Family Influences on School Readiness in a Turkish Sample

by

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ABSTRACT

This study aims to examine the influence of family factors on children's school readiness in Turkish culture. School readiness, conceptualized as children's cognitive, behavioral and social-emotional competencies, is considered as an essential predictor of children's school adjustment and achievement in the following school years. The study encapsulated the developmental context of children with family factors, i.e. the education level of parents, the economic status of the families, the support of extended family members, the support received from spouse, and the parenting behaviors, to predict children's domain specific readiness outcomes and the composite readiness both at the interview prior to school entry, and at 66 month interview. The longitudinal data regarding mother-child dyads of the project, Early Childhood Developmental Ecologies in Turkey (ECDET), were used in this thesis. The demographic characteristics and support resources were selected from the first wave of data collection; the stimulating, responsive, and punishing parenting were selected from the second wave of data collection; and children's readiness outcomes were selected from second, third, or fourth wave of data collection, on the basis of children's time of school entry, or age closest to 66 months. The results indicated that (i) family factors were associated with children's composite readiness scores directly or indirectly; (ii) maternal and paternal level of education had direct and indirect associations with children's domain specific readiness and composite readiness for school; (iii) family economic status and stimulating parenting appeared as the most significant contributors of children's school readiness; (iv) support resources of mothers directly predicted only the outcome measures at the year prior to school entry; (v) economic status of families moderated the association of spousal support with children's readiness outcomes at 66 month interview; and (vi) stimulating parenting partially mediated the association of mothers' level of education with children's language skills. This research contributed to the existing literature by (i) conceptualizing the school readiness as a multi-dimensional concept; (ii) identifying the family factors playing risk or protective roles on children's readiness; and (iii) delineating the direct role of fathers on children's school readiness in the Turkish context.

Keywords: **School Readiness, family factors, parental education, family economic status, social support, parenting, stimulation, responsiveness, punishment.**

ÖZET

Bu çalışma, Türkiye'de aile etkenlerinin çocukların okula hazır olması üzerindeki etkilerini incelemeyi amaçlamaktadır. Çocukların bilişsel, davranışsal, sosyal-duygusal yetkinlikleri olarak kavramsallaştırılan okula hazırlık, ilerleyen yıllarda çocukların okula uyumunun ve başarısının en temel yordayıcısıdır. Bu araştırma, çocukların gelişim çevrelerini kapsayan aile etkenlerini anlamayı hedeflemektedir; bu aile etkenleri, anne ve babanın eğitim durumu, ailelerin refah düzeyi, geniş aile üyelerinden gelen destek, eşler arasındaki destekleyici ilişki ve ana-baba davranışları şeklinde sıralanabilir. Bu yordayıcıların çocukların ayrı ayrı gelişim sonuçları ve okula hazır olma sonucu üzerindeki etkileri, okula başlamadan önceki yılda ve 66 ayda incelenmiştir. Bu tezde, Türkiye Erken Çocukluk Gelişim Ekolojileri Projesinin boylamsal verileri kullanılmıştır. Demografik bilgiler ve destek kaynakları ilk veri toplama yılından, ana-baba davranışları (uyaran ve sıcaklık sağlama ile cezalandırıcı ana-babalık) ikinci veri toplama yılından, çocukların okula hazırlık sonuçları ise ikinci, üçüncü ya da dördüncü veri toplama yılından okula başlama yılı veya 66 aya en yakın olduğu yaş bazında alınmıştır. Sonuçlara göre, (i) aile etkenleri, çocukların birleşik okula hazır olma sonuçları ile doğrudan ya da dolaylı olarak ilişkilidir; (ii) annenin ve babanın eğitim durumu, çocukların okula hazır olma sonuçları ile doğrudan ve dolaylı olarak ilişkilidir; (iii) ailenin ekonomik düzeyi ve uyaran sağlayıcı ana-baba davranışları, çocukların okula hazır olma durumlarını en iyi yordayan etkenler olarak ortaya çıkmıştır; (iv) annelerin destek kaynakları yalnızca okula başlamadan önceki yıla ait hazır olmasını doğrudan yordamaktadır; (v) annenin eşinden aldığı destek, farklı ekonomik düzeylerdeki aileler için çocukların okula hazır olmaları üzerinde önemli bir etkiye sahiptir; (vi) uyaran sağlayıcı ana-baba davranışları, annelerin eğitim düzeyi ile çocukların dil becerileri arasındaki ilişkiye aracılık etmektedir. Bu çalışma, mevcut literatüre, (i) okula hazır olma kavramını çok boyutlu ele alarak; (ii) aile etkenlerinin bir bütün halinde çocukların hazırlık düzeylerine etki ettiğini ortaya koyarak; ve (iii) Türkiye'de babaların çocukların okula hazır olmasında doğrudan rolünün olduğunu sunarak katkıda bulunmaktadır.

Anahtar Kelimeler: **Okula Hazırlık, aile etkenleri, ana-baba eğitimi, aile ekonomik düzeyi, sosyal destek, ana-babalık, uyaran sağlama, sıcaklık, cezalandırma.**

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Chapter 1

INTRODUCTION

School readiness refers to the cognitive, social-emotional, and behavioral competencies that children should have in order to be able to adapt to formal education (Lemelin et.al, 2007). There has been a change in the conceptualization of school readiness; while early studies defined school readiness as a concept with a single domain referring to the acquisition of discrete academic skills, such as letter recognition or counting (Mercer, Algozzine, & Triffiletti, 1979), current literature provided a comprehensive developmental definition including cognitive, behavioral, and social-emotional readiness to learn (Booth & Crouter, 2008; Pianta, 2002). These developmental domains contribute to children's adjustments to various academic, behavioral and social demands of classroom. These demands, such as sitting still, inhibiting distracters, focusing and maintaining attention on the learning material and the instructions of the teacher, and positive peer interactions can be addressed properly if children have behavioral and emotional regulatory skills. Children can be successful at school when they can deal with the cognitive, behavioral and emotional burden of the demands and tasks of the school (Campbell & von Stauffenberg, 2008).

The importance of studying school readiness has been recognized in recent years. Being ready for school and its importance for later academic achievement were highlighted by the findings that indicated the disparity between children from economically advantaged and disadvantaged households in academic achievement. In other words, children raised in economically disadvantaged home environments

fell behind other children raised in households with adequate economic resources in school adjustment and academic achievement (Farkas & Hibel, 2008; Pianta & McCoy, 1997). This disparity at school entry tended to continue in later academic years (Morrison & Cooney, 2002; Stipek & Ryan, 1997). Therefore, it is important to understand the familial factors leading to the disparity between the advantaged and disadvantaged groups at the time of school entry. Understanding the developmental processes leading to school readiness will enable policy makers to construct informed policies to promote school readiness.

The shift in the conceptualization of school readiness requires an understanding of the contexts in which a child is actively involved during preschool years. The development of children takes place in the family and community contexts, both of which have an effect on developmental outcomes of children (Bowes & Grace, 2004). Factors such as the characteristics of the home environment, parenting practices, and the external stress and support sources that influence the family as a whole constitute the contexts in which the child grows up. These contexts have been studied in terms of their contributions to children's development and well-being. The importance of the family and community has recently been understood in predicting school readiness (Johnson, Cowan & Cowan, 1999). Since school readiness has been conceptualized as the cognitive, behavioral, and social-emotional competencies of children at school entry, the family and community contexts in which these competencies are developed should be well-understood for school readiness research (Janus & Duku, 2007).

The social and economic characteristics of the Turkish population highlight the importance of understanding family and community factors for school readiness. The education levels in Turkey were lower when compared to the developed counties (UNICEF, 2007); for instance, Turkey is one of the lowest ranked countries in terms of the total educational attainment of adult population among the OECD countries (OECD, 2013). Especially, low educational attainment of women is an important issue in Turkey. As recent data indicate, almost 30 % of women are illiterate or have never finished elementary school; similarly, 21% of men have never finished the elementary school (General Directorate on the Status of Women, 2011). Poorly educated parents may not provide an optimal learning environment for their children. This, in turn, is expected to negatively influence school readiness. The economic characteristics of Turkish families also call for a study of school readiness as an outcome of family and community factors. Since most preschools and kindergartens are private or demand money from parents (Yildirim, 2008), most low-income families have difficulty to afford center-based education of their children. Due to the lower access of economically disadvantaged children to preschool education than their advantaged peers, the readiness gap between advantaged and disadvantaged children reverberates as a gap in school achievement, and continues to grow from the school entry to later years of schooling (UNICEF, 2007; State Planning Organization, 2009).

Another important issue for school readiness research in Turkey is the recent change in national educational policy of Turkey. According to the new education system, children are expected to start formal schooling at 66 months of age. Although the previous educational policies addressed the increment of the

availability of pre-school education for all children, recent system does not provide a free and high quality early childhood education prior to school entry, which has been proven to be efficient especially for the economically disadvantaged children (Geoffroy et. al., 2010). One of the most discussed issues regarding the new national education system is the age of school entry. Children are required to start formal education at 66 months of age, at the time of which has been argued that children could not be ready to meet the demands of the classroom (Initiative for Educational Reform [Eğitim Reformu Girişimi], 2012). In order to address the question to what extent children are prepared for school in terms of cognitive, behavioral, and social-emotional developmental domains at 66 months of age, this study examined children's readiness outcomes at the interview when children's ages were the closest to 66 month.

Despite the low educational attainment of parents and financial difficulties, the support resources of the parents (i.e., the instrumental and emotional support coming from the extended family members), may buffer the negative effects of these risk factors on children's school readiness (Baydar, et al., 2011). When the risk (poor education of parents and low economic resources for high quality early childhood education) and the protective factors (the support resources of parents) are considered, in order to study school readiness in Turkey, the family and community factors should be examined together. Addressing these family context and community resources available to the family for policy purposes are the primary concerns to support all developmental domains of children for school readiness until adequate and qualified early childhood education opportunities are available for all children (State Planning Organization, 2009).

In this study, in order to understand the family and community factors predicting school readiness, Family Systems Approach was adopted (Cowan, Cowan, Ablow, Johnson, & Measelle, 2005). Cowan and his colleagues specified five family domains which operate together to determine cognitive, social-emotional and behavioral competencies of children as they start formal education. These family domains were listed as individual characteristics of family members, marital relationship between spouses, parenting practices, the relationship of parents with their own parents, and the stress and support sources of the parents. The empirical tests of the Family Systems Approach revealed that none of the factors was more important than any others in predicting the academic, social and behavioral competencies of children (Cowan et al, 2005). Another important proposition of the model was that the individual characteristics, marital relationship, parents' relations with their own parents, and external stress and support sources were operating as the factors influencing the parenting practices, which mediated the effects of these factors on a child. Parenting practices influenced how and to what extend these family and community factors affected children's school readiness by mediating their direct effects.

In this research, both the family context of children and the external support resources influencing parenting practices were investigated. The family context, as a complex set of interactions between family members, was examined to predict children's school readiness. Provision of a stimulating and positive learning environment by parents was taken as an important component of the family context to predict the school readiness of children. Furthermore, the education level of the parents which is expected to predict child outcomes indirectly was considered as a

factor influencing the learning environment for children. The relationship between

parents and their own parents and social network as support resources were included

as predictors of children's school readiness outcomes. These support resources are

expected to positively influence stimulating and positive parenting and child

outcomes.

Chapter 2

LITERATURE REVIEW

The definition and assessment of school readiness as a predictor of academic success has been a concern for researchers and policy makers in recent years, and there has been a shift in the conceptualization of school readiness. The change in the definition of school readiness was spurred by the studies asking elementary school teachers about the problems that children encountered when they entered school (Rimm-Kauffman, Pianta & Cox, 2000; Webster-Stratton & Reid, 2010). According to the teacher reports, children who experienced adjustment problems had difficulties in focusing and maintaining attention, following the rules of the classroom, and dealing with the emotional burden of task difficulty (Campbell & von Stauffenberg, 2008). In order to be ready to respond to the demands of school, children needed to have a cluster of competencies rather than discrete academic skills (Pianta, 2002). Conceptualized as the cognitive, behavioral, and social-emotional competencies of children, school readiness was associated with multiple family factors.

2.1.1 Parental Education and School Readiness

Parents' level of education had both direct and indirect associations with children's cognitive, behavioral, and social-emotional development during preschool years (Magnuson, Sexton, Davis-Kean, & Huston, 2009). Specifically, high levels of parental education were associated with children's cognitive abilities (Griffin & Morrison, 1997), positive behavioral adjustment (Caughy, Nettles, & O'Campo, 2007), and social-emotional competencies (Silk, Sessa, Morris, Steinberg, &

Avenevoli, 2004) during preschool years. Positive outcomes in these domains

predicted the preparedness of children for school. Existing literature was mostly

based on the education level of mothers, considered as one of the most significant

factors in children's developmental outcomes (Hupp, 2011). On the other hand, the

importance of fathers' level of education has recently been emphasized. Fathers have

been understood to take a significant role in developmental domains of their children

(Palm & Fagan, 2008). The pathways from fathers' level of education to predict

children's readiness outcomes were examined in this study.

In order to understand how parental education was associated with children's

school readiness, several pathways were suggested in the literature. Initially, parental

education was a predictor of home learning environment which, in turn, was

associated with children's school readiness (Christian, MorrIson, & Bryant, 1998;

Son & Morrison, 2010). Provision of learning materials, such as toys, books, or

newspapers by parents (Griffin & Morrison, 1997), engaging in play activities with

children, and visits to libraries and museums together (Bradley, Corwyn, Burchinal,

McAdoo, & Coll, 2001) were significant predictors of children's readiness for the

school. Poorly educated parents were less likely to provide a stimulating

environment for their children than highly educated parents (Son & Morrison, 2010).

Another pathway from parental education to children's school readiness was

that parental education influenced the language stimulation used by parents while

talking to their children. Better educated parents tended to talk more frequently to

their children, use longer sentences, and a greater variety of vocabulary and word

types than less educated parents (Hoff, 2003). Parents' use of elaborated speech

improved children's literacy and cognitive skills, and predicted their classroom

adjustment at school entry (Parker, Boak, Griffin, Ripple, & Peay, 1999). Insufficient

verbal stimulation by poorly educated parents constituted a risk factor for children's

verbal skills and preparedness to academic tasks and classroom behaviors.

Parental education was also associated with warm and affectionate parenting

towards their children, which, in turn, predicted children's behavioral adaptation and

social-emotional competencies (Davis-Kean, 2005; Parker, et al., 1999). Highly

educated parents showed affection and warmth, praised their children, and played

with their children more frequently than parents with low levels of education. These

positive behaviors were associated with children's behavioral and social-emotional

adjustment (Silk, et al., 2004; Davis-Kean, 2005).

Similar research regarding the influence of parental education on children's

school readiness was conducted in Turkey. Parental education was found to predict

children's cognitive, behavioral, and social-emotional development in a Turkish

sample (Gokcay, Kokluk, Kayadibi, Erarslan, & Caliskan, 2000). Children of highly

educated parents were more likely to have higher literacy and cognitive skills

(Kagitcibasi, 2007; Kuntay & Ahtam, 2004), better social-emotional adjustment and

behavioral regulation abilities (Yagmurlu, Sanson & Koymen, 2005); thus, were

more ready for school (Erkan, 2011).

Research with Turkish samples also confirmed similar pathways of effects

from parental education to children's school readiness. Highly educated parents

provided a high quality home learning environment (Nacak, Yagmurlu, Durgel, &

Vijver, 2011), better language stimulation (Kuntay & Ahtam, 2004), and showed

more positive parenting towards their children (Baydar, Akcinar & Imer, 2012).

These behaviors of highly educated parents were associated with children's better

preparedness for school.

To summarize, parental education was an important predictor for parents'

provision of stimulation in an enriched and warm home learning environment, which

in turn predicted children's school readiness. Although lower levels of parental

education might constitute a risk factor for children's academic preparedness,

children who were under risk did not always end up the negative outcomes owe to

various protective factors (Noltemeyer & Bush, 2013). Several family and

community factors may play protective roles by weakening the association between

the risk factors and children's developmental outcomes. In a risky family

environment due to the poor parental education, children may benefit from the

responsive parenting at the family level, and the availability of the support from the

parents' social network at the society level (Burchinal, Roberts, Zeisel, Hennon, &

Hooper, 2006).

2.1.2 Social Support Received from the Spouse and School Readiness

The supportive relationship between spouses was found to be the most

important type of support for the positive parenting behaviors of mothers (Bezies,

Harrison, & Magill-Evans, 2004; Suzuki, Holloway, Yamamoto, & Mindnich, 2009).

Since this relationship was the most proximal and available to the mother as a

support resource, spousal support was differentiated from the other support resources

(Simons, Lorenz, Wu & Conger, 1993). The availability of the spouse support is

associated with positive parenting practices by improving mothers' psychological

well-being and reducing the load of child care (Belsky & Hsieh, 1998; Coyl,

Newland, Freeman, 2008).

The conceptualization of the marital relationship included both the presence

of support and the absence of conflict as separate dimensions. It was suggested that

healthy and supportive marital relationship did not imply the absence of conflict

(Fincham, 1998). The relationship between spouses might include both supportive

behaviors and conflict. The availability of emotional and instrumental support from

the spouse was associated with more adaptive parenting behaviors and better

outcomes for the child. For instance, Simons and his colleagues (1993) found that the

warmth and affection between spouses was associated with more adaptive parenting

and lower parental depression (Simons, Lorenz, Wu & Conger, 1993). In addition,

the instrumental support provided by the spouse was associated with a higher quality

of home environment and better child developmental outcomes (Parks, Lenz, &

Jenkins, 1992). The absence of instrumental help of the spouses was associated with

increased parental intrusiveness and harsh disciplining (Coyl, Newland, & Freeman,

2008).

On the contrary, the presence of conflict predicted negative parenting

behaviors and problems in child developmental outcomes. Oravecz and her

colleagues (2010) found that inter-partner conflict had a strong and direct negative

effect on children's behavioral adaptation. In addition, inter-partner conflict was a

risk factor for children's adaptation despite positive parenting and informal support

from the social network (Oravecz, Osteen, Sharpe, & Randolph, 2010).

The importance of supportive and non-conflicting relationship between spouses was also found in the studies conducted in Turkey. The support that mothers received from their spouses was positively associated with positive parenting practices (Baydar, Akcinar, & Imer, 2012) and psychological well-being of mothers (Guroglu, 2010). These effects of spousal support were associated with children's school readiness indirectly (Bekman & Kocak, 2011). Better relationship between parents was associated with more warmth and stimulation in mother-child interactions.

2.1.3 Social Support Received from the Extended Family and School Readiness

The literature addressing the influence of the extended family support focused on the parents' psychological well-being and parenting practices. The extended family members that constituted the support resources of the parents positively influenced children's school readiness (Caughy, Nettles & O'Campo, 2007).

The support received from the extended family members was associated with children's school readiness both directly and indirectly. The extended family members stimulated children directly through generating interactions, during which children had the learning opportunity (Baydar, et al., in press). In addition, the support of the extended family members were influential on children's cognitive (Salzinger, 1990), behavioral (Prevatt, 2003) and social-emotional readiness (Silk, et al., 2004) through improving the well-being and parenting skills of the mothers (Cochran & Brassard, 1979; Caughy, Nettles, O'Campo, 2007).

As parents received more support from their extended families, they felt less stressed; in turn, they showed more warmth towards their children (McConnel,

Breitkreuz & Savage, 2010). Mothers who were more satisfied with their support

provided more verbal stimulation (Smith, Landry & Swank, 2005), and showed less

hostility towards their children (Silk, et al., 2004). Moreover, the extended family

members gave information, advice or material sources to parents regarding child care

and parenting, which improved the parenting skills (Smith, Landry & Swank, 2005).

As a result, the positive and stimulating parenting was associated with children's

school readiness (Caughy, Nettles & O'Campo, 2007; for review, see Nettles,

Caughy, Campo, 200).

In Turkey, the influence of extended family followed similar pathways to

serve as a support resource for parents. The availability of extended family to support

parents was associated with parents' psychological well-being (Guroglu, 2010), and

warm parenting practices (Baydar, Akcinar, Imer, 2012). Parents who perceive more

support from the extended family members are less depressed, show more warmth,

and use less punishment to control their children (Guroglu, 2010). In addition, the

availability of the extended family support to the mother positively influenced

children's development, especially if the maternal resources were not enough to

support children (Baydar, et al., in press).

2.1.4 Parenting and School Readiness

Parenting referred to the goals and behaviors of parents that were shaped by

their values and beliefs regarding their children's socialization and development

(Darling & Steinberg, 1993; Baydar, Akcinar, Imer, 2012). Parenting usually was

conceptualized in terms of the affectionate tone of the parent-child relationship, the

control and discipline strategies used by parents, and stimulating behaviors during

the interaction with children for them to have better developmental outcomes

(Skinner, Johnson, & Snyder, 2005).

Parenting was found to be an important predictor for school readiness

(Parker, et al., 1999; Chazan-Cohen, et.al, 2009). The affection, control and

supportiveness of parents were the dimensions associated with school readiness of

children. Specifically, how much warmth was shown by parents to their children

while engaging in various activities (Parker, et. al, 1999), what kind of discipline

parents endorse for their children (Prevatt, 2003) and how much they were

stimulating their children through verbal communications and learning activities

(Son & Morrison, 2010) were associated with school readiness.

The affective tone of the parent-child relationship was associated with

children's school readiness (Parker, et. al, 1999; Simpkins, Weis, McCartney,

Kreider, & Dearing, 2006). Children of parents who were warm and affectionate

toward their children had better cognitive, behavioral and social-emotional

adjustment. Simpkins and her colleagues (2006) suggested that when there was a

higher level of warmth in mother-child relationship, children were more eager to

learn in a positive learning environment; and that improved children's learning and

skills (Simpkins, et al., 2006).

Parents' control and discipline strategies played an essential role in children's

cognitive, behavioral and social-emotional adjustment (Ruffman, Perner, &Parkin,

1999; Meins, et. al, 2002). To control their children's behaviors, parents may use

inductive reasoning or strict punishment strategies. Parents who used inductive

reasoning more frequently had children with better cognitive, behavioral and social-

emotional adjustment than parents who used strict obedience demanding and harsh punishment (Duncan, Coatsworth, & Greenberg, 2009). Since inductive reasoning included more verbal utterances, understanding of mental states and emotions than strict and harsh disciplining, children of parents who used the former had better school adaptation (Parker, et. al, 1999).

The stimulating behaviors of parents which referred to the parenting practices to support children's development were associated with children's school readiness. These practices included provision of a stimulating learning environment at home, verbal and academic stimulation, and play with children (Martin, Ryan, & Brooks-Gunn, 2010). These stimulating interactions and activities constituted a high quality learning environment for children to gain general knowledge and academic skills (Griffin & Morrison, 1997). Therefore, parents who provided a stimulating home environment (Christian, Morrison, & Bryant, 1998), verbally and academically stimulated their children (Parker et. al, 1999), and engaged in play activities more frequently (Chazan-Cohen, et. al, 2009) prepared their children better for school.

The associations of dimensions of parenting with children's school readiness were found in studies conducted in Turkey. Preschool children who had a warm relationship with their parents had better cognitive, behavioral and social-emotional adjustment (Bekman & Atmaca Kocak, 2011). Parents who used more reasoning and less punishment to control their children had children who were better prepared for school (Yagmurlu, Sanson & Koymen, 2005; Baydar, et. al, 2010). In addition, stimulating parenting behaviors were associated with children's school readiness. A stimulating home learning environment, provision of learning materials and engaging

in learning activities, such as play, or book reading predicted children's cognitive, behavioral and social-emotional adjustment (Baydar, et. al, 2010).

2.2 Conceptual Framework

In this research, the conceptual framework examines the effects of family and community factors on children's school readiness. The proposed model contains seven concepts; the education level of the mothers and the fathers, economic status of families as a control variable, support received from the spouse, support from the extended family to the mother, parenting practices and children's school readiness.

Several links and causal pathways were suggested in the conceptual framework. First, the education level of the mothers and the fathers were expected to predict school readiness of children indirectly, through the support sources and parenting practices of the mothers. Similar to the literature findings, the education level of the mothers and the fathers was expected to be related to the affective tone of the relationship between parents and child, the disciplining strategies and the stimulating behaviors of parents (Hoff, 2003; Davis-Kean, 2005; Son & Morrison, 2010). In addition, parents' level of education was expected to moderate the association of support sources of mothers with children's school readiness. For different levels of parental education, the support received from the spouse and the extended family members were expected to influence children's readiness differently.

Second, the economic status of the families was included into the model as a control variable, which was expected to be associated with the proposed family factors and children's readiness for school. The existing literature emphasized the

importance of material resources of families were closely associated with the family

factors (i.e. parents' level of education, quality of the physical environment, and the

availability of the enriched learning environment), which, in turn, predicted

children's readiness for school (Isaacs, 2012). In this study, the associations of

family factors with children's readiness were examined after controlling the

economic status of families. Moreover, the economic status was expected to

moderate the association of support sources of mothers with children's readiness for

school. For different levels of economic status, the influence of support received

from the spouse and extended family members were expected to differ.

Third, the relationship between the mother and the father, which was

conceptualized as the supportive and non-conflicting marital relationship, was

expected to predict children's school readiness directly (Simons, et al., 1993;

Oravecz, et al., 2010) and through parenting practices. As indicated in the literature,

the supportive relationship between parents was expected to be positively associated

with warm relationship between mother and the child (Goldberg & Easterbrooks,

1984; Suzuki, et al., 2009), non-physical disciplining strategies (Coyl, Newland, &

Freeman, 2008), and stimulating behaviors of mothers (Parks, Lenz, & Jenkins,

1992), that is, in turn, predicts children's school readiness (Benzies, Harrison, &

Magill-Evans, 2004).

Fourth, the support received from the extended family members was expected

to predict children's school readiness directly (Baydar, et al., in press) and indirectly,

through parenting practices. The extended family support was considered to be an

important support resource of the Turkish mothers since there are strong familial

bonds in functionally extended Turkish families (Kagitcibasi, 2007; World Bank,

2010). Through improving the responsive and stimulating parenting and non-physical disciplining, the availability of the extended family support was expected to predict school readiness.

Finally, parenting practices were expected to be the important predictor of school readiness. The affective tone of the relationship between the mother and the child (Hill, 2001), the disciplining strategies of mothers (Bradley & Corwyn, 2005) and the stimulating behaviors (Simpkins, et al., 2006; Cooper, Crosnoe, Suizzo, & Pituch, 2009) were the proposed dimensions of parenting that are expected to be associated with children's school readiness. These dimensions of parenting consistently predicted children's cognitive, social-emotional and behavioral development in the existing literature (Bradley & Caldwell, 1984; Bradley & Corwyn, 2005).

The maternal and paternal education levels, separately, were expected to predict the support received from the spouse in marital relationship and support received from the extended family members, at the first data collection wave. In addition, the maternal and paternal education levels, available at the first wave, were expected to predict parenting practices at the second data collection wave. Support received from the spouse and the extended family members, selected from the first wave, and parenting practices, selected from the second wave, were expected to predict children's school readiness, selected from either the second, third or fourth wave of data collection, considering the interview prior to children's school entry, and the interview at children's age closest to 66 months prior to school.
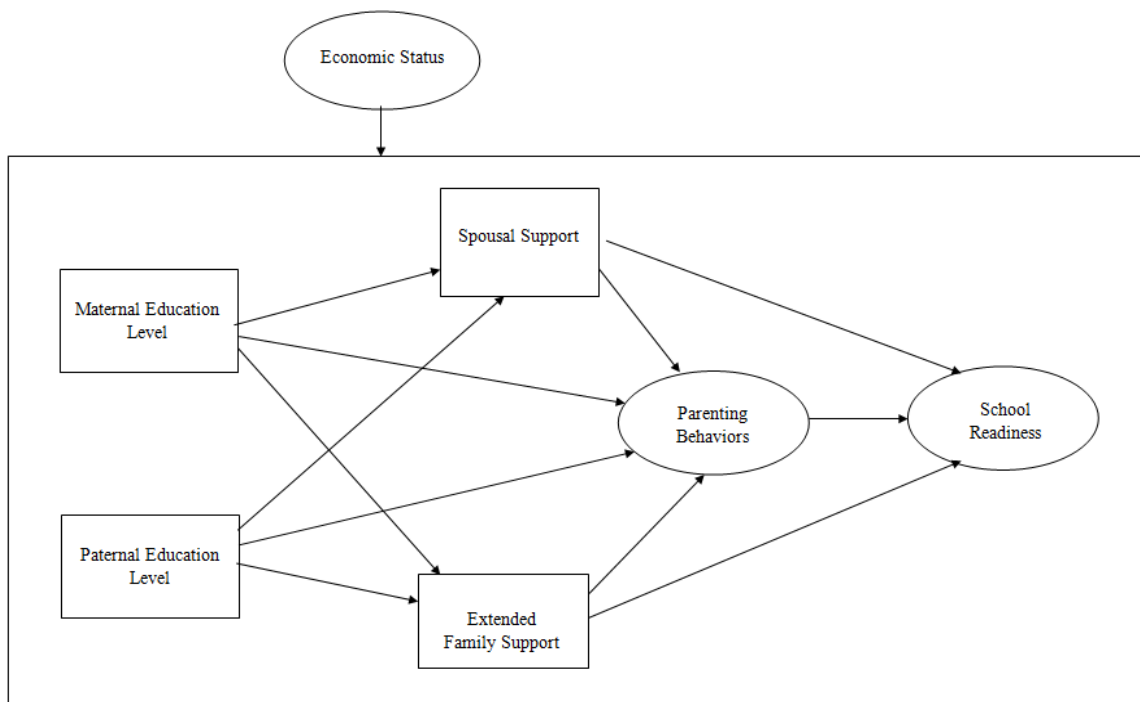
Figure 2.1. Conceptual Framework

2.3 Hypotheses

1- The education level of the mothers and the fathers predicted children's

school readiness through the mediating role of parenting. More

educational attainment of the mothers and fathers was associated

positively with the responsive, non-physical disciplining, and stimulating

parenting (Davis-Kean, 2005; Son & Morrison, 2010), which predicted

children's better readiness for school. In this research, the education level

of the mothers and the fathers are hypothesized to predict children's

school readiness by the mediating role of parenting practices.

2- The support from the spouse to the mother, which was conceptualized as

the supportive behaviors and lack of conflict, was hypothesized to predict

the school readiness of children indirectly, through the parenting

practices. The support and low conflict in relationship between the spouses was found to predict the warm, non-physical disciplining and stimulating parenting practices (Simons, Lorenz, Wu, & Conger, 1993; Oravecz, Osteen, Sharpe, & Randolph, 2010). More support from the spouse to the mother, and less conflict between the parents were expected to be associated with more responsive and stimulating parenting and less use of physical disciplining; which were expected to be associated with children's better readiness for school.

3- The support from the extended family members was hypothesized to predict better readiness of children through the parenting practices. The extended family support was influential on warm and stimulating parenting (McConnel, Breitkreuz & Savage, 2010); thus, it was associated with children's better readiness for school (Caughy, Nettles & O'Campo, 2007).

4- Responsive, non-physical disciplining and stimulating parenting were found to be positively related to children's readiness, in the literature (Bradley & Caldwell, 1984; Bradley & Corwyn, 2005). These observer rated parenting dimensions, i.e. responsive, non-physical disciplining, and stimulating parenting, were hypothesized to be positively associated with children's school readiness.

5- Economic status of the families was expected to be associated with the family factors proposed in the conceptual model; that, in turn, would predict children's readiness for school. Economic status was included into

the model in order to control its effect on the association of family factors

(i.e. level of education of mothers and fathers, support received from the

spouse and the extended family members, and parenting behaviors) with

children's readiness for school.

6- The level of education of mothers and economic status of families were

hypothesized to moderate the association of support sources of mothers

with children's readiness for school. For lower levels of educational

attainment of mothers and lower levels of financial resources of the

families, which were considered as risk factors, the support sources of

mothers were expected to play protective roles for children's readiness for

school.

Chapter 3

METHOD

This chapter consists of three sections containing the detailed information regarding the study sample, the recruitment processes and the data collection procedures, and the measures used in the current study, respectively.

3.1 Participants

The participants of this study are the mother-child dyads who participated in the four waves of data collection of the Early Childhood Developmental Ecologies in Turkey Project (ECDET), which was planned to be a 5-year longitudinal study. The four waves of data collection were completed at the preparation time of this research. A nationally representative sample, composed of 1052 mother and child dyads, was recruited to the study in the first wave of data collection. A representative sample was selected from a stratified clustered sample from 24 communities in 19 provinces of Turkey (Baydar, et. al., 2010). The demographic characteristics of the sample were presented in Table 3.1.

Table 3.1 *Characteristics of the Study Sample*

Characteristics	N	Mean	SD	Range
Children's age (in months)				
Wave 1	1052	41.53	3.64	33 – 52
Wave 2	916	53.66	3.80	45 – 66
Wave 3	871	66.96	3.82	58 – 80
Wave 4	820	78.95	3.90	70 – 93
Mother's age (years - Wave 1)	928	30.08	5.74	17 – 50
Mother's education level (total years)	1049	6.05	3.63	0 – 15
Father's education level (total years)	1044	7.45	3.38	0 – 15
Economic Status	1017	0	1	-1.83 – 7.48

At the first wave of data collection, children's age range was 33-52 months (M= 41.53, SD= 3.64), and mothers' age range was 17-50 (M= 30.08, SD= 5.74). By the end of the second wave of data collection, 919 mother-child dyads remained. The age range of children was 45-66 (M= 53.66, SD= 3.80) and none of the children were attending school at the second wave. By the end of the third wave of data collection 871 mother-child dyads remained, the age range of children at this wave was 58-80 (M= 66.96, SD= 3.82). Seventy one of the children were attending school at the third wave. Finally, by the end of the fourth wave, 820 mother-child dyads remained. The age range of children was 70-93 (M= 78.95, SD= 3.90), and 344 children were attending school at the fourth wave. The relevant information for children's school attendance was presented in Table 3.2.23

Table 3.2

Children's school attendance according to the waves and children's 66 months of age

Data collection wave	Observation closest to 66 months of age	% of children attending school (N)	Mean Age difference from 66 months *(SD)*
Wave 2	248	0 % (0)	-8.89 *(4.76)*
Wave 3	793	8.9 % (71)	-.29 *(3.89)*
Wave 4	14	50.9 % (409)	1.33 *(6.91)*

3.2 Procedure

The protocols, lasted 2-3 hours, administered by interviewers and field assistants. Before the every data collection wave, training was given to interviewers, all of whom were female, and their supervisors. The training program included information about the ECDET study, specific instructions for various sections of the questionnaire, how to conduct home visits, how to administer questionnaires, how to conduct observations, how to respond to mothers' inquiries, and how to apply psychological testing to the children.

Both qualitative and quantitative data collection methods were used in ECDET. Closed ended questionnaires rated on 4 or 5 point Likert scales were used to gather information from mothers about themselves and their children's behaviors. Considering that mothers could have very low levels of formal education, visual aids were used to help mothers to use Likert-type rating scales. The protocol was implemented alternating between mother interviews and child assessments.

3.3. Measures

Maternal and Paternal education. The maternal and paternal education levels will be considered separately in this research. The questions regarding the education level of parents were derived from the demographic information form. Mothers were asked which grade they and their spouse attended last, and their total years of education were calculated. The data were available at the first wave of data collection.

Marital Quality Scale. In order to measure support and conflict dimensions of the relationship between the mother and the father, Marital Quality Scale (Baydar & Yumbul, 2004) was used from the first wave of data collection. The Marital Quality Scale consisted of 20 items that were first rated by the mother with respect to how true or false a specific behavior was on a 3 point Likert scale (1= True; 3= False), and next regarding whether the target behavior of the spouse was perceived as upsetting on a 4 point Likert scale. Two subscales, namely, lack of care and supportive behavior (e.g. "My husband does not appreciate the tasks that I manage to do", "My husband does not support the decisions that I take about myself"), and aggression and harassment (e.g. "Sometimes my husband insults me"; "My husband uses a negative tone of voice while he was talking") were used for support and conflict dimensions, respectively. Items of the lack of care and supportive behaviors were not reversed because higher scores were obtained when mothers reported the behavior was wrong, implying that the higher the subscale score, the more support mothers received from their spouses. Aggression and Harassment items were reverse-coded because the more frequently mothers reported that behavior was true, the higher harassment they confronted with. When the items were reversed, the higher scores implied more conflict between the spouses. The internal reliabilities of these subscales were 0.85, and 0.89, respectively (Baydar et al., 2008).

 Index of support to the mother from the extended family. In order to measure the

support coming from the extended family members, the Turkish adaptation of

Multidimensional Scale of Perceived Social Support (MSPSS; Zimet et al., 1988;

adapted by Baydar, et al., 2007) was used from the first wave of data collection.

The original MSPSS was a 12 item self-report of subjectively assessed social support

received from family, friends, and significant other. The 12 items were rated on a 7-

point Likert-type scale (ranging from very strongly disagree to very strongly agree).

The Turkish version of MSPSS included 9 items, only considering support from the

family members other than the children and the husband. Items were rated by the

mothers with respect to the degree of how much the statement was true or false for

the participant (e.g. "There is a special person in the family to help me when I need";

"I can talk to someone in the family about my problems"). The items in the Turkish

version were rated on a 5-point Likert-type scale. Higher scores indicated higher

perceived social support by the mother from her family. Internal reliability of the

scale was 0.97 (Baydar et al., 2008).

HOME Observation for Measurement of the Environment. In order to measure the

parenting practices in terms of affection, control, and stimulation, Home Observation

for Measurement of the Environment (HOME; Bradley & Caldwell, 1984) was used

from the second wave of data collection.

The original HOME measured the effects of environment on child development. This

inventory aimed to measure the factors that affect the child development in home

environment by systematic observation (Bradley, 1981; Bradley, & Caldwell, 1979).

Although the original inventory included observation and unstructured interview,

almost in all implementations for large samples, observation and structured interview was used.

In this research, in order to measure the affection, control and stimulation dimensions of parenting, 5 subscales of the HOME Inventory were used. For affection, responsiveness subscale (α=0.82; e.g., "Mother holds child close at least 5 minutes during the visit."; "Mother patted, kissed, showed her love, or cuddled the child at least once during the visit"); for control, use of harsh discipline to the child (α=0.61; e.g., "Mother conversed with the child in a harsh manner, scolded at or derogated him more than once during visit"; "Mother restricted the child physically during the visit"); and for stimulation, learning materials (α=0.91; e.g., "Child has toys which teach colors, sizes, and shapes"; "Child has at least three child books"), language stimulation (α=0.84; e.g., "Parent teaches child simple verbal manners: please, thank you, I'm sorry"; "Mother corrects and completes child's incomplete sentences on her own in a positive manner"), and academic stimulation (α=0.82; e.g., "Do you help your child to learn the name of colors?" "Do you help your child to learn the numbers?") subscales were used (Baydar et al., 2008). In order to avoid collinearity, a factor analysis was conducted for the stimulation subscales; namely, learning materials, language stimulation, and academic stimulation. The calculated factor score of stimulation was used in regression analyses.

3.3.1 School Readiness

In order to measure school readiness, children's cognitive, social-emotional and behavioral outcomes were used in this research. These indicators of school readiness were used separately in regression analyses. The outcome measures for

school readiness; i.e. language skills, numerical understanding, social competence, and school readiness scores, were obtained from the second, third, and fourth waves of data collection. In order to decide which wave was definitive for each child's school readiness, first, the school attendance of each child was determined. As Table 2 depicted, at the second wave of data collection, which corresponded to the age of 4, none of the children were attending school. At the third wave, which corresponded to the age of 5, 1.34 % of children (N=11) were attending school, and at the fourth wave, which corresponded to the age of 6, 42.05 % of children (N=344) were attending school. For each child, the outcome measures were obtained from the wave prior to school entry. The second way of obtaining the outcome measures from different waves was to determine at which wave child's age was the closest to 66 months of age. For each child, their calculated ages in months were subtracted from 66 months; then the absolute values of these differences were used to determine at which wave child was closest to 66 months of age. The observations of age closest to 66 months according to the data collection wave were presented in Table 3.2. After controlling children's school attendance, outcome measures for school readiness were selected from the wave at which children were closest to 66 months of age. For example, if a child's age was closest to 66 months at the fourth wave, but the child was attending school at that wave, then the outcome measures were obtained from previous wave of data collection, which is the third wave. The related information about children's age differences from 66 months was presented on Table 3.2.

In addition, to be able to reach an overall understanding for children's being ready or not, these measures were combined through a factor analysis to obtain a composite school readiness score.

TIFALDI Receptive Language Test. TIFALDI-R is an individually administered test of receptive language ability for children ages 3 through 6 years developed by Berument (2000). The standardization process of TIFALDI was not complete at the time of this publication. The TIFALDI-R contains 83 items including two practice questions. Each test item requires the child to choose a picture out of 4 pictures that best represents a given word. Baseline level contains nine items, age three level contains 18 items, age four level contains 15 items, age 5 level contains 24 items and age 6 level contains 15 items. The TIFALDI-R is an adaptive test which is administered by establishing the basal level and the ceiling level for each child. The test is terminated when the child incorrectly answers 2/3rd of the questions. A three-parameter logistic Item Response Theory (IRT) model was applied to the 81 test items for the scoring of TIFALDI-R (Baydar, et al., 2008). Age standardized latent ability scores and raw latent scores are available for each child.

Numerical Abilities Assessment. The original numerical abilities tasks measure the children's numerical and mathematical concept development with five different tasks (Dowker, 2008). In the first task, the child's proficiency in counting was assessed. The child was asked to count five and twelve beans respectively. In the second task, the child's understanding of order-irrelevancy was measured. In this task, first the experimenter counted the beans and then asked the child to guess what would be the outcome if they counted in the reverse order. In the third task, the children's understanding of cardinal word principle was assessed. In this task, the child was asked to give the experimenter a number of beans and the child's answer was assessed based on his/her counting or giving the requested number of beans. Giving demonstrates child's developed abstract mental representation of counting. In the

fourth and fifth tasks, the child's basic addition and subtraction abilities were

measured respectively. First, the child was shown a set of five beans and then the

experimenter added one more bean and asked the child to tell how many beans there

were after addition. This was repeated up to eight beans. In the subtraction task, the

experimenter subtracted one bean at a time from the cluster and asked the child how

many beans were left after each subtraction. Number games included 10 questions.

The first two counting accuracy questions were scored as correct (1 points) or

incorrect (0 points). The remaining eight questions were rated on a 4-point scale. The

child got 1 point for indicating "wrong answer by counting", 2 points for "wrong

answer without counting", 3 points for "correct answer by counting" and 4 points for

"correct answer without counting". The internal reliability score for this test is .94.

Adaptive Social Behavior Inventory. The original Adaptive Social Behavior

Inventory (ASBI; Hogan, Scott, Bauer, 1992) is a 30 item questionnaire, addressing

the preschool social competence. The items are rated on a 3 point Likert scale with

respect to frequency. Initially, ASBI was used as three separate subscales: express

(e.g., "Understands others' feelings, like when they are happy, sad or mad."), comply

(e.g., "Is helpful to other children."), and disrupt (e.g., "Is bossy, needs to have

his/her way."). The Inventory was translated into Turkish by the ECDET team

(Baydar et al., 2007). Although the Turkish version has 30 items and three subscales

as same as the original version, it was changed into 5 point Likert scale to make

consistent with the other scales used in the ECDET and some expressions in the

items were modified. The items allow the estimation of a total adaptive social

behavior frequency scale and internal reliability of the total scale is .85 (Baydar, et.

al., 2008).

School Readiness Scale. School Readiness Scale is a 15 item questionnaire,

measuring children's readiness for school in terms of adaptation to school, cognitive

and academic skills, academic motivation, social and emotional development, self-

care skills, physical health, and communication abilities through maternal report. The

scale has been developed by the ECDET Project Team in 2008. After the pilot study,

which is conducted based on 109 items rated on a 3 point Likert Scale (1= always,

2= sometimes, 3= never), 15 items were selected as the most reliable and valid items

for school readiness. Seven subscales were identified; namely, motor skills (gross

and fine motors), keeping personal belongings (not loosing his/her pencil, or eraser),

peer-relations (playing with his/her peers, sharing his/her belongings),

communication abilities (understanding the instructions, verbalizing his/her needs),

academic motivation (being interested in reading, writing activities), cognitive and

academic skills (reading, writing, drawing), and physical development (getting

dressed, or eating on his/her own). In this research, these items were rated on 5 point

Likert scale with respect to correctness (1= definitely wrong, 2= wrong, 3= neither

true, nor wrong, 4= true, 5= definitely true). Higher scores indicated better readiness

for school. The internal reliability score for this test is .84.

3.3.2 Control Variables

Economic Status. The data regarding the economic status of families were available

in the first wave of data collection. A factor score was calculated on the basis of four

indicators of wealth, which were material possessions owned by the family, monthly

expenditures, the real or estimated value of the residence, and the quality of the

physical environment (see Table 3.3) (Baydar, et. al., 2010). Mothers were asked to

report the availability of the essential (e.g. refrigerator, washing machine) and non-

essential (e.g. television, car, computer) material goods, total monthly expenses of

the family (divided by the household size to calculate the expenditures per person),

and the estimated or real value of the rent considering the residence where family

lived. In addition, the observer report of physical environment of the residence was

considered. Interviewers rated the questions addressing the physical environment as

"yes", or "no" (e.g. "The building seems secure", "There are at least 10 m^2 per

person within the house") (Baydar, et.al., 2010). The standardized factor score was

used as control variable in this research.

Table 3.3 *Mean levels of wealth indicators for the three groups of economic status*

	Low Economic Status	Middle Economic Status	High Economic Status	Total
Maternal Education	3.97[a]	6.10[b]	8.75[c]	6.11
Paternal Education	5.84[a]	7.20[b]	9.82[c]	7.45
Material possessions	3.37[a]	5.39[b]	8.79[c]	5.63
Physical Environment	47.35[a]	75.08[b]	88.91[c]	69.70
Monthly per person expenditures	104.61[a]	190.21[b]	389.96[c]	214.99
N	331	418	268	1017

Note: Superscripts that are not shared indicate significant differences as estimated by Tukey's post-hoc test

Age difference of children. In order to control to what extent children are older or

younger from 66 months of age at the time of measurement, 66 was subtracted from

children's ages in months in 2nd, 3rd, and 4th waves of data collection. In terms of

absolute values of subtractions, the smallest difference was considered. The real

value of the smallest difference was taken as age deviance variable, after the school

entry times of children were controlled. In other words, if a child has enrolled in

school at the wave when the age difference was the closest to 66 months, the age

difference of the previous data collection wave was considered.

Chapter 4

RESULTS

The results are presented in four sections; namely, descriptive and bivariate analyses, regression analyses predicting children's school readiness, and interacting and mediating roles of predictor variables. In the first section, the demographic characteristics of the sample, descriptive information about the measures, and the bivariate correlational associations among variables are presented. The second section contains the presentation of regression models that predict the school readiness outcome measures and the results of factor analyses conducted on outcome measures. The third section presents the regression models which included interaction terms. The fourth section explains the mediating roles of predictors on child outcomes. For the statistical analyses, The Statistical Program for Social Sciences (version 20) was used.

4.1 Descriptive and Bivariate Analyses

4.1.1   Characteristics of the Sample

The demographic characteristics were presented in Table 3.1. The total years of education of mothers and fathers ranged from no schooling to university graduation; the mean education level of mothers was 6.05 years (N = 1049, SD = 3.63) and the mean education level of fathers was 7.45 years (N = 1044, SD = 3.38). Mothers' ages at the baseline interview were calculated. The mean age of mothers were 30.08 (N = 928, SD = 5.74), and ranged between 17 and 50.

The economic status of the families was calculated as a standard score on the basis of the four indicators of wealth; which are material possessions owned by the family (e.g. refrigerator, as an essential item; car, as a non-essential item), monthly per person expenses, estimated or actual value of rent of family residence, and the observer report of the quality of physical environment. 32.5 % of the families, whose factor score was .5 lower than the mean, fell into the low economic status group (N = 331) that was composed of families who (1) owned at most 2 essential and no non-essential items, (2) had monthly per person expenditures lower than $100, (3) lived in a physical environment which was assessed as inadequate on at least two criteria. 41.1 % of the families, whose factor score was between -.5 and +.5, fell into the middle economic status group (N = 418). This group was described as families who (1) owned at most 3 non-essential items, (2) had per person expenditures between $100 and $215, (3) lived in a physical environment which was assessed as inadequate on at most one criterion. 26.4 % of the families, whose factor score was .5 above the mean, were classified as high economic status group (N = 268), referring to the (1) ownership of essential and non-essential possessions, (2) having monthly per person expenditures more than $215, (3) living in a physical environment which was assessed as adequate on all criteria (Baydar, et.al., 2010). The relevant information was provided in Table 3.3 which shows the characteristics of each economic status group on the basis of wealth indicators.

Children's mean age in months, at the first, second, third and fourth waves of data collection, was 42 months (N = 1052, SD = 3.64), 54 months (N = 916, SD = 3.80), 67 months (N = 871, SD = 3.82), and 79 months (N = 820, SD = 3.90), respectively.

Children in the sample had started school at different time points. The

relevant information for children's school attendance was presented in Table 3.2. At

wave 2, none of the children had started formal education. At wave 3, 71 children

were identified as the first graders, constituted 8.9 % of the sample. Between wave 3

and wave 4, 338 children had started school; meaning 409 children were in school,

corresponding to 50.1% of the sample, and 394 children had not started formal

education yet, which corresponded to 49.1% of the sample. The preschool attendance

of children in the study sample was 1.8% (N = 19) at the first data collection wave;

5.7% (N = 52) at the second data collection wave; 35.5% (N = 309) at the third data

collection wave, and 37.5% (N = 308) at the fourth data collection wave. School

Readiness Scale scores were available for the second and the third waves of data

collection. For each child, readiness scores were selected both from the data

collection wave prior to school entry, and from the data collection wave when child's

age was closest to 66 months; however, the scores were obtained from the previous

wave if the child was in school at that wave. The distributions of children identified

as "ready", "partially ready", and "not ready" at two different time points were

presented in Table 4.1. Score ranges of 0-59, 60-79, and 80-100 were classified as

"not ready", "partially ready" and "ready", respectively. These cut-off scores, that

were identified to be discriminating children according to their readiness level and

predicting their school adjustment, were based on the validation study of the School

Readiness Scale (Baydar, Güroğlu, & Birdinç, 2003). According to this

classification, at the data collection wave prior to school entry, 8.3 % of children

were not ready (N = 65), 48.6 % of children were partially ready (N = 379), and 43.1

% of children were ready (N = 336). In addition, 9.9 % of children were not ready (N

= 82), 47.9 % of children were partially ready (N = 395), and 42.2 % of children were ready (N = 348) at 66 month interview after the school attendance was controlled. For children whose school attendance data were available, the school entry years were determined for each readiness group. Among the children who were identified as ready at 66 month interview, 10.7 % of them started school at the age of 5; 48.4% of children started school at the age of 6; and 40.9% of children started school at age of 7. Among the children who were identified as partially ready, 8.3%, 40.6%, and 51.1% of them started school at 5, 6, and 7 years of age, respectively. Finally, among children who were identified as not ready at 66 month interview, 8.6%, 31.4%, and 60% of them started school at 5, 6, and 7 years of age, respectively.

Table 4.1 *Distribution of children's school readiness*

Cut-off Scores	At interview prior to school entry	At 66 month Interview
	% (N)	% (N)
Not ready	8.3 (65)	9.9 (82)
Partially ready	48.6 (379)	47.9 (395)
Ready	43.1 (336)	42.2 (348)

4.1.2 Correlational Analyses

Table 4.2 presented the bivariate correlations of the predictor variables with the outcome measures selected from the year prior to school entry. The mean scores and the standard deviations of the variables were also provided in the main diagonal. The demographic variables (parental education and economic status of the families),

and the support sources of the mothers (support received from the extended family members and spouses, and the conflict with spouse) were obtained from the first wave of data collection. The parenting behaviors, listed as providing learning materials, language and academic stimulation, showing responsiveness, and using physical/ harsh punishment, were obtained from the second wave of data collection. The outcome measures of children were selected either from the second, third, or fourth waves, depending on children's school entry year, or the interview conducted closest to child's attaining 66 months of age. In other words, the outcome measures for each child were obtained from the data collection wave prior to school entry (see Table 4.2), and at the wave when a child's age was closest to 66 months (see Table 4.3). There is a strong correlation between the maternal and paternal education levels, $r(1044) = .53$, $p < .001$. Both maternal and paternal education levels were positively correlated with the economic status of the family, support received from the family and spouse; and negatively correlated with the conflict between the spouses. In addition, more years of parental education was associated with higher provision of learning materials, language stimulation, academic stimulation, and responsiveness; and lower physical/harsh punishment. Moreover, children's outcomes at the year prior to school entry were positively correlated with maternal and paternal levels of education.

The support sources of the mothers were correlated with the parenting behaviors. Specifically, when mothers received more support from the extended family members and their spouses, they tended to provide more learning materials, language stimulation, and were more responsive. Provision of academic stimulation was only associated with support received from the extended family members.

Although using physical/harsh punishment as a disciplining strategy was not

associated with the support received from extended family members, it was closely

related to the marital relationship between parents. Higher support and lower conflict

between spouses were associated with lower physical/harsh punishment towards

children. On the contrary, the conflict between spouses was negatively associated

with provision of learning materials, language stimulation, and being responsive; but

positively associated with using physical/harsh punishment.

Parenting practices were moderately and strongly correlated with children's

outcome measures selected from the year prior to school entry. While provision of

learning materials, language and academic stimulation, and being responsive were

positively associated, using physical/harsh punishment was negatively associated

with children's language skills, numerical understanding, social competence and

school readiness at the time of the interview preceding school entry.

Table 4.2 *The Correlations among the variables*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Maternal Education	6.05 (3.63)														
2. Paternal Education	.53***	7.45 (3.38)													
3. Economic Status	.55***	.46***	0 (1)												
4. Family support	.20***	.14***	.20***	78.1 (20.4)											
5. Spousal support	.14**	.13**	.12**	.32***	78.2 (23.7)										
6. Conflict with spouse	-.14***	-.14***	-.13***	-.31***	-.80***	22.6 (25.8)									
7. Learning materials	.51***	.41***	.62***	.19***	.12***	-.11*	48.67 (32.4)								
8. Language stimulation	.36***	.28***	.41***	.21***	.10*	-.08*	.57***	77.1 (23.3)							
9. Academic stimulation	.33***	.20***	.29***	.14***	.06	-.04	.52***	.42**	47.17 (28.6)						
10. Responsiveness	.28***	.18***	.29***	.12***	.10*	-.09*	.41***	.56***	.31**	63.7 (29.3)					
11. Physical/harsh punishment	-.18***	-.14***	-.16***	-.03	-.09*	.12**	-.23***	-.28***	-.13***	-.27**	12.74 (15.9)				
12. Language Skills[1]	.38***	.30***	.44***	.15***	.05	-.04	.52***	.36***	.33***	.26**	-.11*	.00 (.73)			
13. Numerical Understanding[1]	.20***	.19***	.21***	.13***	-.01	-.00	.24***	.21***	.17***	.19***	-.11*	.35***	63.2 (29.4)		
14. Social Competence[1]	.23***	.22***	.30***	.08*	.13***	-.14***	.41***	.33***	.23***	.22***	-.21***	.34***	.15***	71.4 (12.0)	
15. School Readiness[1]	.30***	.27***	.37***	.11*	.14***	-.12*	.45***	.38***	.26***	.27***	-.17**	.44***	.29*	.53***	76.1 (14.7)

Note: [1] The measures are obtained from the year prior to school entry

*p < .05, **p < .001

None of the bivariate correlations among predictors, except the one between the support received from the spouse and the conflict between spouses, were above .80. Since there is a high correlation coefficient between these two predictors (r (896) = -.80, $p < .001$), conflict between spouses was eliminated from the following regression analyses.

Table 4.3 presents the correlations between the predictor variables and the outcome measures at 66 month interview. The directions of the correlation coefficients showed similarity to the coefficients presented in Table 4.2. Additionally, the difference between the children's age at the time of measurement and 66 months was included, which was positively correlated with children's numerical understanding and maternal report of school readiness. The age difference of children from 66 months did not correlate with children's language skills, which represented the age standardized scores of children, and social competence. While selecting the outcome measures and children's age differences from 66 months, the school attendance of children were controlled; in other words, if a child is in school at the time of 66 month interview, previous data collection wave was considered to select the outcome measures and the minimum age difference from 66 months.

Table 4.3 *The Correlations of the Predictors with Outcome Measures at 66-Month Interview*

	66-Month Language Skills	66-Month Numerical Understanding	66-Month Social Competence	66-Month School Readiness
1. Maternal Education	.40**	.27**	.29**	.36**
2. Paternal Education	.35**	.24**	.25**	.31**
3. Economic Status	.47**	.32**	.32**	.45**
4. Family support	.16**	.10*	.13**	.15**
5. Spousal support	.06	.04	.10*	.09*
6. Conflict with spouse	-.03	-.04	-.12**	-.06
7. Age Deviance from 66 Months	-.05	.21**	.06	.09*
8. Learning materials	.55**	.40**	.44**	.55**
9. Language stimulation	.42**	.31**	.38**	.45**
10. Academic stimulation	.36**	.28**	.25**	.37**
11. Responsiveness	.30**	.23**	.22**	.27**
12. Physical/harsh punishment	-.14**	-.15**	-.23**	-.17**
Mean	.00	49.43	70.16	76.90
SD	.86	30.92	11.87	15.51

Note:*$p < .05$, **$p < .001$

4.2 Regression Analyses

4.2.1 Regression Models that Predicted Children's Outcomes at the Year Prior to School Entry

In order to understand to what extent family factors predicted children's outcomes at the year prior to school entry, regression analyses were conducted. Education levels of mothers and fathers and economic status of the family were entered at the first step; support resources of the mothers were entered at the second step; and the parenting behaviors were entered at the third step. Since a high collinearity was found among three parenting practices; namely, providing learning materials, language stimulation, and academic stimulation, a "stimulating parenting" factor score was estimated for these variables. These parenting behaviors were loaded in one factor with an eigenvalue equaled to 2.01, and accounted for 66.81% of

variance in stimulating parenting factor. The individual contributions of each

component to the accounted variance were provided in Table 4.4. By calculating a

composite "stimulating parenting" factor, the multicollinearity among three parenting

behaviors was eliminated, and the combined effect of these stimulating parenting

behaviors could be observed on outcomes.

Table 4.4 *Factor Analysis with the Stimulating Parenting (N=1052)*

Item	Factor Loadings
Learning Materials	.86
Language Stimulation	.81
Academic Stimulation	.78
Eigenvalue	2.01
% of total variance	66.81

4.2.1.1 Language Skills

The regression model of family factors on children's language skills at the

year prior to school entry was presented in Table 4.5. The first step, included

mothers' and fathers' education and economic status, accounted for the 22% of the

variance, $F (3, 750) = 71.14$, $p < .001$. At the second step, support resources did not

contribute to the variance ($F (2, 747) = 1.76$, $p = .21$). Parenting practices that were

included at the third step contributed another 7% to the variance, $F (3, 745) = 24.76$,

$p < .001$. The overall regression model explained 30% of variance in children's

language skills at the interview prior to school entry.

Specifically, total years of schooling of mothers ($\beta = .17$, $p < .001$) and the

economic status of the families ($\beta = .32$, $p < .001$) significantly predicted children's

language skills while the education level of fathers did not. Support resources of

mothers were not associated with children's language skills. When three dimensions

of parenting; stimulating parenting, responsiveness, and physical/harsh punishment,

were included to the model, only stimulating parenting ($\beta = .33$, $p < .001$)

significantly predicted children's language skills, assessed at the year prior to school

entry. At this third step, the education level of the mothers and the economic status of

the family remained significant.

Table 4.5 *Predicting Children's Language Skills at Interview Prior to School Entry with Family Factors*

Variable	Model 1	Model 2	Model 3
		Coefficients	
Maternal education	.04*** (.17)	.04*** (.17)	.02* (.09)
Paternal education	.01 (.06)	.01 (.06)	.01 (.04)
Economic Status	.24*** (.32)	.24*** (.31)	.15*** (.19)
Support from family		.00 (.06)	.00 (.03)
Support from spouse		.00 (-.02)	.00 (-.02)
Stimulating Parenting			.24*** (.33)
Responsiveness			.00 (.01)
Physical/harsh Punishment			.00 (.02)
R^2	.22	.23	.30
ΔR^2	.22	.01	.07
ΔF	71.14***	1.56	24.76***
Df	3,750	2,747	3,745

Note. The values are unstandardized coefficients with standardized coefficients in parentheses.
* $p < .05$, ** $p < .01$, *** $p < .001$

4.2.1.2 Numerical Understanding

The regression model of family factors on children's numerical understanding at the year prior to school entry was presented in Table 4.6. The first step explained 6% of the variance, $F(3, 748) = 15.14$, $p < .001$. The support resources, at the second step, accounted for additional 1% of variance of numerical understanding, $F(2, 746) = 3.95$, $p < .05$. The parenting behaviors at the third step added 3% to the overall variance, $F(3, 743) = 7.28$, $p < .001$. The overall model explained 10% of variance of numerical understanding, which showed that family factors accounted for a smaller variance of numerical understanding of children when compared to the variance of language skills at the year prior to school entry.

The level of education of mothers ($\beta = .09$, $p < .05$) and fathers ($\beta = .09$, $p < .05$), and the economic status of families ($\beta = .12$, $p < .01$) significantly predicted children's numerical understanding. Even after the support resources were included at the second step, the education level of fathers ($\beta = .09$, $p < .05$) and economic status ($\beta = .11$, $p < .05$) remained significant. Only the family support predicted children's numerical understanding at the second step. When parenting behaviors included in the model, stimulating ($\beta = .11$, $p < .05$) and responsive parenting ($\beta = .09$, $p < .05$) were positively associated with children's numerical understanding at the year prior to school entry. In addition, support resources were significant to predict children's numerical understanding at the third step. While support received from the extended family members had a positive association with children's numerical understanding ($\beta = .09$, $p < .01$), the support received from the spouse was negatively associated ($\beta = -.08$, $p < .05$).

Table 4.6 *Predicting Children's Numerical Understanding at Interview Prior to School entry with Family Factors*

Variable	Model 1	Model 2	Model 3
		Coefficients	
Maternal education	.76* (.09)	.74 (.08)	.35 (.04)
Paternal education	.80* (.09)	.82* (.09)	.72 (.08)
Economic Status	3.54** (.12)	3.27* (.11)	1.40 (.05)
Support from family		.14** (.10)	.13* (.09)
Support from spouse		-.09 (-.07)	-.10* (-.08)
Stimulating Parenting			3.17* (.11)
Responsiveness			.09* (.09)
Physical/harsh Punishment			-.09 (-.04)
R^2	.06	.07	.10
ΔR^2	.06	.01	.03
ΔF	15.14***	3.95*	7.28***
Df	3,748	2,746	3,743

Note. The values are unstandardized coefficients with standardized coefficients in parentheses.
*$p < .05$, ** $p < .01$, *** $p < .001$

4.2.1.3 Social Competence

The regression model for the social competence of children accounted for 19% of the variance (see Table 4.7). At the first step, which accounted for the 11% of the variance (F (3, 759) = 29.81, $p < .001$), only the economic status of the family (β = .23, $p < .001$) predicted children's social competence at the year prior to school entry. The second step, in which support resources of the mothers were entered, accounted for the variance by 1% (F (2, 757) = 3.64, $p < .05$). While support received from the spouse ($\beta = .10$, $p < .01$) significantly predicted children's social competence, the family support did not. When the parenting behaviors were included in the model at the third step, which explained additional 8% of the variance, F (3, 754) = 24.34, p < .001, the stimulating parenting was positively ($\beta = .29$, $p < .001$), and using physical/harsh punishment was negatively ($\beta = -.11$, $p < .01$) associated with children's social competence at the year prior to school entry.

Table 4.7 *Predicting Children's Social Competence at Interview Prior to School Entry with Family Factors*

Variable	Model 1	Model 2	Model 3
		Coefficients	
Maternal education	.27 (.08)	.24 (.07)	-.03 (-.01)
Paternal education	.29 (.08)	.26 (.07)	.18 (.05)
Economic Status	2.91*** (.23)	2.92*** (.23)	1.46** (.12)
Support from family		-.01 (-.02)	-.02 (-.04)
Support from spouse		.05** (.10)	.05** (.09)
Stimulating Parenting			3.53*** (.29)
Responsiveness			.01 (.01)
Physical/harsh Punishment			-.08** (-.11)
R^2	.11	.11	.19
ΔR^2	.11	.01	.08
ΔF	29.81***	3.64*	24.34***
Df	3,759	2,757	3,754

Note. The values are unstandardized coefficients with standardized coefficients in parentheses.
$*p < .05, ** p < .01, *** p < .001$

4.2.1.4 School Readiness

Family factors contributed to 23% of the variance of children's maternal report of school readiness (see Table 4.8). All three steps of the regression model significantly contributed to the variance by 15% (F (3, 649) = 38.57, p < .001), 1% (F (2, 647) = 3.87, p < .05), and 7% (F (3, 644) = 20.76, p < .001), respectively. At the first step, education level of mothers (β = .11, *p* < .05) and economic status of the families (β = .27, *p* < .001) significantly predicted children's school readiness scores

at the year prior to school entry. At the second step, while spouse support was

significant ($\beta = .10$, $p < .05$), family support was not. Among the parenting

behaviors, which were entered at the third step, only stimulating parenting ($\beta = .30$, p

$< .001$) had significant association with children's school readiness. In addition, the

economic status of the family and support received from the spouse remained

significant at the third step.

Table 4.8 *Predicting Children's School Readiness at Interview Prior to School Entry with Family Factors*

Variable	Model 1	Model 2	Model 3
		Coefficients	
Maternal education	.45* (.11)	.40* (.10)	.06 (.01)
Paternal education	.33 (.07)	.30 (.07)	.22 (.05)
Economic Status	4.15*** (.27)	4.12*** (.27)	2.29** (.15)
Support from family		.01 (.02)	-.00 (-.02)
Support from spouse		.06* (.10)	.06* (.09)
Stimulating Parenting			4.48*** (.30)
Responsiveness			.02 (.04)
Physical/harsh Punishment			-.03 (-.03)
R^2	.15	.16	.23
ΔR^2	.15	.01	.07
ΔF	38.57***	3.87*	20.76***
Df	3,649	2,647	3,644

Note. The values are unstandardized coefficients with standardized coefficients in parentheses.
*$p < .05$, ** $p < .01$, *** $p < .001$

4.2.1.5 Factor Analysis of the Outcome Measures Prior to School Entry

In order to be able to refer a single composite school readiness score with multiple dimensions, the outcome measures were entered into factor analysis. The result of the analysis showed that children's language skills, numerical understanding, social competence, and school readiness scores were loaded in one factor, the eigenvalue of which was 2.07. Total variance explained by outcome measures was 51.79%. The unique factor loadings of each measure were provided in Table 4.9.

Table 4.9 *Factor Analysis with the Outcome Measures Prior to School Entry (N=1052)*

Item	Factor Loadings
Language Skills	.75
Numerical Understanding	.60
Social Competence	.71
School Readiness	.80
Eigenvalue	2.07
% of total variance	51.79

Regression model that predicted the composite school readiness score by family factors explained 39% of the variance (see Table 4.10). The unique contributions of the steps in the model were 27% (F (3, 639) = 77.21, $p < .001$), 0.1% (F (2, 637) = 1.95, $p = .14$), and 12% (F (3, 634) = 43.14, $p < .001$) to the variance, respectively.

At the first step, the education levels of mothers ($\beta = .21$, $p < .001$) and fathers ($\beta = .03$, $p < .05$), and the economic status of the family ($\beta = .31$, $p < .001$) significantly predicted the composite readiness score. At the second step, neither

support resources had a significant association with children's composite school

readiness score. At the third step, providing more stimulation ($\beta = .37$, $p < .001$) and

using less harsh punishment ($\beta = -.08$, $p < .05$) had positive associations with

children's school readiness. In addition, the education level of mothers and the

economic status of the families directly predicted children's composite readiness

scores at the year prior to school entry.

Table 4.10 *Regression Model that predicted the Composite School Readiness Score at the Interview Prior to School Entry with Family Factors*

	Model 1	Model 2	Model 3
Variable		Coefficients	
Maternal education	.06*** (.21)	.06*** (.20)	.03* (.09)
Paternal education	.03* (.09)	.02* (.08)	.02 (.06)
Economic Status	.32*** (.31)	.31*** (.31)	.16*** (.15)
Support from family		.00 (.05)	.00 (.04)
Support from spouse		.00 (.03)	.00 (.02)
Stimulating Parenting			.37*** (.37)
Responsiveness			.00 (.06)
Physical/harsh Punishment			-.01* (-.08)
R^2	.27	.27	.39
ΔR^2	.27	.00	.12
ΔF	77.21***	1.95	43.14***
Df	3,639	2,637	3,634

Note. The values are unstandardized coefficients with standardized coefficients in parentheses.
*$p < .05$, ** $p < .01$, *** $p < .001$

4.2.2   Regression Models that Predicted Children's Outcome Measures at 66 Month

Interview

The following regression analyses were conducted with the outcome

measures selected from the interview when children's ages were the closest to 66

months. Considering children's school entry year, the data from the previous year

were selected if a child is in school at the time of 66-month interview. Similar to the

previous analyses, the education levels of the mothers and fathers, the economic

status of the family were entered at the first step; the support resources of mothers

were included in the second step; three parenting behaviors were added at the third

step. Additionally, the difference of children's ages from 66 months was entered at

the first step in the regression models for numerical understanding, social

competence and school readiness. Since language skills scores were age

standardized, an association with age difference was not expected.

4.2.2.1 Language Skills

The overall regression model accounted for 34% of variance in language

skills of children at 66 month interview (see Table 4.11). At the first step, which

accounted for 26% of the variance (F $(3, 792) = 91.05$, $p < .001$), the education levels

of mothers ($\beta = .17$, $p < .001$) and fathers ($\beta = .10$, $p < .01$), and economic status of

the family ($\beta = .33$, $p < .001$) had significant associations with children's language

skills. Although including the support resources did not contribute to the variance at

the second step, support received from the extended family ($\beta = .07$, $p < .05$)

appeared as a significant predictor of children's language skills. When parenting

practices were entered at the third step, which accounted for additional 9% of the

total variance (F (3, 787) = 35.40, $p < .001$), the support received from the family

became insignificant. In addition to the direct effects of parental education and

economic status, parents' provision of stimulation ($\beta = .35$, $p < .001$) were

significantly associated with children's language skills at 66 month interview.

Table 4.11 *Predicting Children's Language Skills at the 66 month Interview with Family Factors*

Variable	Model 1	Model 2	Model 3
		Coefficients	
Maternal education	.04*** (.17)	.04*** (.16)	.02* (.08)
Paternal education	.03** (.10)	.03** (10)	.02* (.08)
Economic Status	.28*** (.33)	.28*** (.32)	.16*** (.19)
Support from family		.00* (.07)	.00 (.03)
Support from spouse		-.00 (-.03)	-.00 (-.03)
Stimulating Parenting			.30*** (.35)
Responsiveness			.00 (.04)
Physical/harsh Punishment			.00 (.02)
R²	.26	.26	.34
ΔR²	.26	.00	.09
ΔF	91.05***	2.07	35.40***
Df	3,792	2,790	3,787

Note. The values are unstandardized coefficients with standardized coefficients in parentheses.
*$p < .05$, ** $p < .01$, *** $p < .001$

4.2.2.2 Numerical Understanding

Table 4.12 presents the regression analysis on children's numerical

understanding at 66 month interview predicted by the family factors. The overall

regression model accounted for the 23% of the variance. The variables at the first

step, including the differences of children's ages from 66 months, accounted for 17%

of the variance (F (4, 785) = 40.90, $p < .001$). The support resources, at the second

step, did not make any contribution to the variance (F (2, 783) =.15, $p = .86$). The

parenting practices, at the third step, added 5% to the variance that the model

accounted for (F(3, 780) = 18.13, $p < .001$).

All predictor variables at the first step significantly predicted children's

numerical understanding at 66 month interview. Specifically, significant association

of the age difference from 66 months with children's numerical understanding

implied that children's being older than 66 months was associated with higher scores

in numerical understanding and performance. At the third step, after the parenting

practices were included in the model, the education level of mothers and fathers

became insignificant. The economic status of the families ($\beta = .12$, $p < .01$) and

children's age difference from 66 months ($\beta = .22$, $p < .001$) remained significant.

Among the parenting practices, only stimulating parenting ($\beta = .26$, $p < .001$)

significantly predicted children's numerical understanding at 66 month interview.

Table 4.12 *Predicting Children's Numerical Understanding at the 66 month Interview with Family Factors*

Variable	Model 1	Model 2	Model 3
		Coefficients	
Maternal education	1.09** (.12)	1.10** (.13)	.50 (.06)
Paternal education	.71* (.08)	.72 (.08)	.52 (.06)
Economic status	7.05*** (.23)	7.05*** (.22)	3.77** (.12)
Difference of age from 66 months	1.43*** (.23)	1.43*** (.23)	1.35*** (.22)
Support from family		.01 (.01)	-.03 (-.02)
Support from spouse		-.03 (-.02)	-.03 (-.03)
Stimulating Parenting			7.94*** (.26)
Responsiveness			.04 (.04)
Physical/harsh Punishment			-.07 (-.04)
R^2	.17	.17	.23
ΔR^2	.17	.00	.05
ΔF	40.90***	.15	18.13***
Df	4,785	2,783	3,780

Note. The values are unstandardized coefficients with standardized coefficients in parentheses.
*$p < .05$, ** $p < .01$, *** $p < .001$

4.2.2.3 Social Competence

The regression model, predicting children's social competence at 66 month interview, accounted for 23% of variance (see Table 4.13). The predictors at the first step, which accounted for 14% ($F(4, 809) = 32.95$, $p < .001$) of the variance, were significantly associated with children's social competence. Higher levels of mothers' ($\beta = .14$, $p < .01$) and fathers' education ($\beta = .08$, $p < .05$) and the economic status of

the family ($\beta = .22, p < .001$) were associated with higher scores on the social

competence of children at 66 month interview. In addition, age difference of children

from 66 months positively predicted children's social competence ($\beta = .09, p < .01$).

The support resources at the second step did not contribute to the variance ($F(2, 807)$

$= 1.19, p = .30$). After the parenting practices entered into the model, provision of

stimulation ($\beta = .32, p < .001$), and using physical/harsh punishment as a disciplining

strategy ($\beta = -.12, p < .001$) significantly predicted the social competence at 66

month interview while mothers' and fathers' education level became insignificant.

Table 4.13 *Predicting Children's Social Competence at the 66 month Interview with Family Factors*

Variable	Model 1	Model 2	Model 3
	Coefficients		
Maternal education	.46** (.14)	.44** (.13)	.15 (.05)
Paternal education	.30* (.08)	.29* (.08)	.18 (.05)
Economic Status	2.68*** (.22)	2.63*** (.22)	1.12* (.09)
Difference of age from 66 months	.21** (.09)	.21** (.09)	.16* (.07)
Support from family		.02 (.03)	.01 (.01)
Support from spouse		.02 (.03)	.01 (.03)
Stimulating Parenting			3.78*** (.32)
Responsiveness			-.00 (-.01)
Physical/harsh Punishment			-.09*** (-.12)
R^2	.14	.14	.23
ΔR^2	.14	.00	.09
ΔF	32.95***	1.19	29.91***
Df	4,809	2,807	3,804

Note. The values are unstandardized coefficients with standardized coefficients in parentheses.
*$p < .05$, ** $p < .01$, *** $p < .001$

4.2.2.4 School Readiness

Overall regression model for the maternal report of school readiness at 66 month interview accounted for 36% of variance (see Table 4.14). The first step accounted for 24% ($F_{(4, 807)} = 62.92$, $p < .001$) of the variance in maternal report of school readiness. Predictors at this step; i.e. levels of education of mothers ($\beta = .13$, $p < .01$) and fathers ($\beta = .09$, $p < .05$), economic status ($\beta = .35$, $p < .001$), and

the age difference from 66 months ($\beta = .12$, $p < .01$), were positively associated with children's maternal report of school readiness at 66 month interview. The support resources at the second step did not contribute to the variance that the model accounted for ($F(2, 805) = 0.65$, $p = .52$). The third step contributed by 12% ($F(3, 802) = 50.43$, $p < .001$) to the variance. After the parenting behaviors were entered into the model, maternal and paternal education level became insignificant. Among the parenting behaviors, only stimulating parenting ($\beta = .44$, $p < .001$) was significantly associated with children's maternal report of school readiness at 66 month interview. In addition, the economic status of the families and age differences of children from 66 months remained significant at this final step.

Table 4.14 *Predicting Children's School Readiness at the 66 month Interview with Family Factors*

Variable	Model 1	Model 2	Model 3
		Coefficients	
Maternal education	.57** (.13)	.54** (.12)	.11 (.03)
Paternal education	.40* (.09)	.39* (.08)	.24 (.05)
Economic Status	5.45*** (.35)	5.40*** (.34)	2.84*** (.18)
Difference of age from 66 months	.37** (.12)	.36** (.12)	.29** (.09)
Support from family		.02 (.03)	-.00 (-.01)
Support from spouse		.01 (.01)	.01 (.01)
Stimulating Parenting			6.89*** (.44)
Responsiveness			-.02 (-.03)
Physical/harsh Punishment			-.03 (-.03)
R^2	.24	.24	.36
ΔR^2	.24	.00	.12
ΔF	62.92***	.65	50.43***
Df	4,807	2,805	3,802

Note. The values are unstandardized coefficients with standardized coefficients in parentheses.
$*p < .05, ** p < .01, *** p < .001$

4.2.2.5 Factor Analysis for Outcome Measures at the 66 Month Interview

The outcome measures selected from the 66 month interview were entered into a factor analyses in order to obtain a composite school readiness score. The results of the factor analysis, which were provided in Table 4.15, indicated that children's language skills, numerical understanding, social competence, and maternal report of school readiness scores were loaded in one factor. The eigenvalue of the

factor was 2.44, and the accounted variance was 61.04% for composite school

readiness.

Table 4.15 *Factor Analysis with the Composite School Readiness at the 66 Month Interview (N=1052)*

Item	Factor Loadings
Language Skills	.79
Numerical Understanding	.75
Social Competence	.72
School Readiness	.86
Eigenvalue	2.44
% of total variance	61.04

The regression model predicting composite school readiness scores with family

factors, presented in Table 4.16, accounted for 46% of variance. The first step

predictors; i.e. maternal ($\beta = .21$, $p < .001$) and paternal education ($\beta = .10$, $p < .01$),

economic status of the family ($\beta = .34$, $p < .001$), and the age difference of children

from 66 months ($\beta = .13$, $p < .001$), accounted for 32% of variance (F (4, 783) =

93.21, $p < .001$), and positively predicted the composite school readiness score. The

support resources did not contribute to the variance of children's composite school

readiness (F (2, 781) = 1.41, $p = .24$). When parenting practices were entered into the

model at the third step, additional 14% of the variance was accounted for (F (3, 778)

= 69.24, $p < .001$). Providing stimulation ($\beta = .45$, $p < .001$) had a positive

association while using physical/harsh punishment ($\beta = -.06$, $p < .05$) had a negative

association with children's composite school readiness scores. The association of

paternal education with children's composite school readiness became insignificant

after parenting practices were included in the model. The regression model showed

that the family factors, i.e. maternal education, economic status of the family,

children's age difference from 66 months, and stimulating and punishing parenting,

together contributed to the variance accounted for to predict children's outcomes at

66 month interview.

Table 4.16 *Regression Model with Composite School Readiness at the 66 Month Interview*

Variable	Model 1	Model 2	Model 3
		Coefficients	
Maternal education	.06*** (.21)	.06*** (.21)	.03** (.09)
Paternal education	.03** (.10)	.03** (.09)	.02 (.06)
Economic Status	.35*** (.34)	.35*** (.34)	.18*** (.17)
Difference of age from 66 months	.03*** (.13)	.03*** (.13)	.02*** (.11)
Support from family		.00 (.05)	.00 (.01)
Support from spouse		.00 (-.02)	.00 (-.02)
Stimulating Parenting			.45*** (.45)
Responsiveness			.00 (.01)
Physical/harsh Punishment			-.00* (-.06)
R^2	.32	.32	.46
ΔR^2	.32	.00	.15
ΔF	93.21***	1.41	69.24***
Df	4,783	2,781	3,778

Note. The values are unstandardized coefficients with standardized coefficients in parentheses.
*$p < .05$, ** $p < .01$, *** $p < .001$

4.3 The Moderating Roles of Predictor Variables

The association between the support resources of mothers and children's readiness outcomes was expected to differ for the different levels of maternal education and economic status of families. In order to see the moderating roles of level of education of mothers and economic status of families on the associations between support resources and children's readiness outcomes, four interaction terms were calculated. Initially, the measures; namely, mothers' total years of schooling, economic status of the family, support received from the extended family members, and support received from spouse were mean centered. In other words, the mean scores of the measures were subtracted from the individual scores. Then, the four interaction terms; maternal education by family support, maternal education by spouse support, economic status of the family by family support, and economic status of the family by spouse support, were calculated.

These interaction terms were entered in the regression models at the third step to predict children's language skills, numerical understanding, social competence, school readiness, and composite school readiness scores at 66 month interview. The following sections provided the relevant results and tables for the interaction effects.

4.3.1 The Interaction term of Maternal Education with Social Support from Family

In Table 4.17, the final steps of the regression models with the interaction term on children's outcomes at 66 months were presented. The lower panel of the table presented the variance and change in model made by the interaction term at the third step. The interaction term did not contribute to the variance at the third step of the models. Therefore, it could be concluded that the education level of mothers did

not moderate the association of the support received from family with children's

readiness outcomes at 66 month interview.

Table 4.17 *Regression Model with the Interaction of Maternal Education with Social Support from Family to Predict Children's Outcomes at 66 Month Interview*

Variable	Language Skills	Numerical Understanding	Social Competence	School Readiness	Composite School Readiness
	Model 4	Model 4	Model 4	Model 4	Model 4
Maternal education	.02* [1] (.08)	.54 (.06)	.12 (.04)	.10 (.02)	.03** (.10)
Paternal education	.02* (.08)	.50 (.05)	.17 (.05)	.23 (.05)	.02 (.06)
Economic Status	.16*** (.19)	3.44** (.11)	.99* (.09)	2.76*** (.17)	.17*** (.17)
Difference of age from 66 months	-	1.93*** (.26)	.22* (.09)	.34** (.09)	.03*** (.10)
Support from family	.00 (.03)	-.03 (-.02)	.01 (.02)	.00 (-.00)	.00 (.01)
Support from spouse	-.00 (-.03)	-.04 (-.03)	.02 (.04)	.01 (.01)	.00 (-.02)
Maternal Education * Family Support	.00 (-.01)	-.01 (-.01)	.00 (.01)	.00 (-.00)	.00 (-.03)
Stimulating Parenting	.30*** (.35)	8.21*** (.27)	3.56*** (.31)	6.97*** (.45)	.45*** (.45)
Responsiveness	.00 (.04)	.04 (.04)	-.00 (-.01)	-.02 (-.03)	.00 (.01)
Physical/harsh Punishment	.00 (.02)	-.09 (-.04)	-.10*** (-.13)	-.03 (-.03)	-.00* (-.07)
Change Statistics [2]					
R^2	.28	.17	.14	.25	.34
ΔR^2	.00	.00	.00	.00	.00
ΔF	.29	.24	.55	.97	1.43
Df	1,791	1,783	1,810	1,808	1, 781

Note. [1] The values are unstandardized coefficients with standardized coefficients in parentheses.
*$p < .05$, ** $p < .01$, *** $p < .001$
[2]The change statistics refer to the 3rd steps of the regression models when the interaction term is included.

4.3.2 The Interaction term of Maternal Education with Social Support from Spouse

Table 4.18 indicated that the interaction term of mother's education level with support received from the spouse did not contribute to the variance of any one of the children's outcomes. Mothers' level of education did not moderate the association of spousal support with children's readiness outcomes at 66 month interview.

Table 4.18 *Regression Model with the Interaction of Maternal Education with Social Support from Spouse to Predict Children's Outcomes at 66 Month Interview*

Variable	Language Skills Model 4	Numerical Understanding Model 4	Social Competence Model 4	School Readiness Model 4	Composite School Readiness Model 4
Maternal education	.02* [1] (.08)	.52 (.06)	.12 (.04)	.10 (.02)	.03** (.09)
Paternal education	.02* (.08)	.49 (.05)	.17 (.05)	.22 (.05)	.02 (.06)
Economic Status	.17*** (.19)	3.43* (.11)	.95 (.08)	2.66*** (.17)	.17*** (.17)
Difference of age from 66 months	-	1.95*** (.26)	.22* (.08)	.35** (.09)	.03*** (.11)
Support from family	.00 (.03)	-.02 (-.01)	.01 (.02)	.00 (.00)	.00 (.02)
Support from spouse	-.00 (-.04)	-.04 (-.03)	.02 (.04)	.01 (.02)	.00 (-.02)
Maternal Education * Spouse Support	.00 (-.03)	-.00 (-.01)	.00 (.02)	.01 (.04)	.00 (-.02)
Stimulating Parenting	.30*** (.35)	8.19*** (.27)	3.58*** (.32)	7.02*** (.45)	.45*** (.45)
Responsiveness	.00 (.04)	.04 (.04)	-.00 (-.01)	-.02 (-.04)	.00 (.01)
Physical/harsh Punishment	.00 (.02)	-.09 (-.04)	-.10*** (-.13)	-.03 (-.03)	-.00* (-.07)
Change Statistics[2]					
R^2	.26	.19	.14	.24	.32
ΔR^2	.00	.00	.00	.00	.00
ΔF	2.19	.43	.04	.16	1.65
Df	1,788	1,781	1,805	1,803	1,779

Note. [1] The values are unstandardized coefficients with standardized coefficients in parentheses.
*$p < .05$, ** $p < .01$, *** $p < .001$
[2] The change statistics refer to the 3rd steps of the regression models when the interaction term is included.

4.3.3 The Interaction term of Economic Status with Social Support from Family

The interaction between the economic status of the families and the support

received from the extended family members had significant contribution to the

variance of social competence (F(1, 806) = 4.19, *p* < .05) of children at 66 months.

As presented in Table 4.19, the interaction term became insignificant after the

parenting behaviors were entered in the model at the fourth step.

In addition, economic status did not moderate the association of extended

family support with children's language skills, numerical understanding, maternal

report of school readiness, and composite readiness scores at 66 month interview (see

Table 4.19).

Table 4.19 *Regression Model with the Interactions of Economic Status with Social Support from Family to Predict Children's Outcomes at 66 Month Interview*

Variable	Language Skills	Numerical Understanding	Social Competence	School Readiness	Composite School Readiness
	Model 4	Model 4	Model 4	Model 4	Model 4
Maternal education	.02*[1] (.08)	.45 (.05)	.13 (.04)	.10 (02)	.03** (.10)
Paternal education	.02* (.08)	.67 (.07)	.17 (.05)	.23 (.05)	.02 (.06)
Economic Status	.17*** (.19)	3.42* (.11)	1.04* (.09)	2.78*** (.18)	.17*** (.17)
Difference of age from 66 months	-	1.29*** (.20)	.21** (.08)	.34** (.09)	.03*** (.11)
Support from family	.00 (.02)	-.01 (-.01)	.00 (.01)	-.00 (-.00)	.00 (.01)
Support from spouse	-.00 (-.03)	.01 (.01)	.02 (.03)	.01 (.01)	.00 (-.02)
Economic Status * Family Support	-.00 (-.03)	-.03 (-.02)	-.02 (-.03)	-.01 (-.01)	-.00 (-.04)
Stimulating Parenting	.30*** (.35)	8.15*** (.27)	3.52*** (.31)	6.95*** (.45)	.45*** (.45)
Responsiveness	.00 (.04)	.04 (.04)	-.00 (-.00)	-.02 (-.03)	.00 (.01)
Harsh Punishment	.00 (.02)	-.07 (-.04)	-.10*** (-.13)	-.03 (-.03)	-.00* (-.06)
Change Statistics[2]					
R²	.26	.19	.14	.24	.32
ΔR²	.00	.00	.00	.00	.004
ΔF	1.91	.40	2.74	1.49	4.59*
Df	1,788	1,781	1,805	1,803	1,779

Note. [1] The values are unstandardized coefficients with standardized coefficients in parentheses. *p < .05, ** p < .01, *** p < .001
[2] The change statistics refer to the 3rd steps of the regression models when the interaction term is included.

4.3.4 The Interaction term of Economic Status with Social Support from Spouse

The interaction between support received from the spouse and the economic status of the family had significant contribution to the accounted variance of

children's readiness outcomes at 66 month interview except children's social

competence. In separate regression models, presented in Table 4.20, the interaction

term of economic status with spousal support accounted for the variance in language

skills, numerical understanding, school readiness, and composite school readiness by

1% ($F(1, 788) = 12.55$, $p < .001$), 1% ($F(1, 781) = 12.03$, $p < .01$), 1% ($F(1, 803) =$

10.04, $p < .05$), and 1% ($F(1, 779) = 16.29$, $p < .001$), respectively.

The interaction term remained significant to predict children's language skills

($\beta = -.09$, $p < .01$), numerical understanding ($\beta = -.09$, $p < .01$), maternal report of

school readiness ($\beta = -.06$, $p < .05$), and composite readiness scores ($\beta = -.08$, $p <$

$.01$) even after the parenting practices were entered into the model. In other words,

the economic status of the families moderated the association of spousal support with

children's readiness for school. On the other hand, economic status did not moderate

the association of spouse support with the social competence of children at 66 month

interview.

Table 4.20 *Regression Model with the Interaction of Economic Status with Social Support from Spouse to Predict Children's Outcomes at 66 Month Interview*

Variable	Language Skills	Numerical Understanding	Social Competence	School Readiness	Composite School Readiness
	Model 4	Model 4	Model 4	Model 4	Model 4
Maternal education	.02* [1] (.09)	.63 (.07)	.12 (.04)	.14 (.03)	.03** (.11)
Paternal education	.02* (.08)	.52 (.06)	.17 (.05)	.24 (.05)	.02 (.06)
Economic Status	.17*** (.20)	3.79** (.12)	.99* (.09)	2.88*** (.18)	.18*** (.18)
Difference of age from 66 months	- 	1.97*** (.26)	.22* (.08)	.35** (.09)	.03*** (.11)
Support from family	.00 (.02)	-.03 (-.02)	.01 (.02)	-.01 (-.01)	.00 (.01)
Support from spouse	-.00 (-.05)	-.05 (-.04)	.02 (.04)	.00 (.00)	-.00 (-.03)
Economic Status * Spouse Support	-.00** (-.09)	-.13** (-.09)	.00 (.00)	-.04* (-.06)	-.00** (-.08)
Stimulating Parenting	.28*** (.34)	7.88*** (.26)	3.56*** (.32)	6.84*** (.44)	.44*** (.44)
Responsiveness	.00 (.04)	.04 (.04)	-.00 (-.01)	-.02 (-.03)	.00 (.02)
Physical/harsh Punishment	.00 (.03)	-.07 (-.03)	-.10*** (-.13)	-.02 (-.02)	-.00* (-.06)
Change Statistics [2]					
R^2	.27	.20	.14	.25	.33
ΔR^2	.01	.01	.00	.01	.01
ΔF	12.55***	12.03**	1.39	10.04**	16.29***
Df	1,788	1,781	1,805	1,803	1,779

Note. [1] The values are unstandardized coefficients with standardized coefficients in parentheses.
*$p < .05$, ** $p < .01$, *** $p < .001$
[2] The change statistics refer to the 3rd steps of the regression models when the interaction term is included.

4.4 The Mediating Role of Stimulating Parenting

In order to understand how stimulating parenting played a mediating role between the association of family predictors and children's language skills, Baron

and Kenny method of mediation, four steps of regressions, was conducted (Baron &

Kenny, 1986). Stimulating parenting was predicted to mediate the association of

maternal level of education with children's language skills. In the four steps of

regression series, the direct association of mothers' level of education with children's

language skills ($\beta = .41$, $p < .001$); the association of stimulating parenting with

children's language skills ($\beta = .56$, $p < .001$); the association of mothers' level of

education with stimulating parenting ($\beta = .49$, $p < .001$); and the association of both

mothers' level of education, and stimulating parenting with children's language skills

were entered in separate regression analyses. When stimulating parenting was

entered in the model, as a mediator, the association between mothers' level of

education and children's language skills weakened but remained significant ($\beta = .17$,

$p < .001$). Thus, the results revealed that stimulating parenting partially mediated the

relationship between maternal education and children's language skills at 66 months

(see Figure 4.1).

Figure 4.1 The Mediating Effect of Stimulating Parenting on the relation between Maternal
Education and Language Skills at 66 Month Interview
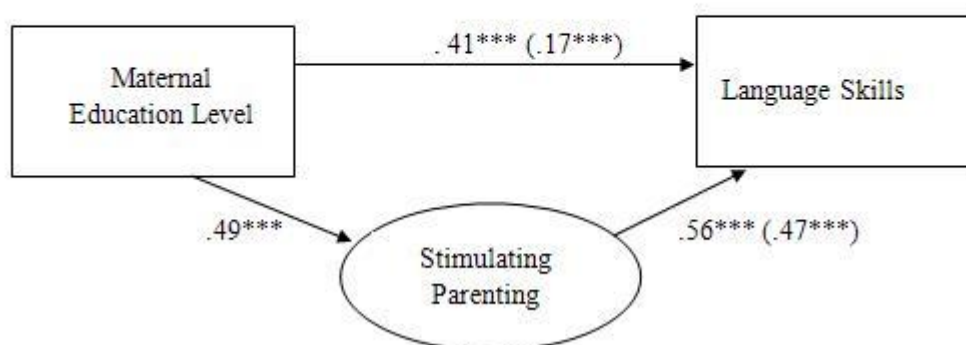
Chapter 5

DISCUSSION

The purpose of this study was to understand how family factors, such as parental education, economic status, the support resources of mothers and the parenting behaviors (stimulating, responsive and punitive parenting) predicted children's readiness for school. Children's school readiness, conceptualized as children's cognitive, social-emotional and behavioral competencies, was examined at two different time points: (i) at the interview prior to school entry, and (ii) when children's ages were closest to 66 months prior to starting school. At both time points, children's language skills, numerical understanding, social competence, and maternal perception of school readiness measures were examined separately and as a composite readiness score in regression analyses. In this chapter, the main findings, contributions, limitations, and policy implications of this research are presented in four sections.

5.1 Summary of the results

5.1.1 Main Findings on the Association of Family Factors with Composite School Readiness

The findings concerning children's composite school readiness were congruent with the proposed conceptual framework. Specifically, the family factors, i.e. the levels of education of mothers and fathers, economic status of families, parenting behaviors, significantly predicted children's readiness at both measurement points.

First, mothers' levels of education predicted children's composite school readiness, while fathers' levels of education did not. Children of better educated mothers were better prepared for school at the interview prior to school entry (β = .10, $p < .05$), and at 66 month interview (β = .09, $p < .05$). The association of paternal education with children's school readiness (β = .09, $p < .05$) disappeared after parenting behaviors were included in the model (β = .06, $p = .14$). A mediating role of parenting behaviors might be inferred on the association of fathers' levels of education with children's readiness. Fathers' education level, which was stated as not a strong predictor as mother's level of education, might predict children's readiness through their involvement in stimulating activities with their children (Downer & Mendez, 2005). Although this research did not examine fathers' parenting behaviors, their education levels might be associated with a stimulating home learning environment that supports the school readiness of children.

Second, the economic status of families directly predicted children's composite readiness prior to school entry (β = .31, $p < .001$), and at 66-month interview (β = .34, $p < .001$). Higher material resources of families were associated with better readiness of children. This association was supported by previous research; suggesting that economic status of families was closely related to factors such as the education level of the parents, the availability of learning materials to children, the use of stimulating activities of parents for children; collectively, predicted children's readiness for school (Bradley & Corwyn, 2002; Isaacs, 2012). It is important to note that the economic status of families directly predicted children's school readiness after these family factors were controlled. This strong association of economic status of families with children's readiness outcomes could be attributed to close influence

of the economic status on the quality of physical environment child grew in, nutrition and health conditions of children, the factors which were also closely related with children's development (Bradley & Putnick, 2012).

Third, the support resources of the mothers; i.e. support received from the extended family members and spouses were not found to be the significant predictors of children's composite readiness scores at either time points, contrary to the expectations. The importance of the social support provided to mothers from their families and spouses was observable for the domain specific readiness measures; such as children's numerical understanding, and children's language skills. Although the previous studies found that social support available to the mothers was significantly associated with children's readiness for school through reducing the parental stress, supporting the parental skills, and improving the psychological well-being of parents (Caughy, Nettles, & O'Campo, 2007; Simons, Lorenz; Wu, & Conger, 1993); this study could not find the support resources as the significant predictors of children's composite readiness scores.

Fourth, among the parenting behaviors investigated in this study, stimulating parenting and using physical/harsh punishment predicted children's composite school readiness while responsiveness did not. Stimulating parenting was positively associated with composite school readiness whereas using harsh punishment was negatively associated with children's readiness. Parents who provided more learning materials (e.g. toys, books) and stimulated their children verbally and academically prepared their children better for school. This finding was supported by the previous research, suggesting that stimulating home learning environment (Melhuish et. al.,

2008) and parental involvement (Lau, Li, & Rao, 2011) were the most significant

contributors of children's readiness for school. The other important parenting

dimension, i.e. parents' using physical/harsh punishment as a disciplining strategy,

was associated with children's composite readiness, including cognitive, social-

emotional, and behavioral readiness. Previous research suggested that parental

disciplining strategies were particularly associated with children's social skills;

however, recent research indicated that this parenting dimension also predicted

children's cognitive outcomes (Walker & MacPhee, 2011). The association could

arise because avoidance of physical punishment during disciplining might have

contributed to a positive learning environment for children. A positive climate in

parent-child interactions may promote children's learning, leading to better readiness

for school.

Although the existent literature suggested that parental responsiveness and

warmth were important contributors of children's developmental domains, this study

could not find an association of responsive parenting with children's readiness for

school. One possible explanation for this insignificant association could be that

parental responsiveness was found to be important, particularly, for children's

learning for the disadvantaged groups (Karaaslan, 2011). When the families did not

have adequate financial or parenting resources, the warm relationship of mothers

with their children might be playing a protective role for better developmental

outcomes (Burchinal, et. al., 2006). Considering these previous findings, the

economic status of families was expected to moderate the association of responsive

parenting with children's readiness for school. The interaction term of the economic

status of families with responsiveness dimension of parenting, which was calculated

with the mean centered measures, included at the fourth steps of the regression

models with the family factors to predict children's readiness outcomes at 66 month

interview. The interaction term was significant for the social competence (β = -.10, p

< .01), maternal report of school readiness (β = -.10, p < .10), and composite school

readiness scores (β = -.09, p <.01). In order to understand how high and low levels of

responsiveness were influential on children's readiness for school for different

economic status levels, further analyses were conducted. The means for readiness

outcomes were predicted for high and low economic status and responsiveness levels

while keeping the other predictors constant (the mean scores were used). However,

these predicted means did not differ from each other for high and low responsiveness

groups.

One difference in the regression models between the two interviews was that the

difference of children's ages at the time of interview from 66 months was included in

the regression analyses. The interview when child's age was closest to 66 months

was identified, and the smallest absolute value of age difference was selected from

the relevant data collection wave prior to starting school. The findings suggested that

the age difference from 66 months was positively associated with children's

readiness for school at 66 month interview; as children grow older, they become

better prepared for school. In the sample of this study, children started school at an

average of 76 months of age according to all five waves of data collection (M=75.6,

SD=4.6). The age of school entry has been an important issue for education policies

in the literature. Previous research focused on the total years of educational

attainment on the basis of age at school entry (Fertig & Joshen, 2005; Kawaguchi,

2011), but not the readiness of children for school. The findings of this research

suggested that older children were better prepared for school ($\beta = .11$, $p < .001$); however, when the predictive power of family factors were considered, it could be suggested that the economic status of the families ($\beta = .17$, $p < .001$) and stimulating parenting behaviors ($\beta = .45$, $p < .001$) mattered more than the age of children prior to school entry.

5.1.2   Main Findings on the Association of Family Factors with School Readiness

School readiness of children was also examined as domain specific outcome measures at the interview prior to school entry and at 66 month interview. The associations of children's readiness outcomes, i.e. language skills, numerical understanding, social competence, and maternal perception of school readiness, with family factors are presented and discussed in this section.

5.1.2.1 Parental Education and School Readiness

Maternal and paternal levels of education were examined in the current research as important predictors of children's different readiness outcomes. The findings of the regression analyses indicated that the level of education of the mothers directly predicted children's language skills at the interview prior to school entry ($\beta = .09$, $p < .05$); and at 66-month interview ($\beta = .08$, $p < .05$). On the other hand, the association of maternal education level with children's numerical understanding, social competence, and maternal report of school readiness was insignificant after parenting behaviors were included in the models. Mothers' education level has been regarded as one of the most important factors in children's development in the existing literature, particularly when school readiness and academic skills are considered (Hupp, 2011). The findings of the current research were consistent with

the existing literature. Previous studies examining the association between maternal

education and children's development suggested that mothers' level of education

predicted the quality of home learning environment, affective and stimulating

interactions with children, which, in turn, predicted children's readiness outcomes

(Britto & Brooks-Gunn, 2006; Dearing, McCartney, Weiss, Kreider, & Simpkins,

2004). Similarly, stimulating parenting partially mediated the association of maternal

education with children's language skills while a full mediation role might be

inferred considering the association of maternal education with children's other

readiness outcomes (i.e. numerical understanding, social competence, and maternal

report of school readiness). It could be argued that the stimulating parenting might

not be the only mediator on the association of maternal education with children's

language skills since it only partially mediated the association. Various factors, such

as different types or sources of language stimulation might have been disregarded in

this study. Mothers with different levels of education might be using different types

of language stimulation; in other words, the use of reasoning while disciplining the

child, the frequency of play with the child during the mother-child interactions, or the

content of maternal speech with the child could be different for the highly and poorly

educated mothers (Hoff, 2003). In addition, the support resources of mothers might

be providing further stimulation to children for their language skills (Baydar, et.al.,

in press).

In recent years, there has been an increased understanding of fathers' role in child

development through their interactions with their children (Yeung, Sandberg, Davis-

Kean, Hofferth, 2001; Lewis & Lamb, 2003). Previous research provided conflicting

findings regarding paternal education; some suggested that paternal education failed

to predict children's developmental outcomes directly (Hupp, 2011) whereas others

found that fathers' education level and their interaction with their children had direct

effects on children's literacy skills (Tamis-LeMonda et. al., 2004). Consistent with

the previous findings, the current research found that paternal education (i) directly

predicted children's language skills at 66-month interview ($\beta = .08$, $p < .05$); (ii)

indirectly predicted social competence at 66 month interview through stimulating

and punitive parenting, and (iii) indirectly predicted children's numerical

understanding at both time points through stimulating and responsive parenting; and

(iv) indirectly predicted maternal perception of school readiness at 66 month

interview through stimulating parenting. It could be suggested that fathers' level of

education might be associated with their interactions with their children and

involvement in their development. Although the fathering practices were not

measured in this study, it could be suggested that fathering behaviors might have

mediated the association of paternal education with children's numerical

understanding, social competence, and maternal perception of school readiness.

5.1.2.2 Economic Status of Families and School Readiness

Economic status of the family was one of the most investigated predictors in

child development. It was found to be associated with various developmental

outcomes of children as well as school readiness and later academic achievement

(Bradley & Putnick, 2012). Congruent with the previous findings, this study found

that the economic status of families directly predicted children's readiness outcomes,

with the exception of numerical understanding at the interview prior to

school79entry. The association of economic status with children's numerical

understanding was insignificant after including the parenting behaviors in the

regression model. It could be highlighted that the association of economic status of

families with children's numerical understanding was indirect only when responsive

parenting was significant. Previous literature stated that economic status predicted

children's readiness through the parenting skills of mothers (Hill, 2001) which were

influenced by the psychological well-being (i.e. parenting stress) of mothers, or the

quality of the home environment (Isaacs, 2012; Bradley & Putnick, 2012). Therefore,

it could be suggested that when parents were responsive ($\beta = .09$, $p < .05$), economic

status of families no longer played a direct role in children's school readiness ($\beta =$

$.05$, $p = .33$).

In this study, the moderating role of economic status on the association of

support resources with children's readiness outcomes at 66-month interview was also

examined. The findings indicated that economic status of families moderated the

association of social support received from the spouse with children's language skills

($\beta = -.09$, $p < .01$), numerical understanding ($\beta = -.09$, $p < .01$), maternal perception

of school readiness ($\beta = -.06$, $p < .05$), and composite school readiness ($\beta = -.08$, $p <$

$.05$) at 66-month interview. In order to understand how high and low levels of

spousal support were influential on children's readiness outcomes, further analyses

were conducted. For high and low levels of spousal support and economic status, 2.5

standard deviations above and below the means were estimated. The means for

readiness outcomes were predicted by weighting the estimated low and high spousal

support and economic status scores by their regression coefficients while keeping the

other predictors constant (the mean scores were used). These predicted means

indicated that for higher levels of economic status of families, support received from

the spouse was negatively associated with children's readiness outcomes.

Specifically, for the high economic status families, language skills of children were

higher when mothers received less support from their spouses ($M_{predicted}$= 0.59, CI=

0.34 – 0.85) when compared to mothers receiving more support ($M_{predicted}$= 0.12, CI=

-0.02 – 0.26). For the other readiness outcomes (i.e. numerical understanding,

maternal perception of school readiness, and composite school readiness), a similar

pattern was observed; however, the predicted means for high and low support groups

did not significantly differ from each other for the high economic status families. The

possible mechanism to explain why children's language skills were lower when

spousal support was higher could be that fathers might be highly supportive and

available only when there is a problem with the mothers preventing them from using

effective parenting strategies with their children; such as psychological or physical

health problems, or presence of a young sibling. In addition, the literature suggested

that fathers were more involved in children's development when children performed

lower on academic tasks than their children performed on average or high (McBride,

Dyer, Liu, Brown, & Hong, 2009).

In order to understand whether the low spousal support was associated with the

existence of psychological symptoms of mothers at the high economic status group,

or not, an interaction term was calculated with the mean centered values of total

psychological symptoms, economic status, and spousal support. The interaction term

entered at the third step of the regression model to predict children's language skills

at 66 month interview after the economic status, psychological symptoms, and the

support resources were controlled. The interaction of maternal psychological

symptoms with the economic status of families and the support received from the

spouse significantly predicted children's language skills (β = -.07, p < .05) at 66

month interview. Further analyses with the predicted means revealed that although

the language skills of children whose mothers reported low spousal support and more

symptoms ($M_{predicted}$= 0.33, CI= 0.17 – 0.49) tended to be higher than children whose

mothers reported high spousal support and more symptoms ($M_{predicted}$= 0.29, CI=

0.11 – 0.46) and children whose mothers reported low spousal support and less

symptoms ($M_{predicted}$= 0.17, CI= -0.01 – 0.36) at the high economic status group, the

predicted means did not differ from each other significantly (see Figure 5.1).

Figure 5.1 The predicted means of Language Skills at 66 Month Interview with Low
and High Economic Status, Psychological Symptoms, and Spousal Support Groups
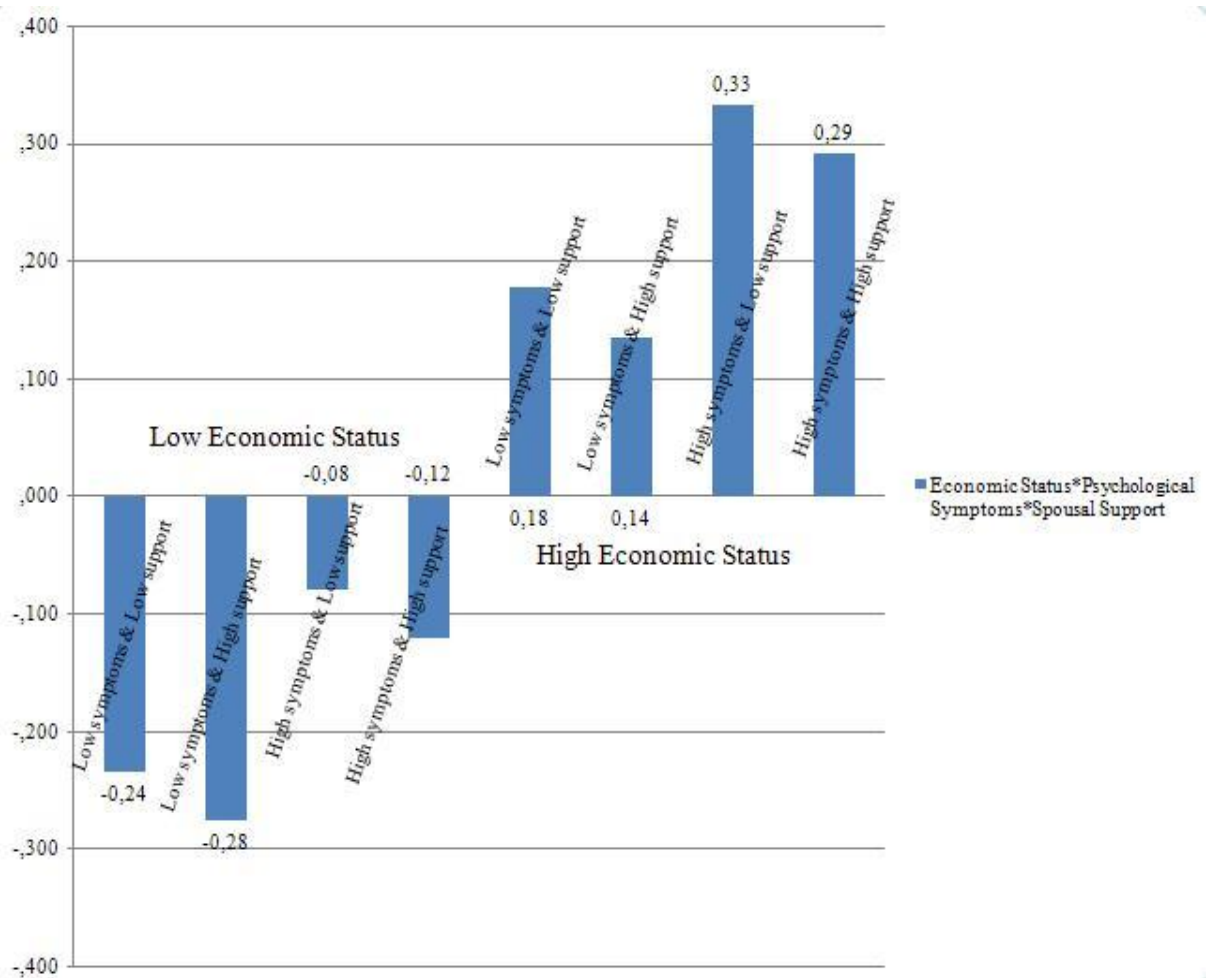
The tendency of higher scores in language skills of children at the presence of both risk factors (high psychological symptoms and low spousal support) could be attributed to the availability of other support resources, which might be playing an important role to reduce the negative influence of low support on children's language skills. A similar finding was found in the literature indicating that the language skills of children of depressed mothers were not lower when compared to children of not depressed mothers since depressed mothers received more support from the extended family members and from the neighborhood; which stimulated children for better language skills (Baydar, et.al., in press).
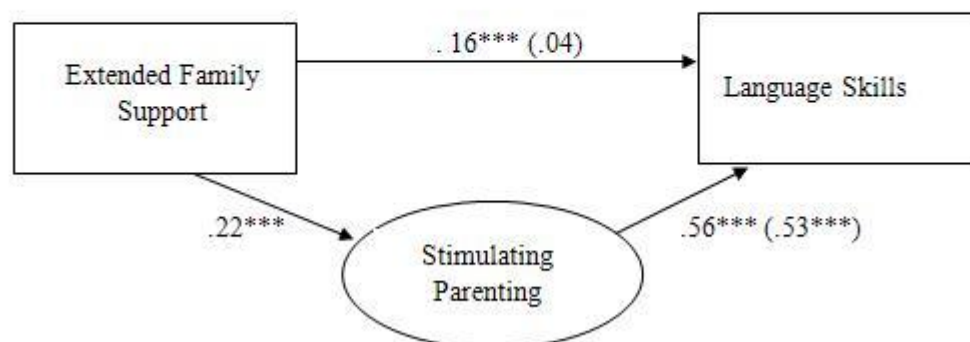
5.1.2.3 Social Support and School Readiness

In this research, two types of support resources; namely, the support received from the spouse, and support received from the extended family members, were considered as important predictors of children's readiness measures. Previous research suggested that social support received from different sources was associated with mothers' better psychological well-being and parenting skills, and lower distress (Simons, Lorenz, Wu & Conger, 1993). In this study, support resources of mothers were expected to directly or indirectly predict children's readiness for school. Although support resources did not predict the composite readiness of children at either time point, the significant contributions of support were observed for other domain specific readiness measures.

The support received from the extended family members directly predicted children's numerical understanding ($\beta = .09$, $p < .05$) at the interview prior to school entry, and indirectly predicted children's language skills through stimulating

parenting at 66-month interview (β = .04, p = .14) (see Figure 5.2). The indirect

association of family support with children's language skills was consistent with the

previous literature findings suggesting that the support available to mothers

promoted the parenting skills of mother, which led to better developmental outcomes

of children (Salzinger, 1990; McConnell, Breitkreuz, & Savage, 2011). Moreover,

this study contributed to the existing literature by documenting the direct association

of family support with children's numerical understanding. While previous research

emphasized that the support resources of mothers were associated with mothers'

parenting skills and children's social development, this study found the direct

association of family support available for mothers with children's cognitive

outcomes. Therefore, it could be suggested that the availability of extended family

members might provide children a variety of interactions and stimulation for

children's learning.

Figure 5.2 The Mediating Effect of Stimulating Parenting on the relation between Extended
Family Support and Language Skills at 66 Month Interview

The second support resource, i.e. the support received from the spouse,

directly predicted children's social competence and maternal perception of school

readiness at the interview prior to school entry. In other words, children showed

better social skills and readiness scores in the presence of more positive and

supportive parental relationship. It can be suggested that this positive and supportive

relationship between spouses might lead to a high quality and positive learning

environment for better social skills and readiness of children through observing the

positive communication and problem solving in interactions between parents

(Martin, Ryan, & Brooks-Gunn, 2010). On the other hand, the support received from

the spouse had a negative association with children's numerical understanding at the

interview prior to school entry. This finding could be supported and explained by the

previous findings in the literature suggesting that fathers were involved when

children showed low performance in academic tasks (McBride, et.al., 2009). This

negative association might challenge the proposed conceptual model, which

suggested that support received from the spouse was positively associated with

children's school readiness. However, the negative association of spousal support

might imply a reverse causal relation between fathers' involvement and children's

readiness for school.

Support received from the spouse was not associated with children's

readiness outcomes at 66-month interview; however, the economic status of the

families was found to moderate the association of spouse support with children's

readiness outcomes at 66-month interview. In other words, for the higher levels of

economic status, the spousal support was negatively associated with children's

language skills, numerical understanding, maternal perception of school readiness

and composite readiness at 66-month interview. Since the association of spousal

support with children's readiness outcomes was moderated by the economic status of

families, spousal support was not found to directly predicting children's readiness for school at 66 month interview.

5.1.2.4 Parenting and School Readiness

In this study, parenting practices, which were conceptualized as the stimulating, responsive, and power assertive behaviors of mothers, had significant contributions to children's school readiness. Stimulating parenting was found to be one of the most significant predictors of children's readiness for school at both time points. Being responsive and using physical/harsh punishment towards children predicted children's numerical understanding and social competence. These associations were consistent with the previous literature suggesting that different parenting behaviors were associated with different developmental outcomes of children (Chazan-Cohen, et.al, 2009; Hindman & Morrison, 2012).

First, stimulating parenting was found to be consistently predicting children's school readiness measures at both time points. That is, the availability of learning materials, and provision of academic stimulation and language stimulation, which comprised the stimulating parenting, were the most significant contributors of children's readiness for School. The previous literature supported these findings. The stimulating interactions of parents with their children, and an enriched home learning environment was associated with children's cognitive and social skills; and better preparedness for school (Rijlaarsdam et. al., 2013; Foster, Lambert, Abbott-Shim, McCart, & Franze, 2005).

Second, responsive parenting, which referred to the warm attitude of mothers towards children by listening, responding to, and appreciating the child, was

positively associated with children's numerical understanding at the year prior to

school entry ($\beta = .09$, $p < .05$). This finding was consistent with the literature

findings suggesting that parents' supportiveness and warmth was associated with the

cognitive dimension of school readiness (Walker & MacPhee, 2011). On the other

hand, responsive parenting did not predict other readiness outcomes (i.e. language

skills, social competence, and maternal report of school readiness). Responsive

parenting appeared as a significant predictor only when the predictive power of

economic status was lower for children's numerical understanding when compared to

the other regression models. The association of responsive parenting with children's

readiness for school could be moderated by the economic status of families. In order

to examine the nature of this association, the interaction of economic status with

responsiveness was examined for children's readiness outcomes. An interaction term,

which was calculated with the mean centered responsiveness and economic status

scores, was entered at the fourth steps of the regression models, after economic status

and responsive parenting was controlled. The results revealed that economic status

moderated the association of responsiveness with children's social competence ($\beta =$

$.10$, $p < .01$), maternal report of school readiness ($\beta = .10$, $p < .01$), and composite

readiness scores ($\beta = .09$, $p < .01$) at 66 month interview. However, further analyses

indicated that there was no significant difference between the predicted means of low

and high responsiveness groups.

Third, physical/harsh punishment predicted children's social competence at both

time points. Harsh disciplining strategies of parents referred to mothers' using

physical punishment and restriction as disciplining strategies, negatively predicted

children's social skills as suggested by previous research findings (Amato & Fowler,

2002). Although the previous research found that the association of harsh

punishment with children's social behaviors was mostly based on other family

factors (e.g. economic status, marital conflict, or parental stress and depression)

(Chazan-Cohen, et. al., 2009), this research showed that physical/harsh punishment

directly predicted children's social competence at the interview prior to school entry

(β = -.12, p < .01), and at 66-month interview (β = -.13, p < .001).

To conclude, different dimensions of parenting had direct associations with

children's different readiness measures and overall readiness, consistent with the

previous literature findings (Hindman & Morrison, 2012). More specifically,

stimulating parenting had important contributions to the children's cognitive, social-

emotional, and behavioral readiness for school. Responsive parenting directly

predicted children's cognitive skills, and using harsh punishment to discipline

children predicted children's social skills and overall readiness.

5.2 Contributions

One contribution of this research is that it examines school readiness as a multi-

dimensional concept with cognitive, social-emotional, and behavioral domains.

School readiness, in this research, was studied with both domain specific outcomes,

and a composite readiness score combining the language skills, numerical

understanding, social competence, and maternal perception of school readiness.

Calculating a composite score allows a summary school readiness indicator that can

be used as a single score representing various developmental domains. Identifying

children who are not ready for school on the basis of a composite readiness score

might be helpful for future policy implications. Since the validation of this composite

readiness score was not addressed in this study, the cut-off scores for identifying

children as ready or not could not be determined.

Another contribution of this study is that it considers two different time points

to understand how family factors are associated with children's readiness for school

both at the interview prior to school entry and at the interview when children were at

66 months of age. The latter time point sheds light to what extent children are ready

at 66 months of age; when children are expected to start formal education in Turkey

according to the new educational policy. It is important to note that the educational

policy of Turkey had not been changed when the data collection was conducted.

Therefore, the ages of children at the interview prior to school entry (M=71) were

higher on average than the ages of children at 66-month interview (M=64). Despite

an age difference between two time points, the composite school readiness scores at

both time points were predicted by the same family factors. This might be explained

by the low rates of preschool attendance of children in the sample (Baydar, et.al.,

2010); thus, the family context appeared as the main developmental context of

Turkish children. That is, similar family factors were associated with children's

readiness for school at different time points.

Various findings of this study, which are inconsistent with the existing

literature, might shed light on the underlying mechanisms of family factors in

Turkish context to predict children's readiness for school. For instance, the role of

economic status on the association of spousal support with children's readiness for

school was examined in detail at 66 month interview. Unlike to the previous

literature findings, spousal support was found to be negatively associated with

children's readiness; i.e. language skills, especially for the high economic status families. This finding might imply that fathers, that are less likely to be involved in children's development in Turkish families, became more involved and were more supportive to their spouses when there was a serious problem; such as, psychological symptoms of mothers, which prevented mothers to show efficient parenting. Moreover, responsive parenting, which was considered as one of the most important parenting dimensions for children's positive development and learning, could not be found as a significant predictor of children's readiness for school unlike the previous literature. The association of responsive parenting with children's readiness outcomes was moderated by the economic status of families; however, children's readiness did not differ significantly for high or low responsiveness of mothers. Such a finding might be attributed to the overall high perception of responsiveness in Turkish families (Erkman & Rohner, 2006); in other words, responsive parenting and warmth of mothers towards their children could be perceived high in Turkish context that responsiveness did not appear as a differentiating factor for children's readiness for school. Furthermore, responsiveness and warmth in mother-child interactions mattered only when equal amounts of stimulation was provided to children (Karaaslan, Diken, & Mahoney, 2011); which was consistent with the findings of this study, indicating that stimulating parenting was a stronger predictor of children's readiness for school than responsive parenting.

Another contribution of this study was showing the different associations of family factors with children's domain specific readiness outcomes at different time points. For example, fathers' level of education predicted children's readiness measures at 66 month interview; however, it was not associated with children's

language skills, social competence, and maternal perception of school readiness at the interview prior to school entry. It could be concluded that fathers' level of education mattered more for children's developmental outcomes at a younger age (i.e. at 66 month interview) than an older age (i.e. at the interview prior to school entry). It could be inferred that fathers were involved in children's development before children start school; as children went into school, they were less involved. Moreover, the support resources of mothers, particularly support received from the spouse were associated with children's readiness measures at the interview prior to school entry, but not the measures at 66 month interview. Considering this difference, a reverse association might be inferred; in other words, the support resources of mothers were involved in children's development when children are delayed to start school.

The study deals with the family dynamics as a whole to predict children's outcomes, which gives an understanding of which factors function as risk or protective factors in child development in Turkish context. These findings might be beneficial for intervention and policy implications addressing the specific needs of Turkish families. In other words, since the education level of parents and preschool attendance of children are low in Turkey when compared to the Western samples, family factors are more strongly associated with children's developmental outcomes than the community-level factors. Future policies and intervention programs addressing the family factors, such as (i) improving the parenting skills through parent education; (ii) promoting the supportive relationship between mothers and fathers; (iii) increasing the support resources of mothers, might be developed in the

light of the findings of this study which indicates the association of family factors

with children's readiness for school.

This study contributes to the existing literature through delineating the direct

association of fathers (i.e. paternal education level and spousal support) with

children's readiness while previous research could not find the direct association of

fathers with children's developmental outcomes (Hamre & Pianta, 2001). It is

important to emphasize that, in the Turkish context, the majority of families are

intact; thus, the availability of fathers at home might directly play a role on children's

readiness for school.

5.3 Limitations

This research has several limitations to consider. First, participant attrition is a

major concern of longitudinal research. However, the attrition rates are low in

ECDET Project over 4 years of data collection. The attrition rates were 12%, 5%,

and 6%, respectively, which led to missing information while selecting the outcome

measures from the second, third, and fourth waves of data collection for 10% of

children in the total sample.

Another limitation might be the time lag between the measurement points of

parenting behaviors and the outcome measures of children, which might reduce the

predictive power of responsive and punishing parenting on children's readiness.

Although stimulating parenting consistently predicted children's readiness outcomes,

the responsive and punishing parenting did not. The previous literature suggested

that the responsive and supporting parenting was associated with children's readiness

for school through the stimulating parent-child interactions (Britto & Brooks-Gunn,

2006). Therefore, it could be suggested that responsive and warm parenting might be provided to children during stimulating mother-child interactions. However, the validation of stimulating parenting was not examined in this study, which might limit the interpretation of the findings.

This study calculated a factor score for stimulating parenting consisted of the provision of learning materials, language and academic stimulation to children. This factor score significantly predicted children's readiness for school; however, this study did not do the validation of stimulating parenting concept. In other words, the association of the stimulating parenting with other parenting dimensions was not investigated.

The parenting practices that were considered in this study assessed mothers' interactions with their children. Although this research found the direct association of fathers' level of education with children's outcomes, it did not examine the fathers' parenting practices. The absence of this information prevented analyses of links between fathering and school readiness. Future studies could focus on fathering during the early years of development in order to shed light on how fathers are influential through their interactions with their children or through their relationships with the spouses.

Finally, children who were ready for school at an early age were disregarded in the analyses of this study. In other words, 71 children in this study, which constituted 6 % of the total sample, started school at the third data collection wave, which corresponded to children's 5 years of age (M=66.96 in months, SD=3.82). Although further analyses addressing these early starters were not conducted in order to

understand the predictors of early readiness for school, this did not limit the

understanding of family influences on readiness for school.

5.4 Future Studies and Policy Implications

The findings of the current study might suggest several points for future studies

and developing policies in Turkey: (1) the longitudinal approach to family factors;

(2) validation studies of composite school readiness concept; (3) studying fathers'

parenting behaviors; (4) validation studies for stimulating parenting; (5) addressing

the improvement of family factors for better readiness for school.

First, this study investigated the association of the family factors selected from

the first or second waves of data collection with children's readiness outcomes

selected from the second, third, or fourth waves of data collection. Due to this time

gap between the predictors and children's outcomes, the possible changes in family

factors which could affect children's readiness for school could not be identified.

Therefore, future studies should investigate the longitudinal path of family factors

(i.e. economic status of families, support resources of mothers and parenting

behaviors) to understand how the changes in these factors are associated with

children's readiness for school.

Second, this study calculated a composite readiness score in order to examine

how family factors are associated with a school readiness score with multiple

dimensions. However, the association of the composite readiness score with the

school adjustment and academic performance of children was not examined in this

study. Future research might consider examining the validation of the composite

school readiness score with cognitive, social-emotional, and behavioral

developmental dimensions in order to indicate how this multidimensional school readiness would be associated with children's actual school performance.

Third, the importance of father-child interactions has been recently studied in the Turkish context (Kağıtçıbaşı, 2007) although this study did not focus on the fathering behaviors. For future research, it could be suggested that parenting could be defined comprehensively; that is, parenting concept could be reconsidered by including the fathers' parenting behaviors (Cabrera & Peters, 2000). Finally, several policy implications could be suggested in the light of the findings of this study. In the Turkish context, the disparity between children from economically advantaged and disadvantaged families in terms of reaching the educational opportunities leads to the increased gap of achievement starting from the early years of schooling through the following years. In other words, children who are in financially disadvantaged families are less likely to have a high-quality learning environment at home. Considering the family factors studied in this research, several main policy implications could be suggested for Turkish context. To begin with, intervention programs should be developed and implemented in order to improve the home learning environment through promoting stimulating parenting. Children who are under risk of poor preparedness for school due to poor parental education and financial constraints might benefit from the enriched learning environment and stimulating interactions with their parents for better readiness for school. For the parents who are poorly educated, training programs could be developed in order to promote stimulating behaviors of them. A previous intervention program, Turkish Early Enrichment Project, proved that improving the parenting skills of mothers to support children's cognitive and social-emotional skills in financially disadvantaged

families was beneficial for children's future educational attainment, occupational status, and financial well-being (Kağıtçıbaşı, 1997; Kağıtçıbaşı, Sunar, Bekman, & Baydar, 2009). Furthermore, since the importance of fathers' educational attainment and supportiveness towards their spouses was found in this study, policies addressing the parenting skills of fathers could be developed in order to include fathers in children's development in Turkey. Previous intervention programs addressing the father involvement in child development in Turkey indicated that the training programs for fathers improved the quality of the communication and interaction with their children and promoted warmer and authoritative parenting of fathers (Atmaca-Koçak, 2004). Developing home-based educational programs could be suggested as a way to reach out poorly educated fathers, who might be reluctant to attend center-based trainings, in order to improve the quality of father-child interactions and to promote the supportive relationship between spouses (for review, see Palm & Fagan, 2008).

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