bazı hayvanlardan, ortamlardan ya da yerlerden korkar (açıklayınız) ….....
0 1 2 33. Duyguları kolayca incinir.
0 1 2 34. Çok sık bir yerlerini incitir, başı kazadan kurtulmaz.
0 1 2 35. Çok kavga dövüş eder.

Lütfen arka sayfaya geçiniz

0: Doğru Değil (Bildiğiniz kadarıyla) 1: Bazen ya da Biraz Doğru 2: Çok ya da Sıklıkla Doğru

0 1 2 36. Her şeye burnunu sokar.
0 1 2 37. Anne-babasından ayrıldığında çok tedirgin olur.
0 1 2 38. Uykuya dalmada güçlük çeker.
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. Düşünmeden, insanlara ya da hayvanlara zarar verir.
0 1 2 43. Hiçbir neden 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).....
0 1 2 47. Sinirli ve gergindir.
0 1 2 48. Gece kabusları vardır, korkulu rüyalar görür.
0 1 2 49. Aşırı yemek yer.
0 1 2 50. Aşırı yorgundur
0 1 2 51. Hiçbir neden yokken panik yaşar.
0 1 2 52. Kakasını yaparken ağrısı acısı olur.
0 1 2 53. Fiziksel olarak insanlara saldırır, onlara vurur.
0 1 2 54. Burnunu karıştırır, cildini ya da vücudunun diğer taraflarını yolar (açıklayınız)…….....
…….....
0 1 2 55. Cinsel organlarıyla çok fazla oynar.
0 1 2 56. Hareketlerinde tam kontrollü değildir, sakardır.
0 1 2 57. Tıbbi nedeni olmayan, görme bozukluğu dışında göz ile ilgili sorunları vardır (açıklayınız)…….....
0 1 2 58. Cezadan anlamaz, ceza, davranışını değiştirmez.
0 1 2 59. Bir uğraş ya da faaliyeti bitirmeden 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. Gece yatağına gitmemek için direnir.
0 1 2 65. Tuvalet eğitimine karşı direnir (açıklayınız)……
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, şefkat 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.

Lütfen arka sayfaya geçiniz

0: Doğru Değil (Bildiğiniz kadarıyla) 1: Bazen ya da Biraz Doğru 2: Çok ya da Sıklıkla Doğru

0 1 2 74. Gece ve gündüz çocukların çoğundan daha az uyur.

0 1 2 75. Kakasıyla oynar ve onu etrafa bulaştırır (açıklayınız)…….….

0 1 2 76. Konuşma sorunu vardır (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. Üzgünken birden neşeli, neşeli iken birden üzgün olabilir.

0 1 2 80. Yadırganan, tuhaf davranışları vardır (açıklayınız)…….…....

…….……

0 1 2 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. Uykusunda konuşur, ağlar, bağırır.

0 1 2 85. Öfke nöbetleri vardır, çok çabuk öfkelenir korkar (açıklayınız)……. …….……....

0 1 2 86. Temiz, titiz ve düzenlidir.

0 1 2 87. Çok korkak ve kaygılıdır.

0 1 2 88. İşbirliği yapmaz.

0 1 2 89. Hareketsiz ve yavaştır, enerjik değildir.

0 1 2 90. Mutsuz, üzgün, çökkün ve keyifsizdir (açıklayınız)……... .....

0 1 2 91. Çok gürültücüdür.

0 1 2 92. Yeni tanıdığı insanlardan ve durumlardan çok tedirgin olur.

0 1 2 93. Kusmaları vardır (tıbbi nedeni olmayan)……..……

0 1 2 94. Geceleri sık sık uyanır.

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. Çocuğunuzun burada değinilmeyen başka sorunu varsa lütfen yazınız

.....

.....

Duygusal Tepki: 21,46,51,79,82,83,92,97,99

Kaygılı/Depresif : 10,33,37,43,47,68,87,90

Bedensel Şikayetler: 1,7,12,19,24,39,45, 52,78,86,93,

İçe kapanıklık: 2,4,23,62,67,70,71,98

Uyku Problemleri: 22,38,48,64,74,84,94

Dikkat Problemleri: 5,6,56,59,95

Saldırgan Davranış: 8,15,16,18,20,27,29,35, 40,42,44,53,58,66,69,81,85,88,96

Diğer Problemler: 3,9,11,13,14,17,25,26,28,30, 31,32,34,36,41,49,50,54,55,57,60, 61,63,65,72,73, 75,76,77,80,89,91,100

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