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THE EFFECT OF BACKGROUND MEDIA ON EARLY CHILDHOOD LANGUAGE DEVELOPMENT

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THE EFFECT OF BACKGROUND MEDIA ON EARLY CHILDHOOD LANGUAGE DEVELOPMENT

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Approval of the Graduate School of Social Sciences

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I certify that this thesis satisfies all the requirements as a thesis for the degree of Master of Science.

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This is to certify that we have read this thesis and that in our opinion it is fully adequate, in scope and quality, as a thesis for the degree of Master of Science.

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ABSTRACT

THE EFFECT OF BACKGROUND MEDIA ON EARLY CHILDHOOD LANGUAGE DEVELOPMENT

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The current study aimed to investigate the background media effect on toddlers' language development and also the moderator role of child temperamental characteristics namely inhibitory control, attention shifting, attention focusing and perceptual sensitivity. In total, 100 mothers of children between the ages of 16-26 months (M_{age} = 20.18 months) participated. Two home visits were made. In the first visit, mothers filled out the Early Childhood Behavior Questionnaire (ECBQ) to assess the child temperament, and asked to fill out the Media Diary during a week for background media exposure information. In the second visit, the Home Environment Questionnaire including Parental Media Attitudes questions to learn developmental stimulation in the home besides parental attitudes toward child media use, and the TİGE-II measuring child language development were administered. Total background

media exposure was expected to be negatively associated with both language outcomes measured by the percentile of words produced and percentile of length of utterance. Further, these relationships were expected to be more powerful for children with high perceptual sensitivity and with low inhibitory control, attention focusing and attention shifting temperaments. Results indicated non-significant main effect of the amount of background media exposure in both the percentile of words produced and the length of utterances. However, moderation analysis showed that when the amount of background media exposure interacted with perceptual sensitivity, more exposure predicted lower percentile of the length of utterance for children with high perceptual sensitivity. The findings, contributions, limitations, and suggestions were discussed.

Keywords: media, background media, temperament, language development

ÖZ

ERKEN ÇOCUKLUK DÖNEMİNDE ARKA PLANDA AÇIK OLAN MEDYANIN DİL GELİŞİMİNE ETKİSİ

Karakaya, Seçil

Yüksek Lisans, Psikoloji Bölümü

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Bu çalışmanın amacı arka planda açık olan medyanın, çocukların dil gelişimleri üzerindeki etkisini ve çocukların mizaç özelliklerinin (algısal hassasiyet, engelleme denetimi, dikkat odaklama ve dikkat çevirme) bu ilişkideki düzenleyici rolünü incelemektir. Katılımcılar, 16-26 ay yaş aralığında ($M_{yaş}$ = 20.18 ay) çocuğu olan 100 anneden oluşmaktadır. Veriler, iki ayrı ev ziyareti yapılarak elde edilmiştir. İlk ev ziyaretinde annelere, çocuklarının mizacını değerlendirmek için Çocuk Davranış Anketi (ECBQ) uygulanmış ve arka planda açık olan medyaya maruz kalma bilgileri için bir hafta boyunca Medya Günlüğü doldurmaları istenmiştir. İkinci ziyarette ise, evdeki gelişimsel kaynakların yanı sıra ebeveynlerin çocuğun medya kullanımına

yönelik tutumlarını öğrenmek için, Ebeveyn Medya Tutumları sorularını da içeren Ev Ortamı Anketi uygulanmıştır. Çocukların dil gelişim düzeyi bilgisi için de TİGE-II kullanılmıştır. Arka plandaki medyaya maruz kalma süresinin, hem söylenen kelime sayısına hem de kurulan cümle uzunluğuna bağlı yüzdelik dilim ile ölçülen dil gelişimiyle negatif ilişkili olması beklenmiştir. Ayrıca, bu ilişkilerin yüksek algısal hassasiyeti olan ve düşük engelleme denetimi, dikkat odaklama ve dikkat çevirme mizaç özellikleri olan çocuklar için daha güçlü olması beklenmiştir. Yapılan analizlerde, arka plandaki medyaya maruz kalma süresi ve çocukların dil gelişimi arasında istatiksel olarak anlamlı bir ilişki bulunamamıştır. Ancak, ılımlılık analizi sonuçları, çocuklardaki algısal hassasiyet mizaç özelliğinin bu ilişkide anlamlı bir düzenleyici role sahip olduğunu göstermiştir. Buna göre, arka plandaki medyaya maruz kalma süresi, algısal hassasiyeti yüksek olan çocukların kurduğu cümle uzunluğuna bağlı yüzdelik dilimini olumsuz olarak yordamaktadır. Bulgular, katkılar, sınırlılıklar ve gelecek çalışmalara öneriler literatür ışığında tartışılmıştır.

Anahtar Kelimeler: medya, arka planda açık olan medya, dil gelişimi, mizaç

To all silenced children

We have to be the voice

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CHAPTER 1

INTRODUCTION

1.1 Overview

Children can recognize and discriminate the sounds and the speech even before they are born (Shahidullah & Hepper, 1994; Voegtline, Costigan, Pater, & DiPietro, 2013). But, language production begins at around their second month with cooing and proceeds with babbling at around fourth month and then with babbling becomes more speech-like sounds at around seventh month. And, the first word production begins at around 12th month and proceeds to combining two words at around 18th month and finally to complex utterances with multi-words and grammatical morphemes from about age 3 (Berk, 2006).

Language development is affected by a number of factors, some are dependent on the characteristics of children and others are parental or environmental characteristics. For example, both maternal child-directed speech (CDS) and children's speech processing skills in infancy were found as predictors of the later language development (Newman, Rowe, & Bernstein Ratner, 2016). Child care quality, language input characteristics of parents (Hoff-Ginsberg, 1991; Pancsofar & Vernon-Feagans, 2006), home environment quality (Bradley, Corwyn, Burchinal, McAdoo, & Coll, 2001; Chang, 2017; Rodriguez & Tamis-LeMonda, 2011), socio-economic status of family (Hoff, 2003; Rice & Hoffman, 2015; Short, Eadie, Descallar, Comino, & Kemp, 2017) and temperament of children (Dixon & Smith, 2000; Gartstein, Crawford, & Robertson, 2008; Salley & Dixon, 2007) are among related factors to language outcomes of children.

One of the environmental factor called the attention of researchers is media exposure. Children's exposure to media shown to be influential on language development especially before the pre-school age (Chonchaiya & Pruksananonda, 2008; Tomopoulos et al., 2010; Zimmerman, Christakis, & Meltzoff, 2007). There are some studies showed the negative effect of the background media exposure both on language development of children (Masur, Flynn, & Olson, 2016) and on the quantity of parental child-directed-speech (Pempek, Kirkorian, & Anderson, 2014). Likewise, some studies touch upon the detrimental effect of background noise on child language development where background media is the primary source of the noise (Christakis et al., 2009; Erickson & Newman, 2017).

Therefore, in the light of the literature, the purpose of the current study is to investigate the effect of background media (TV/any kind of audio-visual media) on the language development of 16 to 26 months-old toddlers in Turkey. The current study also aimed to examine moderator role of child temperamental characteristics namely inhibitory control, attention shifting, attention focusing and perceptual sensitivity.

Thus, in the following sections, firstly the literature about the general effect of media on child development will be explained. Secondly, media effects on physical, socio-emotional development and well-being of as well as cognitive development will be given. Then, the effects of media exposure on language development, and general implications of background media exposure on child development will be stated. In the final section, the impact of background media exposure on language development will be reviewed shortly before introducing the current study.

1.2 Media Effects on Child Development

Nowadays, parents are curious about how children are affected by the content and duration of what they watch, how children can benefit from the media, and how can parents protect their children from the negative effects of the media. As technology advances and media tools have become more easily accessible and usable even for infants, media started to have an important role in the lives of young children and even infants. Thus, investigations regarding the possible effects of media exposure on

various areas of child development have gained critical importance. The importance of media exposure on the development of young children was also emphasized by the American Academy of Pediatrics (AAP) in their published policy suggestions regarding the need of giving educations to parents to prevent media exposure and media use of their children under the age of two years (AAP, 1999). AAP (1999) based this suggestion on the growing literature which brings the adverse short or long-term health effects of early media exposure. AAP Council on Communications and Media also published a policy statement in 2016 which advises parents not to expose their children to screen media before the age of 18 months. Further, they suggested that for children between the ages of two and five years, daily media use of children should be limited to less than an hour (AAP, 2016).

The literature about the effects of media especially on the development of young children mainly focuses on the television exposure rather than other media tools mostly because of the availability and common usage of it. However, recently studies started to pay attention to new technologies like touch screens which have become an essential part of life lately. When the findings examined, it was seen that media exposure have different impacts based on the area of child development and the findings are mostly pointing out the detrimental effects of exposure to non-educational, older children or adult directed media contents for children before the pre-school years (Tomopoulos et al., 2010; Hanson, 2017) Furthermore, not only the negative effects of direct media exposure but also the negative effects of background media exposure has been reported (e. g., Schmidt, Pempek, Kirkorian, Lund, & Anderson, 2008; Pempek, Kirkorian, & Anderson, 2014).

1.3 Media Effects on Physical, Socio-Emotional Development and Well-being of Children

The literature focusing on the effects of media exposure on physical development and general well-being of children is extensive, although the effects on the infants and toddlers are limited. For example, Özmert, Toyran and Yurdakök (2002) conducted a study by primary schoolers and found that the total time spent by viewing television is

reversely associated with academic and social achievements, while it is positively associated with behavioral problems of aggressive, delinquent, externalization, withdrawn behaviors and social problems. In a recent study conducted with 6-17 years old school-age children found that the amount of digital media they exposed to in weekdays was negatively related to their parent-reported behaviors of showing interest in learning, caring about academics, completing homework, finishing tasks and staying calm when challenged, as indicators of child's academic development (Ruest, Gjelsvik, Rubinstein, & Amanullah, 2018). Furhermore, the time spent watching television was negatively related to the observed physical activity level of 3-4 years old preschoolers and this was suggested to increase the subsequent obesity and other inactivity-related health problems (DuRant, Baranowski, Johnson, & Thompson, 1994). Regarding the media exposure effect on physical development of children younger than three, it was found that the frequency of being exposed to television and the chance of showing delays in motor development are significantly and positively related which may be explained by lack of activity while watching television (Lin, Cherng, Chen, Chen, & Yang, 2015).

Moreover, a study investigated the link between the amount of electronic media use of two and six-year-olds and their subsequent well-being in a dose-response manner. They found that the amount of time spent watching television was positively associated with poor family functioning both for boys and girls; whereas amount of time spent by computer use/electronic games was found to be positively related to subsequent emotional problems only for girls (Hinkley et al., 2014). Another study about the effects of television exposure in early life on later mental health problems of children showed that exposure to TV at 18 months significantly and positively related to the hyperactivity-inattention problems while negatively related to prosocial behaviors at 30 months of age (Cheng, Maeda, Yoichi, Yamagata, Tomiwa, & Japan Children's Study Group, 2010). Another study looking at the effects of daily television viewing on the sleeping habits of infants and toddlers between four and 35 months of age found that the amount of television children watched in a day was related to their aperiodic

naptime and bedtime routines which should be regular and are well known to be important for the physical development of children (Thompson, & Christakis, 2005).

1.4 Media Effects on Cognitive Development and Attention of Children

Media exposure has both long and short-term effects on the cognitive development of children. A longitudinal study examining the relationship between the amount of media exposure in infancy and later developmental consequences found that total duration of media exposure at 6 months of age was negatively related to cognitive development scores at 14 months of age. In the same study, those who were exposed to media showed lower cognitive scores when they were compared to those who had no exposure (Tomopoulos et al., 2010). Zimmerman and Christakis (2005) conducted a longitudinal study to see the effects of television viewing before the age of 3, between the ages of 3 and 5, and cognitive outcomes at 6-7 years of age. They controlled maternal education and IQ level as well as the cognitive stimulation levels. They found that amount of television viewing in a day before the age of 3 was adversely related to the cognitive outcomes of reading comprehension, reading recognition and digit span performance. However, they surprisingly found that television viewing between the ages of 3 and 5 had a positive impact on reading recognition outcomes of children at 6-7 years of age. These findings emphasize the critical importance of the very early television exposure on development. The delays seen in the cognitive development of children between 15 and 35 months of age also found to be related to the frequency of television exposure (Lin et al., 2015). Likewise, a recent longitudinal study found that total hours of co-viewed TV in infancy adversely predicted later working memory performance (Hanson, 2017).

In another longitudinal study, amount of television viewing at ages 1 and 3 were found to be associated with ADHD related attention problems at 7 years of age (Christakis, Zimmerman, DiGiuseppe, & McCarty, 2004). Furthermore, another prospective longitudinal study provided evidence for the idea that television exposure in early life lead to long-lasting adverse cognitive problems. They found that the amount of television viewing in childhood was related to attentional problems in adolescence

even after controlling for early attention problems and cognitive ability (Landhuis, Poulton, Welch, & Hancox, 2007).

1.5 Media Exposure Effects on Language Development

Research findings about the media effects on language development of young children are broad but inconsistent. The findings mostly differ based on the age of children, the amount, content and the context of the media they were exposed to. For example, a study examining the relationship between the media exposure and language development of children younger than two found that each additional daily hour of exposure to baby DVDs or videos was significantly related to the reduction in the language scores of children between 8 and 16 months of age, but not related to the language of children between 17 and 24 months of age. However, there was no significant association with media type and language development (Zimmerman, Christakis, & Meltzoff, 2007). Further, Chonchaiya and Pruksananonda (2008) found that watching TV more than two hours a day was a risk factor for language delay of children aged 15 to 48 months. Besides, in the same study, early onset (before the age of 12 months) TV watching and watching adult-directed programs were indicated as related to language delay. The risk ratio for language delay was stated as six times higher for children with early onset TV watching compared to the children with TV watching onset after their age of 12 month.

Regarding the effect of the context of media exposure, a longitudinal study investigated the verbal interactions of parents with their infants during the media exposure as a potential moderator and found that media exposure at 6 months of age was significantly and negatively associated with both total and receptive language scores at 14 months when there was no verbal interaction between children and parents (Mendelsohn et al., 2010). Moreover, Tomopoulos et al. (2010) in their longitudinal study about the association between the amount and content of media exposure in 6 months of age and subsequent developmental consequences at 14 months of age found that the total amount of media exposure at 6 months was negatively related to children's language development level. Across three program contents examined,

educational and non-educational young children directed and older children/adult-directed contents, only older children or adult-directed programs was found to be negatively related to language development at 14 months. In another longitudinal study examined the effects of media exposure from 6 months of age, on the language development of children at 30 months of age. Results indicated that based on the content some television programs were negatively related to the vocabulary knowledge and expressive language development (such as Teletubbies) at 30 months of age, whereas others (like Dora the Explorer) showed positive associations with these language skills (Linebarger, & Walker, 2005).

Although studies point out the effects of media exposure on child development, findings are inconsistent as the content of the media changes. For instance, in some studies the effects were mostly negative for young children even when the content was child-directed/educational and even when the parents co-viewed the media with their young children. For example, Krcmar (2011) in an experimental study examined the 4 to 23 months of age children's learning of new words from an infant-directed educational video versus live modeling. She found that children did not learn new words from the video whereas they learned from the live condition and the age did not affect the results. Furthermore, a recent longitudinal study investigated the effect of TV exposure in the presence of a parent in infancy (at 12-21 months of age) on the later language outcomes of children (at 6-9 years of age). The results showed that the total amount of co-viewed TV was adversely related to the story recall scores, used as a measure of receptive language skill. However, parent language in infancy did not moderate or mediate this relationship. Additionally, in the same study, amount of TV co-viewing in infancy negatively predicted the later vocabulary scores of children, used as a sign of productive language skill (Hanson, 2017).

1.6 The Effects of Background Media Exposure on Child Development

Literature about the effects of media on young children is relatively rich and varied as mentioned and exemplified above. But what about the effects of media exposure when children are not actively watching but passively encountered at the background during

daily routines? The effect of background media exposure is a brand new topic that needs to be discussed. Background media may adversely affect the child development by impairing the correct function of children's ongoing activity because it takes place by chance during daily activities of children when the active attention is not on the program, as it was defined (Anderson & Evans, 2001).

The literature regarding the effect of media exposure on children has indicated that very young children are mostly exposed to adult TV programs, although they pay very little attention and do not comprehend them (Anderson & Pempek, 2005). Anderson and Evans (2001) said that there are two distinct types of television children exposed to which are foreground and background television. They defined the programs which are not directed to children and children do not pay or pay very little active attention to as "background television" whereas they defined the programs directed to young children and get close attention from children as "foreground television". They emphasized that because the background exposure occurs accidentally while parents watching television it may intervene with the activity of children, disrupt the function of it and thus it may affect the development of children negatively. Anderson (2017) reported that distracting the infants and engaging the attention of parents are the two ways background media can affect infants negatively. He explained this by stating that children are not fully able to understand most of the media contents approximately before the age of 2.5 years and background media exposure happens if older people use them or media devices are left on in the environment while children are around.

Background media exposure is frequent, although parents rarely consider it as being influential on the child development. For example, Rideout, Vandewater and Wartella (2003) reported that two out of three zero to six years old US children are living in homes in which TV is frequently on at the background even no one watches.

Literature regarding the effects of background television specifically is scarce as compared to the general media exposure literature but is growing recently. Regarding the background television exposure on children, Kirkorian, Pempek, Murphy, Schmidt and Anderson (2009) conducted an observational study with children aged 12 months,

24 months and 36 months and their parents and detected that the background television disrupted parent-child interaction both qualitatively and quantitatively. This may explain the negative effects of background television exposure on children's later development, by reducing the total verbal interaction between parents and their children, parents' responsiveness to their children, and their attentiveness and involvement to their children. Another observational study about the impact of background television on young children at 12 months, 24 months and 36 months of age showed a disruptive background television effect on children's toy play behaviors. They reported that when there was a background television, children showed fewer total toy play behavior, fewer focused attention periods while playing and also briefer periods of play than they showed when there was no background television. This may be closely related to the possible adverse effects of background television exposure from very young ages on subsequent cognitive development (Schmidt, Pempek, Kirkorian, Lund, & Anderson, 2008). Moreover, a longitudinal research examined the background television programs children exposed to at 1 and 4 years of age and their cognitive outcomes at 4 years old, showed that high levels of background television exposure at both 1 and 4 years of age was related to fewer executive functioning skills including working memory, planning and organization skills. Further, high exposure only at 4 years of age was related also to fewer school readiness scores of children measured at same time point (Barr, Lauricella, Zack, & Calvert, 2010). Recently, Hanson (2017) addressed the effect of television exposure co-viewed with a parent in infancy on the later cognitive and learning performance of children in his longitudinal study. The results showed that the amount of background TV exposure, even when accompanied by the parent, during infancy negatively predicted the academic knowledge scores of children when they were 6 to 9 years of age but foreground co-viewed TV exposure did not.

1.7 The Effects of Background Media Exposure on Language Development

The literature specifically examining the relationship between the background media exposure and children's language development is limited compared to the foreground media effects on children's language development. Related to this issue, Christakis

and his colleagues (2009) conducted a prospective study with young children between 2 and 48 months of age by using observational methods. They focused on the effects of audible background/foreground television on verbal interactions between parents and their children. The results of this study showed that sound of television during the parent-child interactions was related to significant decreases in the vocalization of children, conversational turns and amount of parental words children exposed to which are important for language development. Although in this study discrimination between background and foreground television exposure was not made, these results may be considered as an indicator of the relationship between background television and delays in language development since background television exposure includes only the exposure to sound of television as children do not attend to the visual screen. Pempek, Kirkorian, & Anderson, (2014) conducted a study which specifically looked at the background television exposure and language development relationship. They found that when there was a background television, there was a decline in the total number of words, the number of new words, and utterances parents used per minute as compared to the condition in which there was no background television. Moreover, Masur, Flynn and Olson (2016) examined the relationship between the frequency of background media exposure during mother-child dyadic play and infants' vocabulary and maternal speech characteristics of their mothers longitudinally. They found an adverse relationship between frequent background TV exposure during dyadic play at home at 13 months and children's expressive vocabulary and the quantity of maternal speech at 17 months.

Both the effects of general media exposure and specifically the background media exposure on language development of young children has already been studied as exemplified above. However, they were mostly conducted on English speaking children. Therefore, the current study aimed to investigate the effects of background media exposure (television/any kind of audio-visual media) on the language development of Turkish toddlers between the ages of 16-26 months.

In the literature, the language development were shown to be affected by a number of factors. For example, family socio-economic characteristics regarded among the

environmental factors affecting language development. Among the SES characteristics, maternal education level frequently studied and the high maternal education was found as a protective factor for language development (Rice & Hoffman, 2015; Short, Eadie, Descallar, Comino, & Kemp, 2017). Home environment of children, including learning materials appropriate for child's age, academic and language stimulation given by parents, and the diversity of child's experiences creating opportunity for development, was also studied as important environmental factors for language development (Bradley, Corwyn, Burchinal, McAdoo, & Coll, 2001; Chang, 2017; Rodriguez & Tamis-LeMonda, 2011). Therefore, both the maternal education level and the home environment characteristics were taken as a control variables in the main analyses of the current study.

Besides the environmental effects, child related factors like temperament are also pointed out as related to language development. For example, Salley and Dixon (2007) found that the positive association exists between the levels of attention focusing, attention shifting, inhibitory control and language development in 21 months-old children. Furthermore, perceptual sensitivity which assesses the child's sensitivity environmental stimuli was positively associated with most of the language measures in the same study.

In addition to language development, temperamental characteristics of children are also found to be related to the amount of media exposure. For instance, it was found that children with high level of fussiness and activity level temperamental traits (Thompson, Adair, & Bentley, 2013) and also with low self-regulation skills which is one of the elements of the effortful control temperamental factor (Kochanska, Murlay & Harlan, 2000; Radesky, Silverstein, Zuckerman, & Christakis, 2014) were more likely to be exposed to media.

The literature shows that both the language development and the amount of media exposure of young children are affected by their temperamental characteristics. It can be interpreted that children with some temperamental traits are more prone to the negative effect of media exposure on their subsequent language skills by being

exposed to the media more than children without those traits. So, the language development of children with different temperamental characteristics may be affected by the background media exposure in different ways. For instance, Dixon & Salley (2007) reported that children with the longer attention span (referring to high attention focusing, high attention shifting and high inhibitory control) were less likely to be affected by the environmental distractors and thus, more able to learn new words whereas children with temperamental problems in attention showed disadvantages in word learning as they were affected more by environmental distractors. Similarly, children with high perceptual sensitivity may also be affected by the environmental distractors as they are able to detect even mild external stimuli (Putnam, Gartstein, & Rothbart, 2006). So, it is possible that children with low attention focusing, low attention shifting, low inhibitory control and high perceptual sensitivity temperamental characteristics may be more affected by the distractive effect of background media because they have problems with ignoring the stimuli they get from the background media they exposed to and sustain their attention to the ongoing activity. Thus, the current study also aimed to examine moderator role of child temperamental characteristics namely inhibitory control, attention shifting, attention focusing and perceptual sensitivity in the link between background media exposure and language development of toddlers.

The hypotheses of the current study are as follows:

1. Children's total exposure to background media would be negatively associated with their both language development measured by the percentile of words produced and percentile of length of utterance.

2. Child temperament dimensions of perceptual sensitivity, inhibitory control, attention shifting and attention focusing would moderate the background media exposure and language development association. Specifically, the negative relationship between the total amount of background media exposure and language development is expected to be more powerful for children with high perceptual sensitivity because they may be more open to the effects of background television as

they are able to detect even mild external stimuli. In addition, the negative association is expected to be stronger for children with low attention focus, attention shifting and inhibitory control because they have problems with ignoring the stimuli they get from the background media they exposed to and sustain their attention to the ongoing activity.

As explained above, the media exposure is related to the language development of children. On the other hand, the context, content and amount of media children exposed to are shown as being affected by parental attitudes/restrictions (Barr, Danzinger, Hilliard, Andolina, & Ruskis, 2010; Vandewater, Park, Huang, & Wartella, 2005). For this reason, the parental media attitudes were additionally analyzed with exploratory purposes.

CHAPTER 2

METHOD

2.1 Participants

A total of 104 mothers of children aged between 16 to 26 months were included in the study. However, four cases were excluded due to missing data, drop out and child starting to a preschool. Thus, the analysis was conducted on the data collected from 100 participants, 51 of them were girls and 49 of them were boys (M_{age} = 20.18 months, *SD* = 2.18). The age of participated mothers were between 25 and 42 (M_{age} = 32.97, *SD* = 4.02) and they were residing mainly in Ankara (89), İstanbul (7) and İzmir (3). All the mothers were married and living with their husbands except one who was married but living apart from her husband. 31 of participated mothers were not working whereas 69 of them were working during the data collection phase of the study. Besides, all fathers except one were working.

Table 2.1 Demographic Characteristics of the Participants (*N* = 100)

	Mothers	**Fathers**	**Children**
Age (Mean; SD)	32.97 years; 4.02	32.70 years; 4.52	20.18 months; 2.18
Education Levels (%)			
Illiterate	0	0	
Literate	0	0	
Primary School	0	1	
Secondary School	2	2	
High School	12	14	
University (undergraduate)	67	65	

Table 2.1 (continued)

	Mothers	Fathers	Children
Graduate	19	18	
Income Levels (%)			
0-1000TL	28	1	
1000-1500TL	2	1	
1500-2500TL	7	4	
2500-3500TL	31	28	
3500-5000TL	22	33	
5000TL and above	10	33	

In order to get information about family socio-economic status (SES), mothers were asked about the income and education level of themselves and their husbands' separately (see Table 2.1 for details). Education levels of mothers were ranged from middle school to graduate level. On the other hand, education levels of the fathers (M_{age} = 35.24, SD = 4.86) ranged from primary school level to graduate level. None of the children were reported as having a physical/psychological problem.

2.2 Materials

2.2.1 Demographic Information Form

Demographic information form included date of births, monthly income interval, parents' marital status (Married and living together/Married but living separately/Divorced/Widowed), education levels, occupation, current job status, and place of living, as well as family size, total number of children and their ages, pre-existing/existing physical/mental illness diagnosis (see Appendix A) were also included. The demographic information was used to show the general characteristics of the sample. However, education level of mothers was controlled in the analysis.

2.2.2 Temperamental Characteristics of Children

Early Childhood Behavior Questionnaire (ECBQ) was used to assess temperamental characteristics of children. Early Childhood Behavior Questionnaire (ECBQ) was developed by Putnam, Gartstein and Rothbart (2006) as a parent-reported temperament questionnaire for children between the age of 1.5 and 3 years old. It contains total of 201 items across 18 subscales of Activity Level, High-intensity Pleasure, Sociability, Positive Anticipation, Soothability, Shyness, Sadness, Impulsivity, Discomfort, Fear, Perceptual Sensitivity, Motor Activation, Frustration, Inhibitory Control, Attention Shifting, Low-intensity Pleasure, Cuddliness, and Attention Focusing. Questions originally designed as 7-point Likert Type, from '1=never' to '7=always' and also 'not applicable (NA)' option is available. Cronbach's alphas for subscales was found as ranging from .57 to .90 for different ages (for 18, 24, 30 and 36 months of age).

In the current study Turkish version (Ertekin, 2014) of Perceptual Sensitivity (15 items) (e.g. "While playing or walking outdoors, how often did your child notice flying or crawling insects?") and Inhibitory Control (13 items) (e.g. "When asked to do so, how often was your child able to lower his or her voice?") subscales with questions in 5-point Likert type of it with four additional items from Toddlers Behavior Assessment Questionnaire (TBAQ) (Goldsmith, 1996) were used. Cronbach's alphas were reported as .85 for Inhibitory Control subscale and .84 for Perceptual Sensitivity subscale (Ertekin, 2014). Further, Attention Shifting (12 items) (e.g. "While you were talking with someone else, how often did your child easily switch attention from speaker to speaker?") and Attention Focusing (12 items) (e.g. "When engaged in play with his/her favorite toy, how often did your child play for more than ten minutes?") subscales of ECBQ were translated into Turkish for the current study through translation back-translation method. There were total of 52 questions responded by parents in 5-point Likert type (1= never, 2= rarely, 3= sometimes, 4= often, 5= always). In the current study, Cronbach's alpha coefficients of Perceptual Sensitivity, Inhibitory Control, Attention Focusing and Attention Shifting, were found as .65, .87, .82 and .67 respectively after deleting one item from perceptual sensitivity and four items from attention shifting subscales.

2.2.3 Background Media Exposure of Children

The total amount of background media exposure of children was measured by diary method. Mothers and other caregivers who care for the child filled out a daily media diary for a week. Diary questions were developed for the current study tapping waking and sleeping hours of the child, the total duration of television or video exposure, the type and frequency of media programs at the background, and the total duration of active viewing of child for each program in minutes/hours (see Appendix B). The weekly total background media exposure of children was used in the analysis. It was calculated by subtracting the weekly total of active viewing from the weekly total time television or video was on at the background.

The prevalence of TV ownership and usage is less often compared to the past. TV is replaced with new screen media technologies and computers especially among upper-middle and high SES families. Thus, while the media exposure was calculated in the current study, exposure from any kind of audio-visual screen media tools (like TV, DVDs, videos watched on computer/tablet etc.) were considered. However, media exposure while children were actively interacted with the media tool rather than passively exposed to, like playing tablet games, and exposure to the pictures on the phone, were not included.

2.2.4 Home Environment

Home Environment Questionnaire (HEQ) (Miser & Hupp, 2012) and HOME scale (Bradley & Caldwell, 1984; EGÖ-TR; Baydar & Bekar, 2007) were adapted within the scope of a TUBITAK project (Berument, & Sumer, 2013-2016) to assess the developmental stimulation and resources in the home environment of children between the ages of one and three. This caregiver-reported 19 items adapted HEQ version was used in the current study. The items essentially involves whether books, toys or CDs/DVDs are available in their home environment; whether children expose to activities such as reading books, teaching numbers, letters, words, colors, and shapes and outside activities (e.g. “Does your child have toys like blocks, Legos?”) (see Appendix C).

When the total scores of HEQ computed for the analysis, the coding schemas of original HEQ (Miser & Hupp, 2012) were followed. All the 19 questions were coded ranging from 0 to 5 (e.g. if no one in the home did read stories to the child or read few times a year, it was coded as 0; if the parent reported as a few times a month, coded as 1; once a week was coded as 2; at least three times a week was coded as 3; everyday was coded as 4; and if the answer was many times a day, it was coded as 5. Then, scores of each item were standardized and by summing the standardized versions of all items as in the original HEQ the total HEQ scores were created.

2.2.5 Parental Media Attitudes

Parental Media Attitudes Questionnaire was developed based on the structured interview questions asked to parents in the study of Barr, Danzinger, Hilliard, Andolina and Ruskis (2010) investigating the amount, content and context of television exposure across the infancy period in the USA. This parent-reported questionnaire includes eight items regarding the age at first time the child has been exposed to a video from a technological media device, the approximate duration of television on in the home in a regular day, the programs which are considered as appropriate for the age of the child, the type of media the child mostly exposed to (TV or pre-recorded programs like videos/DVDs), the restrictions parents have, if they have any, about the television use of their child, and also the co-viewing behavior (e.g. "How often do you talk with your child about the program he/she watch?). The questions were added to the Home Environment Questionnaire (see Appendix C). Questions were coded, ranging from 0 to 3 by number of options in items. The item asking type of programs considered by mother as appropriate for the age of the child was an open-ended question but it was coded according to the content of programs mothers reported (if the mother reported a program not appropriate for the child's age with non-educational/ adult content, coded as 0; if mother reported programs both with educational content and non-educational but child-directed content, coded as 1; if only the programs with educational content were reported, coded as 2; and if mothers reported none of the media programs were appropriate, coded as 3).

The open-ended question regarding restrictions parents have was coded by the number of different types of restrictions from 0 (having no restriction) to 3 (having restrictions about the content, duration of use, and the media tool all). Co-viewing behavior total score, ranging from 0 to 6, was computed by adding the scores from the two questions asking the frequency of being with the child while he/she is watching something and talking with him/her about the program (0 = No, never.; 1 = Yes, Sometimes.; 2 = Yes, Mostly.; 3 = Yes, Always). The information gained from this questionnaire was used in data analysis only for exploratory purposes. The question of "Does your child watches TV/video/DVDs with his sibling/s (if any)?" was excluded from the analysis because this question was invalid for 62% of the participants with no sibling. The correlations of each question (final six items) with main predictor and outcome variables were explored and shown in the result chapter below.

2.2.6 Language Development of Children

Mothers was asked to fill out the Turkish Communicative Development Inventory (TİGE-II) in order to measure productive language development of their children. The second form of Turkish Communicative Development Inventory (TCDI-II) (Türkçe İletişim Davranışları Gelişimi Envanteri-TİGE-II) was adapted to Turkish by Aksu-Koç and her colleagues (2008) from MacArthur-Bates Communicative Development Inventory (MB-CDI; Fenson et al., 2000). It measures language development of children between 16 and 36 months by caregiver reports and composed of two parts which are vocabulary checklist and sentences and grammar. The vocabulary checklist part of TİGE-II is composed of 711 words grouped into 21 different subcategories according to the prevalence, Sound Effects & Animal Sounds (13 words), Animals (41 words), Vehicles (14 words), Toys (20 words), Food & Drink (66 words), Clothing (32 words), Body Parts (27 words), Small Household Items (33 words), Furniture & Rooms (27 words), Outside of Home (37 words), Places to go (25 words), People (32 words), Games and Routines (40 words), Action Words (146 words), Descriptive Words (61 words), Words about Time (13 words), Pronouns (21 words), Question Words (12 words), Locatives (21 words), Quantifiers (23 words), Connecting Words (7 words) respectively. Grammar part, on the other hand, is composed of five different

subsections, How Children Use Words (5 items), Word Endings: Verb and Noun inflections (11 items), Word and Morpheme Combinations (3 items that prove the grammar usage has started in the child; the questions are Has child started to combine words?, Has child started to add morphemes to words?, and What are the child's longest 3 utterances?), Word Forms (17 questions exemplifying nominal case endings and verbal inflections) and Complex Constructions (9 items).

In the current study, percentile of words produced and percentile of length of utterance were used as the two outcome variables of language skills of children. The first language outcome of percentile words produced was calculated by considering the total number of words the mothers chose as produced by their children among the vocabulary checklist (over the total of 711 words) of TİGE-II. The second language outcome of percentile of length of utterance was calculated by considering the number of words in the longest sentences each child uttered as reported by their mothers. The percentile of each children was determined based on both the gender and age of each children according to the norm tables stated in the TİGE-II study manual for each of the two outcome variables.

2.3 Procedure

Firstly, the ethical approval was taken from the Human Subjects Ethics Committee of Middle East Technical University (see Appendix D). Participant mothers were reached through the research announcement shared online and through the snowball sampling method. The mothers who had children between the ages of 16 and 26 months and willing to participate in the study reached the researcher through the e-mail or telephone and received information about the procedure. Then, two separate home visits were made by the researcher if they had an age appropriate child and using visual media at home. During the first home visits, mothers were informed about the study and informed consent were collected (see Appendix E). Then, they were asked to answer the questions of the demographic information form and Early Childhood Behavior Questionnaire (ECBQ). Then, they were familiarized with the diary that they were requested to fill in during a week. The first home visits took approximately 45

minutes. When diaries about the media exposure all filled out for every day of a week, another home visit was made. During the second visit, firstly, Weekly Media Diary was examined with the mothers together to correct possible mistakes and deficiencies that might arise from misunderstanding. After the diary was checked and taken back, mothers was asked to answer the questions of the Home Environment Questionnaire, Parental Media Attitudes questions, and the TİGE-II inventory. The second visits took approximately one and a half hours. After the second and the last home visit, a short feedback regarding the language development levels of children according to the norm was send to the mothers by the researcher.

CHAPTER 3

RESULTS

3.1 Preliminary Analyses

3.1.1 Dealing with Missing Data & Outliers

Prior to main analyses, the initial data set gathered from 101 participants was screened to detect missing data. The whole temperament scale was missing for one case so the case was deleted. Remaining 100 participants had no missing data. Univariate outliers were screened by z-scores (> 3.29, $p < .001$) while multivariate outliers were screened by Mahalanobis distance (MD $\chi_7^2 = 24.322$, $p < .001$) and accordingly, there was no univariate or multivariate outliers in the data. Then, normality assumptions was checked and seen as acceptable with Skeweness and Kurtosis values between -1 and +1 except for the Kurtosis values of percentile of words produced from Turkish Communicative Development Inventory (TİGE-II), perceptual sensitivity sub-scale of the temperament scale, and education level of the mother from Demographic Information Form. These out of range Kurtosis values were range between 1.02 to 1.37 and only slightly exceeding the criterion, thus these cases were not excluded by considering the low sample size. The scatterplots were also examined for checking the linearity and homoscedasticity assumptions. Lastly, multicollinearity and singularity assumption for variables was evaluated and met with the highest correlation of .34 (Tabachnick & Fidell, 2012). Then the main analyses were performed with total of 100 participants by using IBM SPSS 24.

3.1.2 Reliability Analyses

Across temperament sub-scales of perceptual sensitivity, inhibitory control, attention shifting and attention focusing, internal reliability Cronbach's alpha coefficient results

were found as .62, .87, .61 and .82 respectively. For perceptual sensitivity sub-scale (15 items), the results showed that if the item 23 (…refused to touch something sticky or slushy?) deleted, Cronbach's alpha coefficient improved to .65 so, this item was deleted and remaining 14 items were used for the analyses. Similarly, the internal reliability Cronbach's alpha coefficient for attention shifting sub-scale (12 items) increased to .67 after 4 items of 17 (…easily switch attention from speaker to speaker?), 35 (…pay attention to you right away when you called to him/her?), 36 (…stop going after a forbidden object (such as a VCR) when you used a toy to distract her/him?), and 49 (…easily shift attention from one activity to another?) were excluded so, analyses were done with remaining 8 items.

3.1.3 Descriptive Statistics

Descriptive statistics with means, standard deviations and minimum-maximum scores for study variables of maternal education level, home environment scores, temperamental characteristics (perceptual sensitivity, inhibitory control, attention shifting and attention control), weekly total background media exposure, language development levels (percentile of words produced, percentile of length of utterance) of children were shown individually in Table 3.1.

Table 3.1 Descriptive Statistics for Study Measures (N = 100)

	Min	Max	Mean	SD
Maternal Education Level	3.00	6.00	5.03	.63
Home Environment Scores	22.00	43.00	32.86	4.66
Total Amount of Background Media Exposure (weekly exposure in minutes)	0.00	3620.00	976.55	787.43
Temperament				
Perceptual Sensitivity	2.64	5.00	4.18	.49
Inhibitory Control	1.00	5.00	2.95	.91
Attention Focusing	1.58	4.67	3.14	.81
Attention Shifting	1.88	5.00	3.97	.75
Language Development Outcomes				
Percentile of Words Produced	5.00	95.00	48.95	26.19
Percentile of Longest Sentence	5.00	90.00	30.70	21.32

3.1.4 Correlational Analyses

Before main analyses, bivariate correlations between the study variables were examined and presented in Table 3.2.

Maternal education was correlated with the standardized home environment scores (r = .30 p < .01). On the other hand, the control variable of standardized home environment scores were significantly and negatively correlated with the weekly total background media exposure (r = -.34, p < .001).

Total background exposure was only significantly and negatively correlated with the outcome variable of percentile of length of utterance (r = -.20, p = .05), while its correlation with the other outcome variable of percentile of words produced was not significant.

Furthermore, inhibitory control was significantly correlated with percentile of words produced (r = .27, p < .01) and also with percentile of length of utterance (r = .25, p < .05). Besides, the two outcome variables were significantly and positively correlated with each other (r = .60, p < .001).

Table 3.2 Pearson's Correlations among All Variables (N = 100)

	1	2	3	4	5	6	7	8	9
1. Maternal Education Level	1								
2. Home Environment Score	.30**	1							
3. Total Amount of Background Media Exposure	-.14	-.34**	1						
4. Perceptual Sensitivity	.06	.15	-.20	1					
5. Inhibitory Control	.11	.17	-.08	.09	1				
6. Attention Focusing	.10	.25*	-.06	.16	.28**	1			
7. Attention Shifting	-.01	.01	-.16	.21*	.11	.28**	1		
8. Percentile of Words Produced	.05	.11	.03	-.01	.27**	.04	.08	1	
9. Percentile of Length of Utterance	.11	.12	-.20*	.13	.25*	-.06	.10	.60**	1

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

3.2 Hierarchical Regression Analyses

A set of Hierarchical Multiple Regression analysis were conducted to examine the relationship between of the total amount of background media exposure and the two outcome variables of language skills of children, percentile of words produced and percentile of length of utterance, while controlling for the maternal education level, and standardized home environment scores as well as moderation effects of temperamental characteristics of children (perceptual sensitivity, inhibitory control, attention shifting and attention focusing).

For the two outcome variables and four moderator variable, eight sets of hierarchical regression analyses were conducted separately. Analyses were interpreted separately for each outcome variable. In all analyses, maternal education level and standardized

home environment scores were entered in the **first step to** control their effects. Then, the mean centered version of the moderator temperament and other three temperamental characteristics were entered in the **second step**. As a **third step**, the total amount of background media exposure was entered. Finally, in **the last step**, the interaction of total amount of background media exposure and moderator temperament of children after multiplying the mean centered versions of them were entered in the analysis.

3.2.1 Hierarchical Regression Analyses for Predicting Percentile of Words Produced

For the first child language development outcome of percentile of words produced, none of the steps of hierarchical regression analysis were significant and none of the added variables showed significant contribution to the explained variance in the outcome (see Table 3.3).

Table 3.3 Hierarchical Regression Analysis in Predicting Percentile of Words Produced: Four Temperamental Characteristics as Moderators

Predictors	R	R^2	ΔR^2	F	F_{inc}	B	SE	β
Step 1	.12	.01	.01	.66	.66			
Maternal Ed.						.76	4.42	.02
Home Env.						.46	.45	.11
Step 2	.30	.09	.08	1.51	1.92			
Maternal Ed.						.18	4.35	.00
Home Env.						.41	.46	.10
Perc. Sens.						-2.94	5.50	-.06
Inhib. Cont.						7.84	3.01	.27*
Att. Focus.						-2.55	3.55	-.08
Att. Shift.						2.89	3.67	.08

Table 3.3 (continued)

Predictors	R	R^2	ΔR^2	F	F_{inc}	B	SE	β
Step 3	.31	.10	.01	1.42	.92			
Maternal Ed.						.39	4.36	.01
Home Env.						.55	.48	.13
Perc. Sens.						-2.25	5.55	-.04
Inhib. Cont.						7.92	3.01	.27*
Att. Focus.						-2.87	3.57	-.09
Att. Shift.						3.46	3.72	.10
Bg. Exp.						.00	.00	.10
Perceptual Sensitivity as Moderator								
Step 4	.33	.11	.01	1.36	.96			
Maternal Ed.						.97	4.40	.02
Home Env.						.58	.49	.14
Perc. Sens.						-3.14	5.62	-.06
Inhib. Cont.						8.54	3.08	.30**
Att. Focus.						-3.27	3.59	-.10
Att. Shift.						3.94	3.76	.11
Backg. Exp.						.00	.00	.09
Perc. Sens. * Bg. Exp.						-.01	.01	-.11
Inhibitory Control as Moderator								
Step 4	.32	.10	.00	1.28	.36			
Maternal Ed.						-.05	4.43	-.00
Home Env.						.57	.49	.14
Perc. Sens.						-2.80	5.64	-.05
Inhib. Cont.						7.99	3.03	.28**
Att. Focus.						-2.74	3.59	-.09
Att. Shift.						3.24	3.75	.09
Backg. Exp.						.00	.00	.11
Inhib. Cont. * Bg. Exp.						.00	.00	.06
Attention Focusing as Moderator								
Step 4	.31	.10	.00	1.24	.07			
Maternal Ed.						.38	4.38	.01
Home Env.						.54	.49	.13
Perc. Sens.						-2.31	5.58	-.04
Inhib. Cont.						7.89	3.03	.27*
Att. Focus.						-2.86	3.59	-.09
Att. Shift.						3.50	3.74	.10
Backg. Exp.						.00	.00	.10
Att. Focus. * Bg. Exp.						-.00	.00	-.03
Attention Shifting as Moderator								
Step 4	.31	.10	.00	1.24	.07			
Maternal Ed.						.43	4.38	.01
Home Env.						.55	.49	.13
Perc. Sens.						-2.20	5.58	-.04
Inhib. Cont.						8.00	3.04	.28*
Att. Focus.						-2.89	3.59	-.09
Att. Shift.						3.56	3.76	.10
Backg. Exp.						.00	.00	.10
Att. Shift. * Bg. Exp.						-.00	.00	-.03

*p<.05, **p<.01, ***p<.001, [a] marginally significant.

3.2.2 Hierarchical Regression Analyses for Predicting Percentile of Length of Utterance

In the **first step,** maternal education level and standardized home environment scores were entered but they did not explain a significant variance in the percentile of length of utterance of children, R^2 = .02 (adjusted R^2 = .00), F (2, 97) = 1.05, *ns*. In the **second step**, four temperamental characteristics were added and they explained significant additional variance in the outcome, R^2 = .12 (adjusted R^2 = .06), ΔR^2 = .10, *Finc* (4, 93) = 2.64, $p < .05$). In the **third step**, the main effect of total amount of background media exposure was entered and explained variance was not significant R^2 = .14 (adjusted R^2 = .07), ΔR^2 = .01, *Finc* (1, 92) = 1.50, *ns*). In the **final step**, interaction terms for total amount of background media exposure and temperamental characteristics of children were entered into the regression analyses and only the interaction term with perceptual sensitivity explained significant additional variance, R^2 = .20 (adjusted R^2 = .13), ΔR^2 = .06, *Finc* (1, 91) = 6.81, $p < .05$).

When the unique effects of variables examined based on the final step where perceptual sensitivity added as a moderator, inhibitory control showed a significant unique effect (β = .32, $p < .01$) and also attention focusing showed significant effect (β = -.23, $p < .05$) on the outcome.

When the interaction effects examined, only the interaction of perceptual sensitivity and total amount of background media exposure was significant (β = -.27, $p < .05$) and it explained 20% of unique variance in predicting percentile of length of utterance of children (see Table 3.4). Simple slope test done for understanding the structure of the interaction effect indicated that for children with high level of perceptual sensitivity, when background media exposure increase, the percentile of children's length of utterance decreases (b = -.01, t = -.2.80, $p < .01$) while this negative effect of the amount of background exposure on the outcome did not be observed for children with low level of perceptual sensitivity (b = .00, t = .74, p = .46) (see Figure 3.1).

Table 3.4 Hierarchical Regression Analysis in Predicting Percentile of Length of Utterance: Four Temperamental Characteristics as Moderators

Predictors	R	R^2	ΔR^2	F	F_{inc}	B	SE	β
Step 1	.15	.02	.02	1.05	1.05			
Maternal Ed.						2.80	3.59	.08
Home Env.						.34	.37	.10
Step 2	.35	.12	.10	2.13[a]	2.64*			
Maternal Ed.						2.40	3.48	.07
Home Env.						.32	.37	.09
Perc. Sens.						4.22	4.40	.10
Inhib. Cont.						6.25	2.41	.27*
Att. Focus.						-5.50	2.84	-.21[a]
Att. Shift.						3.09	2.94	.11
Step 3	.37	.14	.01	2.05[a]	1.50			
Maternal Ed.						2.20	3.47	.07
Home Env.						.18	.39	.05
Perc. Sens.						3.52	4.42	.08
Inhib. Cont.						6.17	2.40	.26*
Att. Focus.						-5.17	2.84	-.20[a]
Att. Shift.						2.51	2.97	.09
Backg. Exp.						-.00	.00	-.13
Perceptual Sensitivity as Moderator								
Step 4	.44	.20	.06	2.76**	6.81*			
Maternal Ed.						3.39	3.40	.10
Home Env.						.25	.38	.07
Perc. Sens.						1.69	4.34	.04
Inhib. Cont.						7.45	2.38	.32**
Att. Focus.						-5.98	2.77	-.23*
Att. Shift.						3.51	2.90	.12
Backg. Exp.						-.01	.00	-.18
Perc. Sens. * Backg. Exp.						-.02	.01	-.27*
Inhibitory Control as Moderator								
Step 4	.39	.15	.02	2.03[a]	1.78			
Maternal Ed.						2.96	3.51	.09
Home Env.						.14	.39	.04
Perc. Sens.						4.49	4.46	.10
Inhib. Cont.						6.04	2.39	.26*
Att. Focus.						-5.40	2.84	-.21[a]
Att. Shift.						2.90	2.97	.10
Backg. Exp.						-.00	.00	-.15
Inhib. Cont. * Backg. Exp.						-.00	.00	.14
Attention Focusing as Moderator								
Step 4	.37	.14	.00	1.79	.11			
Maternal Ed.						2.20	3.49	.07
Home Env.						.19	.39	.05
Perc. Sens.						3.58	4.45	.08
Inhib. Cont.						6.20	2.42	.26*
Att. Focus.						-5.18	2.86	-.20[a]
Att. Shift.						2.48	2.98	.09
Backg. Exp.						-.00	.00	-.12

Table 3.4 (continued)

Predictors	R	R^2	ΔR^2	F	F_{inc}	B	SE	β
Att. Focus. * Backg. Exp.						.00	.00	.03
Attention Shifting as Moderator								
Step 4	.38	.14	.01	1.87	.67			
Maternal Ed.						2.30	3.48	.07
Home Env.						.18	.39	.05
Perc. Sens.						3.66	4.43	.08
Inhib. Cont.						6.37	2.42	.27**
Att. Focus.						-5.21	2.85	-.20[a]
Att. Shift.						2.77	2.99	.10
Backg. Exp.						-.00	.00	-.15
Att. Shift. * Backg. Exp.						-.00	.00	-.08

*p<.05, **p<.01, ***p<.001, [a] marginally significant.

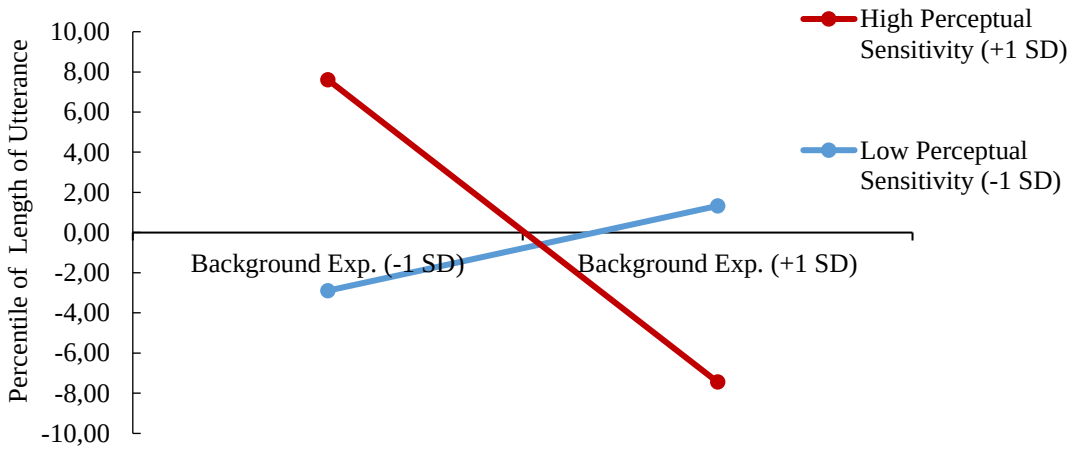

Figure 3.1 Graph for the Interaction between Perceptual Sensitivity and Total Amount of Background Media Exposure in Predicting Child's Percentile of Length of Utterance

3.3 Exploratory Correlational Analyses for Parental Media Attitudes Questions

For exploratory purposes, bivariate correlations between parental media attitude questions, the main predictor variable of total amount of background media exposure and the two outcome variables were examined (see Table 3.5).

None of the parental media attitudes questions were significantly correlated with the outcome variables. However, the age at children had been exposed to media for the first time was negatively correlated with the approximate daily duration of TV on in the home (r = -.20, p < .05), positively correlated with the restrictions parents have about the television use of their child (r = .31, p < .01) and negatively correlated with total amount of background media exposure of children in a week (r = -.23, p < .05).

The correlations showed that the duration of TV on in the home in a regular day negatively correlated with the number of restrictions parents have about the television use of their child (r = -.41, p < .001) and with total frequency scores from co-viewing behaviors (r = -.24, p < .05), but positively correlated with the total amount of weekly background media exposure (r = .66, p < .001). The type of programs considered as appropriate for the age of the child (0 = “non-educational/adult; 1 = “both educational and non-educational”; 2 = “only educational”; 3 = “none of the media programs”) showed significantly positive correlation with the number of the restrictions parents have about the television use of their child only (r = .27, p < .01). The type of media children mostly exposed to (1 = TV; 2 = pre-recorded programs) was significantly and positively correlated with the number of the restrictions parents have about the television use of their child (r = .30, p < .01) and with total frequency scores from co-viewing behaviors (r = .21, p < .05) whereas it was significantly and negatively correlated with the duration of TV on in the home (r = -.45, p < .001) and with the total amount of background media exposure (r = -.38, p < .001). Moreover, the amount of child background media exposure showed significant and negative correlation with parental restrictions about the child TV use (r = -.38, p < .001) and total frequency scores from co-viewing behaviors (r = -.28, p < .01).

Table 3.5 Pearson's Correlations among Parental Media Attitudes Questions and the Predictor Variable and Outcome Variables (N = 100)

	1	2	3	4	5	6	7	8	9
1. Age of First Media Exposure (in days)	1								
2. Daily Duration of TV on in Home (in hours)	-.20*	1							
3.Type of Programs Considered Appropriate for Child's Age	-.06	-.09	1						
4. Type of Media Child Mostly Exposed to (1=TV; 2=pre-recorded prog.)	-.03	-.45**	.11	1					
5. Parental Restrictions About Child Media Use	.31**	-.41**	.27**	.30**	1				
6. Co-viewing Total	-.01	-.24*	.18	.21*	.14	1			
7. Total Amount of Background Media Exposure	-.23*	.66**	-.09	-.38**	-.38**	-.28**	1		
8. Percentile of Words Produced	-.03	-.02	-.06	.06	-.03	.05	.03	1	
9. Percentile of Length of Utterance	-.01	-.13	.06	.07	.12	.05	-.20*	.60**	1

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

CHAPTER 4

DISCUSSION

The aim of the current study was to look at the effects of background media exposure (from TV or any kind of audio-visual media tools) on the language development of toddlers between the ages of 16-26 months (M_{age} = 20.18 months) in Turkey. In addition, the moderator role of perceptual sensitivity, inhibitory control, attention shifting and attention focusing temperamental traits of children were examined. In accordance with this purpose, mothers reported media exposure (with media diary kept for a week), temperamental traits and language skills of their children. They also reported the demographic information and home environment characteristics. Moreover, the attitudes of mothers toward media use of their children was obtained as a part of their home environment characteristics, for exploratory purposes. In the following sections, the findings, contributions, limitations, and suggestions for future studies were discussed in detail in the light of the relevant literature.

4.1 The Effect of Background Media Exposure on Child Language Development

The first hypothesis of the current study was that amount of background media exposure would be negatively associated with the language outcomes of toddlers measured with percentile of word production and length of utterance. However, after controlling the home environment and maternal education levels, association between background media exposure and child language outcomes were not significant. These non-significant results were surprising because the literature showed that background media exposure adversely affect the parent-child verbal interaction, as well as the child vocalization which determines the language skills of young children (Christakis et al., 2009; Kirkorian et al., 2009; Pempek et al., 2014; Masur et al., 2016). Besides, Tanimura, Okuma and Kyoshima (2007) examined the parent-child conversations with

and without background television (handling as TV was on but child was not watching) and with foreground television (TV was on and the child was watching). They found that both the quality and quantity of utterances parents produced significantly decreased when the television was on at the background but not watched by 7-to-24 months-olds although the reduction was more when children were actively watching it. They proposed that this could result in delay in language development of these young children. One reason for the nonsignificant findings of the current study might be the proven effects of maternal education and home environment on the language outcomes of children (e.g., Rice & Hoffman, 2015; Rodriguez, & Tamis-LeMonda, 2011). In the current study, they were taken as control variables that may lead to loss of power of background media exposure. Previous studies examining the background media exposure and language development relationship did not control these related variables.

Moreover, the significant relationship of background media exposure with the child language development outcome presented in the literature was based on correlational analysis rather than the regression (Masur et al., 2016). In the current study, background media exposure similarly found as significantly correlated with the child language outcome variable of percentile of length of utterance.

Background media definition seen in the literature is somewhat ambiguous and insufficient because most studies investigating the background media exposure regarded only the adult-directed media or media programs not intended for children as background media as Anderson and Evans (2001) implied in their "background television" definition (Tomopoulos et. al, 2014). However, the current study regarded any type of media which was not actively attended by children regardless of the content and for whom the media programs were on as background exposure. This could be seen as a strength because depending just the content and maternal intentions while specifying background exposure might result in erroneous estimation of background exposure time. As a support, Tomopoulos et al. (2014) also stated that many media programs not intended for children and with adult-contents which considered as background media in many studies actually watched by young children.

4.2 The Moderator Role of Child Temperament in the Link between Background Media Exposure and Language Development

The current study expected to find the moderator role of temperament dimensions of inhibitory control, perceptual sensitivity, attention focusing and also attention shifting. It was hypothesized that children with high perceptual sensitivity and children with low inhibitory control, attention focus, attention shifting would be more open to the detrimental effects of background media exposure on their language outcomes since they are able to detect even mild external stimuli and they have problems with ignoring the stimuli they get from the background media (Putnam et al., 2006). It was important to consider the moderator role of child temperamental characteristics while examining the relationship between the background media exposure and language development of young children because existing literature emphasized the association between temperament and language outcomes (Dixon & Smith, 2000; Gartstein, Crawford, & Robertson, 2008; Salley & Dixon, 2007).

For example, the positive association was found between the total vocabulary scores and mean length of utterance of 21-months-old children and temperamental characteristics of attention shifting, attention control and inhibitory control (Salley & Dixon, 2007). In the same study, the perceptual sensitivity-mean length of utterance association was not found significant, but it was associated significantly with the total vocabulary scores besides most of the other language outcomes.

In the current study the perceptual sensitivity significantly moderated the link between the background media exposure and language development as hypothesized but only for the percentile of the length of utterance. Specifically, the finding implied that the negative link is more powerful for children with high perceptual sensitivity although this link is not valid for children with low perceptual sensitivity. Likewise, the definition of temperamental perceptual sensitivity itself can be regarded as a support of this finding. As Putnam et al. (2006) defined, high perceptual sensitivity means to notice mild environmental stimuli and thus not being able to ignore the mild distractors like background media.

On the other hand, inhibitory control, attention shifting and attention focusing did not moderate the relationship between the background media exposure and language outcomes of the percentile of the words produced and the percentile of the length of utterance as hypothesized. Effortful control as a temperamental factor composed of behavior inhibition and attention-based abilities and closely related to executive functioning (Bridgett, Oddi, Laake, Murdock, & Bachmann, 2013). Because executive attention is the core mechanism for both of them and both require inhibition ability (Zhou, Chen, & Main, 2012). Recently, Slot and von Suchodoletz (2018) stated a bi-directional link between inhibition and attention shifting and language skills of children. They found that the predictor power of language skills on executive function was more robust than the opposite. Further, Vallotton and Ayoub (2011) stated that self-regulatory skills of children, composing both attention and inhibition skills, were predicted by their vocabulary skills. This bi-directional link may be the possible cause of nonsignificant finding about the moderator role of inhibitory control in the current study. On the other hand, Nathanson and Beyens (2018) stated that the amount of media use (only regarded tablet use) predicts Effortful Control scores, composite of inhibitory control, attention shifting and attention focusing, of 3-5-year-old children negatively. So, it also seems possible that the amount of media exposure may mediate the relationship between these temperamental traits and language development.

Radesky et al. (2014) found that low self-regulation skills at the age of 9 months were associated with high amount of media exposure at the age of 24 months. Thus, inhibitory control may have a mediator role in the relationship between the background media exposure and language development in a way that low inhibitory control skills may predict more background exposure and background media exposure affects the language skills of children negatively through the mediator role of inhibitory control instead of moderator role. However, the literature regarding the temperament and media exposure link was controversial. For example, in their recent study Howe et al. (2017) could not find a relation between the temperamental traits and the amount of television viewing of two-year-old children. Besides, there were many studies supported the effect of temperament on language development of young children (e.

g., Dixon & Smith, 2000; Gartstein, Crawford, & Robertson, 2008; Salley & Dixon, 2007). So, the current study examined the moderator role of temperament in the link between background media exposure and language outcomes. The unique effect results imply that when the inhibitory control of children increases, the percentile they belong to base on the length of utterance also increases and supported by the literature (Salley & Dixon, 2007). Unexpectedly, the result of the unique effect of attention focusing showed that while the attention focusing of children increases, their percentile of the length of utterance decreases. This finding contrast with the literature states that attention skills of children were predictors of language skills of them (e.g., Dixon & Smith, 2000; Gartstein, Crawford, & Robertson, 2008; Salley & Dixon, 2007; White, Alexander, & Greenfield, 2017). This result may be caused by relying on maternal reports that prone to underestimate the attention focusing of children. Moreover, children in the current study may not be mature enough to focus their attention on specific activity while resisting to external distractions other than the background media. Thus their mothers may not be able to observe this skill of them properly and to report reliably. Because the observed attention focusing skills increases by age and very changeable until the age of 2 years (Ruff & Lawson, 1990).

4.3 The Role of Parental Media Attitudes

Correlations between parental media attitudes and background media exposure as well as child outcome variables were examined for exploratory purposes. Previous literature also stated the importance of parental attitudes toward media on the media exposure of young children. For example, Barr et al. (2010) found that parental restrictions regarding the content their children (from 6 to 18 months-old) exposed to and the exposure to child-directed programs reported by mothers as appropriate for the age of their child were significantly related. However, they found no significant associations between parental media attitudes and the total amount of television exposure. Another study explored the importance of parental attitudes regarding the rules about TV use of their children on the actual TV use of the children aged between 6 months to 6 years. This study found that parental restrictions/rules regarding the content of media were related to more co-viewing behavior, and restrictions regarding

the time of media use was related to lower time spent by watching television among children when compared to those who did not have such rules (Vandewater, Park, Huang, & Wartella, 2005).

In the current study correlations between parental media attitude questions and language outcomes were not significant. However, the parental media attitude questions showed some meaningful correlations with each other and some of them with the amount of background media exposure. It seems that as the age of the first media exposure children increases, the approximate duration of TV on in the home in a regular day and also the total amount of background media exposure of children in a week decreases, while the number of restrictions parents have about the television use of their child increases.

The correlations also imply that when the duration of TV is on at home on a regular day increases, the total amount of background media exposure during a week also increases but the number of restrictions parents have about the television use of their child and total frequency scores from co-viewing behaviors decreases. The type of programs considered as appropriate for the age of the child (0 = "non-educational/adult; 1 = "both educational and non-educational"; 2 = "only educational"; 3 = "none of the media programs") showed significant correlation only with the number of the restrictions parents have about the television use of their child and the correlation was positive.

The type of media children mostly exposed to (1 = TV; 2 = pre-recorded programs) found positively correlated with the number of the restrictions parents have about the television use of their child and with total frequency scores from co-viewing behaviors. These positive correlations may suggest that when the children mostly exposed to television, the restrictions of parents regarding children's TV use and the frequency of their co-viewing behaviors decrease. Besides, the negative correlation with the total amount of background media exposure implied that when children mostly exposed to the pre-recorded media type rather than the television, the total background media exposure of them decreases.

Moreover, it seems that as the parental restrictions about the child TV use and the frequency scores from co-viewing behaviors increases, the amount of child background media exposure decreases.

Although the relations examined in the current study were correlational and should be interpreted accordingly, exploring them was important as they may brighten the relationships between parental media attitudes and background media exposure among toddlers for further studies.

4.4 Conclusions

The aim of the current study was to look at the effects of background audio-visual media exposure on the language outcomes of the percentile of words produced and the percentile of the length of utterance among toddlers between the ages of 16-26 months. The current study also aimed to examine moderator role of child temperamental characteristics namely inhibitory control, attention shifting, attention focusing and perceptual sensitivity in the relationship between the background media exposure and the two language outcomes.

The relationship between the amount of background media exposure and the percentile of words produced and with the percentile of the length of utterances were not significant. However, moderation analysis showed that background media exposure interacted with perceptual sensitivity, and more exposure predicted lower percentile of the length of utterance for children with high perceptual sensitivity. And, among the expectations regarding the moderator role of the temperament of children, the only supported hypothesis was the moderator role of perceptual sensitivity in predicting language development but it was supported only for the language outcome of the percentile of the length of utterances. Moreover, when the perceptual sensitivity was regarded as moderator, the unique effect of inhibitory control and attention focusing were found. The result offered that inhibitory control positively predicted the percentile they belong to base on the length of utterance. On the other hand, the unique effect of attention focusing found surprisingly suggested a negative prediction.

4.5 Strengths of the Current Study and Its Contributions to the Literature

Using the diary method in order to get information about media exposure of children is a strength of the current study. Because it provided the opportunity to get information about the context of media exposure during children's natural environment. Laboratory studies, on the other hand, may not be proper to generalize the media effects because they require exposing children to pre-decided specific media in very limited time. The fact that information collected regarding the main predictor of the total amount of background exposure was based on the exposure during a week instead of one day is another strength. It decreases the possibility of finding results by chance. Exploring the parental media attitudes as possible related factors with background media exposure and language outcomes can be also seen as a strength. Because the findings regarding this issue may be a guide for further related studies.

Investigating the relationship between background media exposure and language development of children is the contribution the current study made because the background media literature is really scarce and novice. Examining the moderator role of temperamental characteristics children have is another important strength of the current study. Because according to our knowledge, this is the first study regarding temperament as a possible moderator in the media and language relationship. And thus, the finding that perceptual sensitivity had a moderator role on the relationship between background media exposure amount and the language outcome of percentile of length of utterances of children has implications for parents. In a way that the negative effect of background media exposure on this language outcome was only observed for children with high perceptual sensitivity but not on children with low perceptual sensitivity is very a critical contribution to the literature. This finding emphasizes that every child is not affected by the media in the same way and some temperamental traits of children may boost the adverse effects of media on child language outcomes. So, the results of the current study actually implied that background media exposure of young children should be limited by the caregivers as much as possible.

Additionally, the current study contributes to the existing literature by examining the possible correlations of parental media attitudes with the amount of background media children exposed to because it is important to explore possible alleviative parental attitudes toward media in order to raise awareness and to provide solutions prevent children from its detrimental effects.

4.6 Limitations of the Current Study

Besides its strengths and contributions, the current study has some limitations worthy of notice. Firstly, in order to increase the generalizability of the results, sample from more diverse socioeconomic levels should be recruited. The education level of the participated mothers were high and this might have been a protective factor in the influence of the background media on children's language development. The results may change by using low SES sample.

Secondly, the current study was cross-sectional so the results should be interpreted cautiously by avoiding any kind of causation while interpreting the findings. Examining the association between background media exposure and language development longitudinally may strength the results. Moreover, not being able to control the possible language delays children may already have and also the type of care providers may be important limitations. It was found that children with language delay and children who have care providers other than their parents were prone to longer hours of television exposure (Lin et al., 2015).

Furthermore, the current study relied on mothers' reports only while collecting the information about both the amount of background media exposure and current language skills of the children. And, the social desirability effect on their reports was unavoidable when examining media effects on young children because of the prevalent warnings and information about how dangerous media exposure is for young children recently.

In order to eliminate the social desirability effect and biased reports, mothers were focused solely on active viewing of their children besides the daily amount of audio-

visual media open while the child was awake to learn about the background media exposure. However, this might result in underrated background exposure reports among participant mothers.

4.7 Suggestions for Future Studies

First of all, future studies should replicate the current study by different age groups and different socio-demographic characteristics. Particularly, it is important to look at the effect of background media exposure on language development of young children among low SES families in the future. Because if the moderator role of perceptual sensitivity was significant in the current study conducted with homogenous middle SES participants, sample from low SES may reveal stronger effects. Moreover, to use observational methods like getting information about the child language development during a short mother-child play session may result in different results. Additionally, measuring the inhibitory control, attention shifting and attention focusing skills of children by observation in future studies may present significant and more reliable findings. As some of the parental media attitudes were found related with the amount of child background media exposure in this study, likewise, future studies should consider the media use habits of mothers too. Future studies should examine how background media exposure of children affects different developmental areas, other than the language development examined in the present study. Moreover, it may be important to investigate the effects of background media on child development for different media tools separately. To examine possible risk-increasing factors associated with background media is also crucial for future studies in order to guide possible intervention programs which inform parents about the possible causes and effects of background media exposure of children.

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APPENDICES

Appendix A: Demographic Information Form

	ANNE için	BABA için
Doğum tarihi:		
Eğitim durumu:	☐ Okuma-yazma bilmiyor ☐ Okuma yazma biliyor ☐ İlkokul ☐ Ortaokul ☐ Lise ☐ Üniversite ☐ Lisanüstü:	☐ Okuma-yazma bilmiyor ☐ Okuma yazma biliyor ☐ İlkokul ☐ Ortaokul ☐ Lise ☐ Üniversite ☐ Lisansüstü:
Mesleği:		
Şu an için ne iş yapıyor?		
Aylık kazancı:	☐ 1000-1500 TL ☐ 1500-2500 TL ☐ 2500-3500 TL ☐ 3500-5000 TL ☐ 5000 üzeri	☐ 1000-1500 TL ☐ 1500-2500 TL ☐ 2500-3500 TL ☐ 3500-5000 TL ☐ 5000 üzeri
Yaşadığı semt neresidir?		
Medeni hali:	☐ Evli ve birlikte yaşıyor ☐ Evli ama eşinden ayrı yaşıyor ☐ Eşinden ayrılmış ☐ Eşini kaybetmiş	☐ Evli ve birlikte yaşıyor ☐ Evli ama eşinden ayrı yaşıyor ☐ Eşinden ayrılmış ☐ Eşini kaybetmiş

ÇOCUKLAR için
Toplam kaç çocuğunuz var? ……
Yaşları nelerdir? (*büyükten küçüğe yazınız*):
Çocuğunuzun herhangi fiziksel ve/veya ruhsal bir rahatsızlığı var mı? Evet ☐ Hayır ☐
Evinizde sürekli olarak birlikte yaşayan kaç kişi var? ……

Appendix B: Media Diary

GÜN: ……..

MEDYA GÜNLÜĞÜ

Çocuğun nesi oluyorsunuz? O Anne O Anneanne/Babaanne O Dede O Bakıcı O Diğer….

1. Çocuğunuzla bugün içinde geçirdiğiniz zaman aralıklarını saat olarak belirtiniz (Örneğin; 07:00-09:00, 17:00-22:30).

…….

2. Çocuğunuz bu sabah saat kaçta uyandı?

O 04:00 O 05:00 O 06:00 O 07:00 O 08:00 O 09:00
O 10:00 O 11:00 O 12:00 O 13:00

3. Çocuğunuz bu akşam saat kaçta uyudu?

O 18:00 O 19:00 O 20:00 O 21:00 O 22:00 O 23:00 O 00:00
O 01:00 O 02:00 O 03:00

Lütfen aşağıdaki soruları bugün çocuğunuzla sizin beraber geçirdiğiniz (yukarıda belirttiğiniz) zaman aralığı içerisinde düşünerek cevaplayınız.

4. Bugün çocuğunuzun bulunduğu herhangi bir ortamda (ev, komşu vb…) herhangi bir teknolojik cihazdan (televizyon/DVD/tablet/bilgisayardan vb…) videolar yaklaşık ne kadar süre açık kaldı?

O Hiç	O 2 saat	O 6 saat	O 10 saat
O 10 dakika	O 2 saat 30 dakika	O 6 saat 30 dakika	O 10 saat 30dakika
O 20 dakika	O 3 saat	O 7 saat	O 11 saat
O 30 dakika	O 3 saat 30 dakika	O 7 saat 30 dakika	O 11 saat 30 dakika
O 40 dakika	O 4 saat	O 8 saat	O 12 saat
O 50 dakika	O 4 saat 30 dakika	O 8 saat 30 dakika	O 12 saatten fazla
O 1 saat	O 5 saat	O 9 saat	
O 1 saat 30 dakika	O 5 saat 30 dakika	O 9 saat 30 dakika	

5. Bu süre boyunca hangi tür programlar açıktı (aşağıda belirtilen her bir türün bu süre içerisindeki izlenme sıklığını 0 (en az bu tür program açıktı) dan - 4(en çok bu tür program açıktı) e kadar işaretleyiniz)?

   - **Eğitici içeriğe sahip, küçük çocuklara yönelik programlar/videolar (Örneğin; Pepee, Niloya vs.)**

1

a. En az bu tür açıktı (0) (1) (2) (3) (4) En çok bu tür açıktı

b. Çocuğunuz bu tür programı yaklaşık ne kadar süre aktif olarak (dikkatini vererek) izledi?

O Hiç	O 2 saat	O 6 saat	O 10 saat
O 10 dakika	O 2 saat 30 dakika	O 6 saat 30 dakika	O 10 saat 30dakika
O 20 dakika	O 3 saat	O 7 saat	O 11 saat
O 30 dakika	O 3 saat 30 dakika	O 7 saat 30 dakika	O 11 saat 30 dakika
O 40 dakika	O 4 saat	O 8 saat	O 12 saat
O 50 dakika	O 4 saat 30 dakika	O 8 saat 30 dakika	O 12 saatten fazla
O 1 saat	O 5 saat	O 9 saat	
O 1 saat 30 dakika	O 5 saat 30 dakika	O 9 saat 30 dakika	

- **Eğitici olmayan, küçük çocuklara yönelik programlar/videolar Örneğin; Sünger Bob Kare Pantolon, Şirinler**

a. En az bu tür açıktı (0) (1) (2) (3) (4) En çok bu tür açıktı

b. Çocuğunuz bu tür programı yaklaşık ne kadar süre aktif olarak (dikkatini vererek) izledi?

O Hiç	O 2 saat	O 6 saat	O 10 saat
O 10 dakika	O 2 saat 30 dakika	O 6 saat 30 dakika	O 10 saat 30dakika
O 20 dakika	O 3 saat	O 7 saat	O 11 saat
O 30 dakika	O 3 saat 30 dakika	O 7 saat 30 dakika	O 11 saat 30 dakika
O 40 dakika	O 4 saat	O 8 saat	O 12 saat
O 50 dakika	O 4 saat 30 dakika	O 8 saat 30 dakika	O 12 saatten fazla
O 1 saat	O 5 saat	O 9 saat	
O 1 saat 30 dakika	O 5 saat 30 dakika	O 9 saat 30 dakika	

- **Okul çağındaki çocuklara/ergenlik çağındaki çocuklara/yetişkinlere yönelik programlar/videolar Örneğin; Barbie, Disney dizileri, dizi, haber programı, müzik programları/videoları, magazin, yetişkin filmleri**

a. En az bu tür açıktı (0) (1) (2) (3) (4) En çok bu tür açıktı
b. Çocuğunuz bu tür programı yaklaşık ne kadar süre aktif olarak (dikkatini vererek) izledi?

O Hiç	O 2 saat	O 6 saat	O 10 saat
O 10 dakika	O 2 saat 30 dakika	O 6 saat 30 dakika	O 10 saat 30dakika
O 20 dakika	O 3 saat	O 7 saat	O 11 saat
O 30 dakika	O 3 saat 30 dakika	O 7 saat 30 dakika	O 11 saat 30 dakika
O 40 dakika	O 4 saat	O 8 saat	O 12 saat
O 50 dakika	O 4 saat 30 dakika	O 8 saat 30 dakika	O 12 saatten fazla
O 1 saat	O 5 saat	O 9 saat	
O 1 saat 30 dakika	O 5 saat 30 dakika	O 9 saat 30 dakika	

- **Diğer (lütfen program adı/türünü belirtiniz.)** ……..

a. En az bu tür açıktı (0) (1) (2) (3) (4) En çok bu tür açıktı
b. Çocuğunuz bu tür programı yaklaşık ne kadar süre aktif olarak (dikkatini vererek) izledi?

O Hiç	O 2 saat	O 6 saat	O 10 saat
O 10 dakika	O 2 saat 30 dakika	O 6 saat 30 dakika	O 10 saat 30dakika
O 20 dakika	O 3 saat	O 7 saat	O 11 saat
O 30 dakika	O 3 saat 30 dakika	O 7 saat 30 dakika	O 11 saat 30 dakika
O 40 dakika	O 4 saat	O 8 saat	O 12 saat
O 50 dakika	O 4 saat 30 dakika	O 8 saat 30 dakika	O 12 saatten fazla
O 1 saat	O 5 saat	O 9 saat	
O 1 saat 30 dakika	O 5 saat 30 dakika	O 9 saat 30 dakika	

Appendix C: Home Environment Questionnaire

Ev Ortamı Anketi

Katılımcı No	İsim	Yaş	Cinsiyet

1. Çocuğunuzun aynı evde yaşadığı kaç tane kardeşi (üvey kardeşleri de dahil) var? (Toplam kardeş sayısını yazın)	Kardeş sayısı	
2. Siz ya da bir başkası çocuğunuza hikaye okur mu? Ne sıklıkla okur?	☐ Evet ☐ Hayır	☐ Yılda birkaç kez ☐ Ayda birkaç kez ☐ Haftada bir kez ☐ Haftada en az 3 kez ☐ Her gün ☐ Günde birçok kez
3. Çocuğunuzun kendisine ait çocuk kitabı var mı? Yaklaşık kaç tane var?	☐ Evet ☐ Hayır	☐ 10 ya da daha fazla ☐ 3 – 9 arası ☐ 1 ya da 2
4. Çocuğunuzun sayıları, renkleri, şekilleri öğreten üst üste koyacağı ya da birbirine takıp çıkarabileceği, kapağı açılıp kapanan, sesler çıkaran oyuncakları var mı? Yaklaşık kaç tane var?	☐ Evet ☐ Hayır	☐ Bir ☐ İki ☐ Üç ☐ Dört ya da daha fazla
5. Çocuğunuzun hiç ahşap, tutma yeri olan yapbozu var mı?	☐ Evet ☐ Hayır	
6. Çocuğunuzun bloklar, legolar gibi oyuncakları var mı?	☐ Evet ☐ Hayır	
7. Çocuk dışında aile üyelerinin okuyabileceği kitaplarınız var mı? Yaklaşık kaç tane var?	☐ Evet ☐ Hayır ……tane Kitap türü:…….	
8. Ailenizin düzenli olarak aldığı dergi var mı? Yaklaşık kaç tane var?	☐ Evet ☐ Hayır	☐ Bir ☐ İki ☐ Üç ☐ Dört ya da daha fazla
9. Evde çocuğunuza çocuk şarkıları, hikayeler, masallar, ninniler dinletmek için kullandığınız bir CD çalar, DVD, kasetçalar, ses kayıt cihazı, MP3, tablet, bilgisayar var mı? (Kardeşleriyle paylaştıkları da dahil)	☐ Evet (en az bir tanesi var) ☐ Hayır	
10. Çocuğunuzun, çocuk şarkıları çalan, hikayeler, masallar anlatan, kendisine ait CD/DVD/takip edilen internet video kanalları (AfacanTV, Minika Çocuk vs.) var mı? Yaklaşık kaç tane var?	☐ Evet ☐ Hayır	☐ 10 ya da daha fazla ☐ 3 – 9 arası ☐ 1 ya da 2

11. Çocuğunuz, TV, DVD ya da bilgisayardan çocuklara yönelik çizgi filmler, videolar izler mi?	□ Evet □ Hayır	
12. Evde, siz ya da bir başkası çocuğunuzun rakamları, sayıları öğrenmesine yardım eder mi?	□ Evet □ Hayır	
13. Çocuğunuza şarkı, şiir, tekerleme veya ninni söyler misiniz?	□ Evet, her fırsatta □ Evet, arada sırada □ Hayır, pek değil	
14. Bebeğinizle, onu giydirirken, emzirirken ya da onun altını açarken konuşur musunuz?	□ Evet, her fırsatta □ Evet, arada sırada □ Hayır, pek değil	
15. Çocuğunuza etrafta gördüğünüz şeyleri gösterip/ işaret edip isimlerini söyleyerek, yeni şeyler öğretmeye çalışır mısınız? Örneğin, "aaa bak bu kuş, balon, tren, ayıcık, top" gibi.	□ Evet □ Hayır	
16. Siz ya da başka bir aile üyesi çocuğunuzu dışarıya çıkarma fırsatı bulur mu? Örneğin, alış-verişe, parka, pikniğe, araba gezintisine vb. Yaklaşık ne sıklıkla çocuğunuzu dışarıya çıkarırsınız?	□ Evet □ Hayır	□ Yılda birkaç kez ya da daha az □ Ayda yaklaşık bir kez □ Ayda yaklaşık iki ya da üç kez □ Haftada birkaç kez □ Yaklaşık günde bir kez
17. Çocuğunuz kendi yaşındaki çocuklarla oynayabileceği bir yerlere gider mi? (Çocuk parkına gitmek, sokakta oyun oynamak gibi)	□ Evet, sık sık □ Evet, arada sırada □ Evet, nadiren □ Hayır	
18. Sıradan bir günde, çocuğunuzu, evde ya da evinizin dışında bir yerde (örneğin bakıcısında) televizyonun karşısına oturtup oyalar mısınız? Çocuğunuz, televizyonu izler mi?	□ Evet □ Hayır □ Evet □ Hayır	
19. Geçtiğimiz hafta içerisinde, çocuğunuz sizi kızdırdığında, ona hiç <u>bağırdığınız</u> oldu mu? Geçtiğimiz hafta içerisinde, çocuğunuz sizi kızdırdığında, ona hiç <u>vurduğunuz</u> oldu mu? 20. Çocuğunuz ilk defa kaç aylık/günlükken bir teknolojik cihazdan video/DVD/televizyon programına maruz kaldı (açık olduğu bir ortamda bulundu)?	□ Evet □ Hayır □ Evet □ Hayır ….....aylık ……günlük iken	

21. Sıradan bir günde, evinizde televizyon yaklaşık ne kadar süre açık kalıyor?	…….saat ……..dakika
22. Çocuğunuzun yaş grubuna göre uygun gördüğünüz televizyon programlarını belirtiniz?	…… …… ……. …….
23. Çocuğunuz televizyon programlarına mı yoksa önceden kaydedilmiş (DVD/video) programlara mı daha sık maruz kalıyor?	□ Televizyon Programları □ Önceden kaydedilmiş programlar (video)
24. Çocuğunuzun televizyon/video oynatıcı kullanımı konusunda herhangi bir kısıtlamanız var mı? Evet ise ne tür kısıtlamalar uyguladığınızı belirtiniz.	□ Evet □ Hayır □ Henüz değil Kısıtlama uygulamaları: …… …… …… …… …….
25. Çocuğunuz televizyon/DVD/bilgisayar/tablet/akıllı telefondan bir şey izlerken onun yanında bulunuyor musunuz?	□ Hayır, hiçbir zaman □ Evet, bazen □ Evet, çoğu zaman □ Evet, her zaman
26. Çocuğunuz televizyon/DVD/bilgisayar/tablet/akıllı telefondan bir şey izlerken ne sıklıkta onunla izlediği şey hakkında konuşursunuz?	□ Hayır, hiçbir zaman □ Evet, bazen □ Evet, çoğu zaman □ Evet, her zaman
27. Çocuğunuz (varsa) kardeşiyle/kardeşleriyle birlikte televizyon/DVD/video izler mi?	□ Hayır, hiçbir zaman □ Evet, bazen □ Evet, çoğu zaman □ Evet, her zaman

Appendix D: Ethical Approval Form

UYGULAMALI ETİK ARAŞTIRMA MERKEZİ
APPLIED ETHICS RESEARCH CENTER

ORTA DOĞU TEKNİK ÜNİVERSİTESİ
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08 MART 2017

Konu: Değerlendirme Sonucu

Gönderen: ODTÜ İnsan Araştırmaları Etik Kurulu (İAEK)

İlgi: İnsan Araştırmaları Etik Kurulu Başvurusu

Sayın Prof. Dr. Sibel Kazak BERUMENT;

Danışmanlığını yaptığınız yüksek lisans öğrencisi Seçil KARAKAYA'nın ***"Erken Çocukluk Döneminde Arka Planda Açık Olan Televizyonun Dil Gelişimine Etkisi"*** başlıklı araştırması İnsan Araştırmaları Etik Kurulu tarafından uygun görülerek gerekli onay **2017-SOS-043** protokol numarası ile **15.03.2017 – 31.12.2017** tarihleri arasında geçerli olmak üzere verilmiştir.

Bilgilerinize saygılarımla sunarım.

Prof. Dr. Canan SÜMER
İnsan Araştırmaları Etik Kurulu Başkanı

Prof. Dr. Mehmet UTKU
İAEK Üyesi

Prof. Dr. Ayhan SOL
İAEK Üyesi

Prof. Dr. Ayhan Gürbüz DEMİR
İAEK Üyesi

Doç. Dr. Yaşar KONDAKÇI (Ü.)
İAEK Üyesi

Yrd. Doç. Dr. Pınar KAYGAN
İAEK Üyesi

Yrd. Doç. Dr. Emre SELÇUK
İAEK Üyesi

Appendix E: Informed Consent

ARAŞTIRMAYA GÖNÜLLÜ KATILIM FORMU

Bu araştırma, ODTÜ Psikoloji Bölümü Yüksek Lisans öğrencisi Seçil Karakaya tarafından Prof. Dr. Sibel Kazak-Berument danışmanlığındaki yüksek lisans tezi kapsamında yürütülmektedir. Bu form sizi araştırma koşulları hakkında bilgilendirmek için hazırlanmıştır.

Çalışmanın Amacı Nedir?

Araştırmanın amacı, 16-24 ay yaş aralığındaki çocukların televizyon kullanımı ve dil gelişim düzeyleri hakkında bilgi toplamaktır.

Bize Nasıl Yardımcı Olmanızı İsteyeceğiz?

Araştırmaya katılmayı kabul ederseniz, sizden beklenen, kısa iki ev ziyareti sırasında size verilecek olan anketlerde yer alan bir dizi soruyu derecelendirme ölçeği üzerinde yanıtlamanız ve ilk ziyaretten ikinci ziyarete kadar olan bir hafta boyunca size verilecek olan, kısa sorulardan oluşan medya kullanım anketini doldurmanızdır.

Sizden Topladığımız Bilgileri Nasıl Kullanacağız?

Araştırmaya katılımınız tamamen gönüllülük temelinde olmalıdır. Çalışmada sizden kimlik veya kurum belirleyici hiçbir bilgi istenmemektedir. Cevaplarınız tamamıyla gizli tutulacak ve sadece araştırmacılar tarafından değerlendirilecektir. Katılımcılardan elde edilecek bilgiler toplu halde değerlendirilecek ve bilimsel yayımlarda kullanılacaktır. Sağladığınız veriler gönüllü katılım formlarında toplanan kimlik bilgileri ile eşleştirilmeyecektir.

Katılımınızla ilgili bilmeniz gerekenler:

Anketler, genel olarak kişisel rahatsızlık verecek sorular veya uygulamalar içermemektedir. Ancak, katılım sırasında sorulardan ya da herhangi başka bir nedenden ötürü kendinizi rahatsız hissederseniz anketleri cevaplamayı yarıda bırakıp çıkmakta serbestsiniz. Böyle bir durumda anketleri uygulayan kişiye çalışmadan çıkmak istediğinizi söylemek yeterli olacaktır.

Araştırmayla ilgili daha fazla bilgi almak isterseniz:

Çalışma sonunda, bu çalışmayla ilgili sorularınız cevaplanacaktır. Bu çalışmaya katıldığınız için şimdiden teşekkür ederiz. Çalışma hakkında daha fazla bilgi almak için Psikoloji Bölümü öğretim üyelerinden Prof. Dr. Sibel Kazak-Berument (E-posta: sibel@metu.edu.tr) ya da yüksek lisans öğrencisi Seçil Karakaya (E-posta: secil.karakaya@metu.edu.tr) ile iletişim kurabilirsiniz.

Yukarıdaki bilgileri okudum ve bu çalışmaya tamamen gönüllü olarak katılıyorum.

(Formu doldurup imzaladıktan sonra uygulayıcıya geri veriniz).

İsim Soyad Tarih İmza

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Appendix F: Turkish Summary / Türkçe Özet

1. Giriş

Bebekler doğum öncesi dönemde bile sesleri ve konuşmayı fark edip, ayırt edebilirler (Shahidullah & Hepper, 1994; Voegtline, Costigan, Pater, & DiPietro, 2013). Ancak, dil üretimi, yaklaşık 2 aylıkken, çeşitli sesler mırıldanmalarıyla başlar, yaklaşık 4 aylıkken başlayan agulama süreciyle devam eder ve yaklaşık bir yaşına geldiklerinde ilk kelime üretimi gerçekleşir. Yaklaşık üç yaşından itibaren, çocuklar, çok kelimeli, karmaşık yapıda cümleler kurabilecek seviyeye ulaşırlar (Berk, 2006).

Dil gelişimini etkileyen birçok faktörden, bir kısmı çocukların bireysel özelliklerine, bir kısmı ebeveynlerin özelliklerine bağlı ve diğer bir kısmı da çevresel faktörlerdir. Bakım kalitesi (Pancsofar ve Vernon-Feagans, 2006), ev ortamı kalitesi (Bradley, Corwyn, Burchinal, McAdoo, & Coll, 2001; Chang, 2017; Rodriguez ve Tamis-LeMonda, 2011), ailenin sosyoekonomik durumu (Hoff, 2003; Rice ve Hoffman, 2015; Short, Eadie, Descallar, Comino ve Kemp, 2017) ve çocukların mizaç özellikleridir (Dixon ve Smith, 2000; Gartstein, Crawford, ve Robertson, 2008; Salley ve Dixon, 2007), literatürde çocukların dil gelişimi üzerinde etkili bulunan başlıca faktörlerdendir.

Dil gelişimi üzerindeki etkisiyle dikkat çeken bir diğer çevresel faktör ise medyadır. Özellikle, okul öncesi çağından önce maruz kalınan medyanın, çocukların dil gelişimi üzerindeki etkili olduğu vurgulanmaktadır (Chonchaiya ve Pruksananonda, 2008; Tomopoulos vd., 2010; Zimmerman, Christakis ve Meltzoff, 2007).

Teknolojideki gelişmelerle beraber, küçük çocukların ve hatta bebeklerin gündelik hayatına artarak dahil olan medyanın dil gelişimi ve daha birçok gelişimsel alana etkisi çalışılmıştır. Örneğin, Lin ve arkadaşları (2015), üç yaşından küçük çocuklarda görülen televizyona maruz kalma sıklığının, motor gelişimlerindeki gecikmelerle ilişkili olduğunu göstermiştir. Bir diğer çalışma, 18 aylıkken maruz kalınan televizyon miktarının, 30 aylıkken gösterilen olumlu sosyal davranışlarla negatif ilişkili iken,

hiperaktivite-dikkat eksikliği problemleri ile anlamlı ve pozitif ilişkili olduğunu göstermiştir (Cheng, Maeda, Yoichi, Yamagata, Tomiwa ve Japonya Çocuk Çalışma Grubu, 2010). Medyaya maruz kalmanın, çocukların bilişsel gelişimine üzerinde de hem uzun hem de kısa vadeli etkileri vardır. Örneğin, bebeklik döneminde medyaya maruz kalma miktarı ileri dönemdeki gelişimsel sonuçlar arasındaki ilişkiyi inceleyen boylamsal bir çalışma, 6 aylıkken maruz kalınan toplam medya süresinin, 14 aylıkken alınan bilişsel gelişim puanları ile negatif ilişkili olduğunu ortaya koymuştur (Tomopoulos vd., 2010).

Maruz kalınan medyanın özel olarak, çocukların dil gelişimi üzerindeki etkisine dair araştırma bulguları geniş olsa bile, bulgular çoğunlukla, çocukların yaşına, maruz kaldıkları medyanın içeriğine, maruz kaldıkları şartlara göre farklılık gösterebilmektedir. Ancak, ilgili çalışmalarda, medya içeriği çocuklara yönelik/eğitici olduğu (Krcmar, 2011) ve ebeveynler medyayı küçük çocuklarıyla birlikte izledikleri durumda bile (Hanson, 2017), dil gelişim sonuçları üzerindeki etkileri, küçük çocuklar için, çoğunlukla olumsuz bulunmuştur. İki yaşından küçük çocukların dil gelişimi ile medyaya maruz kalma süreleri arasındaki ilişkiyi inceleyen bir çalışma, bebek DVD'lerine veya videolarına maruz kalınan günlük ilave her bir saatin, 8 ila 16 aylık çocukların dil puanlarındaki azalmayla ilişkili olduğunu ortaya koymuştur. Aynı çalışmada, 17 ila 24 aylık çocuklar için bu negatif ilişkinin geçerli olmadığı görülmüştür (Zimmerman, Christakis, ve Meltzoff, 2007). Ancak, Chonchaiya ve Pruksananonda (2008), günde iki saatten fazla televizyon izlemenin, 15 ila 48 aylık çocukların dil gelişimlerindeki gecikmeler için bir risk faktörü olduğunu bulmuşlardır. Ayrıca, aynı çalışmada, erken başlangıçlı (12 aylıktan önce) TV izleme ve yetişkinlere yönelik programların izlenmesi de dil gelişimindeki gecikmeler ile ilişkili bulunmuştur.

Geniş anlamıyla çalışılan medya etkisinin yanı sıra, arka planda açık olan medyaya maruz kalmanın, çocuk gelişimine etkisi de son zamanlarda tartışılmaya başlanan, ilgili çalışmaların çok daha kısıtlı olduğu bir konudur. Anderson ve Evans (2001), medyayı, "ön plan" (foreground media) ve "arka plan" medya (background media) olarak iki türe ayırmaktadır. Ön plan medyayı, çocuklara yönelik ve çocuğun dikkatini

yoğun bir şekilde verdiği programlar olarak tanıtırken, arka plan medyayı, çocuklara yönelik olmayan ve aktif olarak dikkatlerini vermedikleri, arka planda açık olan medya programları olarak tanımlamışlardır. Anderson (2017) arka planda açık olan medyanın, bebeklerin dikkatini dağıtmak ve ebeveynlerin dikkatini meşgul etmek olmak üzere iki yolla, bebeklerin gelişimini olumsuz etkileyebileceğini belirtmiştir. Bunun nedenini olarak da, çocukların yaklaşık iki buçuk yaşından önce çoğu medya içeriğini tam olarak anlayacak düzeyde olmamalarına rağmen, ebeveynleri izlerken ya da ortamda kimse izlemediği halde medya aygıtlarının ortamda açık bırakılmasıyla, kendi günlük aktiviteleri sırasında, aynı ortamda, tesadüfen maruz kalmalarını göstermiştir.

Arka planda açık olan medyaya maruz kalmanın, çocukların gelişimine etkisi konusunda, Kirkorian, Pempek, Murphy, Schmidt ve Anderson (2009), 12, 24 ve 36 aylık çocuklar ile gözlemsel bir araştırma yapmış ve arka plandaki medyanın, ebeveyn-çocuk etkileşimini hem niteliksel hem de niceliksel olarak bozduğunu bulgulamıştır. Başka bir çalışma ise, arka plandaki medyanın yine aynı yaştaki çocukların oyun oynama davranışı sıklığını, oyun sürelerini ve oyuna odaklanmayı, olumsuz etkilediğini belirtmiştir (Schmidt, Pempek, Kirkorian, Lund ve Anderson, 2008). Ayrıca yapılan boylamsal bir çalışmada, 1 yaşındaki yüksek düzeyde arka plan televizyon maruziyeti, 4 yaşında ölçülen ve işler bellek, planlama ve organizasyon becerilerini kapsayan daha düşük yürütücü işlev becerileriyle ilişkili bulunmuştur (Barr, Lauricella, Zack ve Calvert, 2010).

Arka planda açık olan medyanın, özel olarak çocukların dil gelişimine olan etkisini inceleyen çalışmalar, çocuğun aktif olarak izlediği medyanın etkisine bakanlara kıyasla oldukça sınırlıdır. Örneğin, Christakis ve arkadaşları (2009), ebeveyn-çocuk etkileşimi sırasında var olan arka plandaki televizyon sesinin, 2 ila 4 yaş arasındaki çocuklarda, dil gelişimi için önemli olan, karşılıklı konuşmada sıra alma, ebeveynlerin çocuğa yönelttiği kelime miktarı ve çocuktaki seslendirme miktarındaki anlamlı düşüşlerle ilişkili olduğunu belirtmiştir. Ayrıca, Masur, Flynn ve Olson (2016), 13 aylıkken anne ile oynanan ikili oyunlar esnasında, arka planda televizyona maruz

kalma sıklığı ile 17 aylıkken gözlemlenen çocuklardaki ifade edici kelime dağarcığı ve annelerin çocuğa yönelik konuşma miktarı arasında ters bir ilişki bulgulamıştır.

Ön planda ve arka planda var olan medyayı da içeren çevresel faktörlerin yanı sıra, çocuğun bireysel bir özelliği olan mizaç da dil gelişimi üzerinde etkili bulunan bir faktördür. Örneğin, Salley ve Dixon (2007), 21 aylık çocukların engelleme denetimi, algısal hassasiyet, dikkat odaklama ve dikkat çevirme mizaç özellikleri ile dil gelişim seviyeleri arasında pozitif bir ilişki olduğunu belirtmiştir.

Mizaç özellikleri, dil gelişiminin yanı sıra, çocuğun maruz kaldığı medya miktarı ile de bağlantılı bulunmuştur. Literatürde, yüksek derecede mızmız ve hareketli mizaca sahip olan ve düşük düzeyde kendini düzenleme becerisi olan çocukların, medyaya maruz kalma olasılıklarının daha fazla olduğu belirtilmektedir (Kochanska, Murlay ve Harlan, 2000; Radesky, Silverstein, Zuckerman ve Christakis, 2014; Thompson, Adair ve Bentley, 2013).

Mizaç özelliklerinin hem dil gelişimi hem de medyaya maruz kalma süresi ile ilişkili bulunması, bazı mizaç özelliklerine sahip çocukların, bu özelliklere sahip olmayan çocuklara kıyasla daha fazla medyaya maruz kalmak suretiyle, medyanın dil becerileri üzerindeki olumsuz etkisine daha açık oldukları şeklinde yorumlanabilir. Bu nedenle, farklı mizaç özelliklerine sahip olan çocukların dil gelişimlerinin de arka planda açık olan medyadan farklı şekillerde etkilenmesi mümkün olabilir. Benzer şekilde, Dixon ve Salley (2007), dikkatle ilgili mizaç özelliklerinde (dikkat odaklama, dikkat çevirme ve engelleme denetimi) problemli olan çocukların, çevredeki dikkat dağıtıcı etmenlerden daha fazla etkilenerek, kelime öğrenme konusunda dezavantajlar yaşadığını belirtmektedir. Aynı zamanda, uzun dikkat süresine sahip çocukların, çevresel çeldiricilerden etkilenme olasılığının daha düşük olduğunu ve böylece daha fazla yeni kelime öğrenebildiğini de belirtmişlerdir. Yüksek algısal hassasiyete sahip çocuklar da, en hafif dışsal uyaranları bile algılayabildikleri için, çevresel dikkat dağıtıcı faktörlerden kolayca etkilenebilirler (Putnam, Gartstein ve Rothbart, 2006). Bu nedenle, düşük düzeyde dikkat odaklama, dikkat çevirme, engelleme denetimi ve yüksek algısal hassasiyet mizaç özelliklerine sahip olan çocuklar, arka plandaki

uyaranları görmezden gelerek faaliyetlerini odaklı bir şekilde sürdürme konusunda problem yaşayarak, arka plandaki medyanın dikkat dağıtıcı özelliğinden daha fazla etkilenebilirler.

Bu araştırmada, çocukların arka planda açık olan medyaya maruz kalma süreleri ile dil gelişimleri arasındaki ilişkinin ve sahip oldukları mizaç özelliklerinin (algısal hassasiyet, engelleme denetimi, dikkat odaklama ve dikkat çevirme) bu ilişkideki düzenleyici rolünün incelenmesi amaçlanmıştır.

Bu amaç doğrultusunda, ilgili alan yazın incelenerek oluşturulan hipotezler aşağıdaki gibidir.

1. Çocukların maruz kaldığı arka planda açık olan medyanın toplam süresinin, hem söylenen kelime sayısına hem de kurulan cümle uzunluğuna bağlı yüzdelik dilim ile ölçülen dil gelişimi seviyeleriyle negatif ilişkili olması beklenmiştir.

2. Çocukların sahip olduğu algısal hassasiyet, dikkat odaklama, dikkat çevirme ve engelleme denetimi mizaç özelliklerinin bu ilişkide düzenleyici bir rolü olması da beklenmiştir. Spesifik olarak, arka planda açık olan medyaya maruz kalma süresi ile çocukların dil gelişim düzeyleri arasındaki negatif ilişkinin, algısal hassasiyeti yüksek olan çocuklar için daha güçlü olması beklenmiştir, çünkü bunlar, en hafif dışsal uyaranları bile algılayabildikleri için arka plan televizyonunun etkilerine daha açık olabilirler. Ayrıca, arka planda açık olan medyadan gelen uyaranları görmezden gelmek ve o esnada yapmakta faaliyeti sürdürmekle ilgili problemleri olabileceği düşünülerek, bu negatif ilişkinin, dikkat odaklama, dikkat çevirme ve engelleme denetimi mizaç özelliği düşük olan çocuklar için de daha güçlü olması beklenmiştir.

Maruz kalınan medyanın süresi, içeriği ve şartları üzerinde etkili bulunduğu için (Barr, Danzinger, Hilliard, Andolina ve Ruskis, 2010; Vandewater, Park, Huang ve Wartella, 2005), ebeveynlerin, çocuklarının medya kullanımına yönelik tutumlarının, çocukların, arka planda açık olan medyaya maruz kalma süresinin ve dil gelişim düzeyleri ile olan ilişkisi keşif amaçlı incelenmiştir.

2. Yöntem

2.1 Örneklem

Çalışmaya 16 ve 26 ay yaş aralığında çocuğu olan toplam 100 anne dahil edilmiştir. Çocukların 51'i kız, 49'u erkeklerden oluşmaktadır ($M_{yaş}$ = 20.18 ay, SD = 2.18). Katılımcı annelerin büyük çoğunluğu, Ankara, İstanbul ve İzmir'de ikamet eden, orta ve orta üstü sosyo-ekonomik statüye sahip, çalışan ve eşiyle birlikte yaşamaktaydı ($M_{yaş}$ = 32.97, SD = 4.02). Annelerin eğitim düzeyleri, ortaokuldan (%2) lisansüstü (%19) seviyesine kadar değişirken, babaların eğitim düzeyleri ($M_{yaş}$ = 35.24, SD = 4.86) ilkokul (%1) seviyesinden lisansüstü (%18) düzeyine kadar değişmektedir. Hem annelerin (%67) hem de babaların (%65) büyük çoğunluğu ise üniversite mezunudur. Annelerden edinilen bilgilere göre, çocuklardan hiçbirinin fiziksel ve/veya psikolojik bir sorunu bulunmamaktadır.

2.2 Ölçekler ve İşlem

Çalışma kapsamında, katılımcı olmaya gönüllü olan annelerden randevu alınarak, iki ayrı ev ziyaretinde bulunulmuştur. Yaklaşık 45 dakika süren ilk ev ziyareti sırasında, katılımcılara çalışmanın içeriği ve yöntemi konusunda kısa bir bilgi verilmiş ve gönüllü katılım formunu imzalamaları istenmiştir. Ardından, demografik bilgi formu ve çocukların mizaç özelliklerini incelemek amacıyla, algısal hassasiyet, dikkat odaklama, dikkat çevirme ve engelleme denetimi olmak üzere dört ayrı mizaç alt boyuttan oluşan Çocuk Davranış Anketi (1-3 yaş) (Ertekin, 2014; Putnam, Gartstein ve Rothbart, 2006) doldurmaları istenmiştir. Ayrıca, çocuğun arka planda açık olan medyaya maruz kalma süresi bilgisi için, bir hafta boyunca Medya Günlüğü doldurmaları istenmiştir. Katılımcı anneler günlük doldurmayı tamamladıktan sonra ise ikinci ev ziyareti gerçekleştirilmiştir. Yaklaşık bir buçuk saat süren son ziyaret sırasında, medya günlükleri katılımcılarla birlikte gözden geçirildikten sonra teslim alınmış ve annelerden, ev ortamındaki gelişimsel uyarım ve kaynaklar hakkında bilgi edinmek için Ebeveyn Medya Tutumları sorularını da içeren Ev Ortamı Anketi (Berument ve Sumer, 2013-2016) sorularını cevaplamaları istenmiştir. Son olarak da çocukların üretken dil gelişimi düzeylerini ölçmek için, annelerden, Türkçe İletişim

Davranışları Gelişimi Envanteri-TİGE-II (Aksu-Koç ve ark., 2008) doldurmaları istenmiştir. İkinci ve son ev ziyaretinden sonra, araştırmacı tarafından her katılımcı anneye, çocuklarının dil gelişim düzeyleri ile ilgili kısa bir geri bildirim gönderilmiştir.

3. Sonuçlar

Çalışma hipotezlerini test eden ana analizlerden önce, çalışma değişkenleri arasındaki korelasyonlar incelenmiştir. Korelasyon analizi sonuçları, anne eğitim düzeyi değişkeninin standardize ev ortamı puanları ile pozitif ve anlamlı şekilde ilişkili olduğunu göstermiştir. Öte yandan, standardize ev ortamı puanları da, toplam arka planda açık olan medya süresi ile negatif ve anlamlı şekilde ilişkili bulunmuştur. Çalışmanın ana bağımlı değişkeni olan arka planda açık olan medyaya toplam maruz kalma süresinin ise, bağımlı değişkenlerden yalnızca kurulan cümle uzunluğuna bağlı yüzdelik dilim ile anlamlı ve negatif yönde ilişkili olduğu bulunmuştur. Ayrıca, engelleme denetimi mizaç özelliğinin, hem söylenen kelime sayısına hem de kurulan cümle uzunluğuna bağlı yüzdelik dilim bağımlı değişkenleri ile pozitif yönde ve anlamlı ilişkili bulunmuştur. Dil gelişimi seviyesi göstergesi olarak ele alınan iki bağımlı değişkenin, söylenen kelime sayısına bağlı yüzdelik dilim ve kurulan cümle uzunluğuna bağlı yüzdelik dilim, birbirleriyle pozitif yönde ve anlamlı şekilde ilişkili olduğu da görülmüştür.

Çalışma hipotezleri, iki bağımlı değişken (söylenen kelime sayısına bağlı yüzdelik dilim ve kurulan cümle uzunluğuna bağlı yüzdelik dilim) için ayrı ayrı yapılan dörder basamaklı, toplam sekiz set hiyerarşik regresyon analizi ile test edilmiştir. Tüm analizlerin ilk basamağında, anne eğitim seviyesi ve standardize ev ortamı puanı etkilerinin kontrol edilmesi amacıyla analize girilmiştir. İkinci basamakta, düzenleyici rolü test edilen dört mizaç özelliği analize dahil edilmiştir. Üçüncü basamakta da, çalışmanın ana bağımsız değişkeni olan arka planda açık olan medyanın toplam süresi regresyona girilmiştir. Analizlerin son basamağında ise, düzenleyici rolü test edilen belirli bir mizaç özelliğinin arka planda açık olan toplam medya süresi bağımsız değişkeni ile etkileşimi analize eklenmiştir.

Söylenen kelime sayısına bağlı yüzdelik dilim bağımlı değişkenini yordamak için yapılan hiyerarşik regresyon analizi bulguları incelendiğinde, hiyerarşik regresyon analizinin hiçbir adımı anlamlı bulunmadı ve eklenen değişkenlerin hiçbirinin, bu sonuç değişkeninde açıklanan varyansa önemli bir katkı sağlamadığı görüldü.

Kurulan cümle uzunluğuna bağlı yüzdelik dilim bağımlı değişkenini yordamak için yapılan regresyon analizlerinin son aşamalarındaki bireysel ve etkileşim etkileri incelendiğinde, bireysel etkiler açısından, engelleme denetimi mizaç özelliğinin bu sonuç değişkenini anlamlı ve pozitif yönde yordadığı bulunmuştur. Ayrıca, dikkat odaklama mizaç özelliğinin de kurulan cümle uzunluğuna bağlı yüzdelik dilim bağımlı değişkenini negatif ve anlamlı olarak yordadığı görülmüştür. Etkileşim sonuçlarına bakıldığında ise, düzenleyici rolü incelenen mizaç özelliklerinden yalnızca algısal hassasiyetin bağımsız değişken olan arka planda açık olan toplam medya süresi ile etkileşimi anlamlı bulunmuştur. Bu sonuca göre, arka planda açık olan medyaya maruz kalma toplam süresindeki artışın, yalnızca algısal hassasiyet düzeyi yüksek olan çocuklarda, kurulan cümle uzunluğuna bağlı yüzdelik dilimindeki düşüşle ilişkili olduğu bulunmuştur. Ancak, algısal hassasiyeti düşük olan çocuklarda, arka planda açık olan medyaya maruz kalma toplam süresinin yüksek ya da düşük oluşunun bu sonuç değişkeninde herhangi anlamlı bir farklılaşmaya sebep olmadığı görülmüştür.

Çalışmada hipotez edilen ana etkilere ek olarak, ebeveynlerin çocuklarının medya kullanımı konusundaki tutumlarının öğrenildiği Ebeveyn Medya Tutumları sorularının, bağımlı ve bağımsız değişkenlerle olan ikili korelasyonları yalnızca keşif amaçlı incelenmiştir. Korelasyon sonuçlarına bakıldığında, ebeveyn medya tutumları sorularının hiçbirinin sonuç değişkenleri ile anlamlı korelasyon göstermediği görülmüştür. Buna karşın, çocukların medyaya ilk defa maruz kaldıklarındaki yaşları, sıklıkla maruz kaldıkları medya türü (TV programları/önceden kaydedilmiş programlar), ebeveynlerin çocuklarının televizyon kullanımı hakkında sahip oldukları kısıtlamaların sayısı ve medyayı çocuklarıyla birlikte izleme sıklıkları, çocukların arka planda açık olan medyaya toplam maruz kalma süreleri ile negatif olarak ilişkili bulunmuştur. Sıradan bir günde televizyonun evde açık olma süresinin ise, çocukların

arka planda açık olan medyaya toplam maruz kalma süreleri ile pozitif yönde ilişkili olduğu görülmüştür.

Ebeveyn medya tutumları sorularının kendi aralarındaki ilişkileri incelendiğinde ise, çocukların medyaya ilk defa maruz kalma yaşlarının, evde sıradan bir günde televizyonun açık olma süresi ile negatif yönde ilişki iken, ebeveynlerin çocuklarının televizyon kullanımı hakkında sahip oldukları kısıtlamaların sayısı ile pozitif yönde ilişkili olduğu görülmüştür. Evde sıradan bir günde televizyonun açık olma süresi de, çocukların sıklıkla maruz kaldıkları medya türü (TV programları/önceden kaydedilmiş programlar), ebeveynlerin çocuklarının televizyon kullanımı hakkında sahip oldukları kısıtlamaların sayısı ve medyayı çocuklarıyla birlikte izleme sıklıkları ile negatif yönde ilişkili bulunmuştur. Çocuğun yaşı için uygun olduğu düşünülen program türleri (0 = "eğitici olmayan / yetişkin"; 1 =" eğitici + eğitici olmayan"; 2 =" sadece eğitici", 3 ="hiçbir program"), yalnızca ebeveynlerin çocuklarının televizyon kullanımına ilişkin sahip oldukları kısıtlamaların sayısı ile anlamlı derecede pozitif korelasyon göstermiştir. Çocukların sıklıkla maruz kaldıkları medya türü ise, ebeveynlerin çocuklarının televizyon kullanımı hakkında sahip oldukları kısıtlamaların sayısı ve medyayı çocuklarıyla birlikte izleme sıklıkları ile pozitif yönde anlamlı ilişki göstermiştir.

4. Tartışma

4.1 Bulguların Değerlendirilmesi

Literatürde, çocuğun arka planda medyaya maruz kalmasının, çocukların dil gelişiminde çok önemli etkisi olan ebeveyn ve çocuk arasında sözel etkileşimi, ebeveynle çocuk arasındaki konuşma sırasında çocuğa yöneltilen ifadelerin kalite ve miktarını ve aynı zamanda, direkt olarak çocuklardaki dil gelişim sonuçlarını olumsuz şekilde etkilediği belirtilmiştir (Christakis vd, 2009; Kirkorian vd., 2009; Masur vd., 2016; Pempek vd., 2014). Korelasyon analizleri sonucunda, arka planda açık olan medyaya toplam maruz kalma süresinin, bağımlı değişkenlerden kurulan cümle uzunluğuna bağlı yüzdelik dilim ile anlamlı ve negatif yönde ilişkili olduğu bulunmuştur. Ancak, hiyerarşik regresyon analizlerinde, çocukların dil gelişim

sonuçları ve arka planda açık olan medyaya maruz kalma süreleri arasında, hipotez edildiği gibi negatif yönde anlamlı olarak yordadığı sonucuna ulaşılamamıştır. Bunun sebebinin, çocukların dil gelişimi üzerinde etkili olarak gösterilen ev ortamı ve anne eğitim seviyesinin olası etkilerinin yapılan analizlerde kontrol edilmesi olabileceği düşünülmektedir (ör., Rice ve Hoffman, 2015; Rodriguez ve Tamis-LeMonda, 2011).

Önceki çalışmalar, çocukların dil gelişim seviyelerinin, sahip oldukları engelleme denetimi, algısal hassasiyet, dikkat odaklama ve dikkat çevirme mizaç özellikleri ile pozitif yönde ilişki olduğunu belirtmiştir (Salley ve Dixon, 2007). Aynı zamanda, bazı mizaç özellikleri, çocukların maruz kaldığı medya miktarı ile de bağlantılı bulunmuştur (Radesky, Silverstein, Zuckerman, & Christakis, 2014;Thompson, Adair ve Bentley, 2013). Ayrıca, dikkatle ilgili mizaç özellikleri (örn., dikkat odaklama, dikkat çevirme ve engelleme denetimi) problemli olan çocukların, çevredeki dikkat dağıtıcı etmenlerden daha fazla etkilenerek, kelime öğrenme konusunda dezavantaj yaşarken; uzun dikkat süresine sahip çocukların, çevresel çeldiricilerden daha az etkilenerek daha fazla kelime öğrendiği de literatürde belirtilmiştir (Dixon ve Salley, 2007). Öte yandan, yüksek algısal hassasiyete sahip çocukların da, çevreden gelen en hafif uyaranları bile algılayabildikleri için, çevresel dikkat dağıtıcı faktörlerden kolayca etkilenebileceği bilinmektedir (Putnam, Gartstein ve Rothbart, 2006). Bu bulgular doğrultusunda, engelleme denetimi, algısal hassasiyet, dikkat odaklama ve dikkat çevirme mizaç özellikleri, mevcut çalışmada, dil gelişimi ve arka planda açık olan medyaya maruz kalma süreleri arasındaki ilişkide olası düzenleyici değişkenler olarak incelenmiştir. Yapılan analizler sonucunda, yalnızca algısal hassasiyet mizaç özelliğinin, hipotez edildiği gibi, arka planda açık olan medyaya maruz kalma süresi ile bağımlı değişkenlerden yalnızca kurulan cümle uzunluğuna bağlı yüzdelik dilim arasındaki ilişkide düzenleyici bir rol oynadığı görülmüştür. Bulguya göre, arka planda açık olan medyaya maruz kalma toplam süresindeki artışın, yalnızca algısal hassasiyet düzeyi yüksek olan çocuklarda, kurulan cümle uzunluğuna bağlı yüzdelik dilimindeki düşüşle anlamlı şekilde ilişkilidir. Arka plan medyası gibi bir dikkat dağıtıcı etmeni göz ardı edememek anlamına gelebilecek olan, en hafif dış uyaranları bile fark edebilme olarak belirtilen algısal hassasiyet mizacı tanımı da bu bulgunun bir destekleyicisi olarak görülebilir (Putnam, Gartstein ve Rothbart, 2006).

Öte yandan, engelleme denetimi, dikkat odaklama ve dikkat çevirme mizaç özelliklerinin, arka planda açık olan medyaya maruz kalma süresi ve dil gelişimi sonuç değişkenleri arasındaki ilişkide, hipotez edildikleri gibi düzenleyici bir rolleri olduğu bulgusuna rastlanmamıştır. Engelleme denetimi ve dikkatle bağlantılı mizaç özelliklerinin çocukların dil gelişim sonuçlarıyla olan ilişkisinin iki yönlü olması bu durumun bir sebebi olabilir. Örneğin, yapılan bir çalışmada, dil becerilerinin, dikkat çevirme ve ketleme becerilerini de kapsayan yürütücü işlev becerileri üzerindeki yordayıcı gücünün, karşıtından daha sağlam olduğunu bulunmuştur (Slot ve von Suchodoletz, 2018). Yürütücü işlev becerilerinin, engelleme denetimi ve dikkatle ilgili mizaç özellikleriyle yakın ilişkili olduğu da literatürde belirtilmektedir (Bridgett, Oddi, Laake, Murdock ve Bachmann, 2013).

Yapılan regresyon analizlerindeki bireysel etki sonuçlarındaki, engelleme denetimi mizaç özelliğinin kurulan cümle uzunluğuna bağlı yüzdelik dilim bağımlı değişkenini anlamlı ve pozitif yönde yordadığı bulunmuştur. Bu bulgu, alan yazındaki diğer çalışmalar tarafından da desteklenmektedir (Salley ve Dixon, 2007). Ancak, beklenmeyen bir şekilde, dikkat odaklama mizacının, kurulan cümle uzunluğuna bağlı yüzdelik dilim bağımlı değişkenini anlamlı ve negatif yönde yordadığı bulunmuştur. Gözlemlenen dikkat odağı becerilerinin yaşla birlikte arttığı ve 2 yaşına kadar çok değişken olduğu literatürde belirtilmektedir (Ruff ve Lawson, 1990). Bu nedenle, bu sürpriz bulgu, çalışmada yer alan çocukların, arka plan medyası ve diğer farklı dışsal çeldirici faktörleri görmezden gelerek, dikkatlerini belirli bir aktivite üzerine odaklayabilmek için yeterince olgun olmamalarından kaynaklanmış olabileceği düşünülmektedir. Bu sebeple, anneler, çocuklarındaki dikkat odaklama mizaç özelliğini yeterince gözlemleme fırsatı bulamadıkları için, güvenilir bir şekilde rapor etmemiş olabilirler.

Literatürde, ebeveynlerin, çocuklarının medya kullanımına yönelik tutumlarının ve kısıtlama davranışlarının, çocukların maruz kaldığı medya süresi, içeriği ve şartları üzerinde etkili olduğu belirtilmiştir (Barr, Danzinger, Hilliard, Andolina, ve Ruskis, 2010; Vandewater, Park, Huang, ve Wartella, 2005). Mevcut çalışmada yapılan keşif amaçlı ikili korelasyon analizleri sonucunda, benzer şekilde, arka planda açık olan

medyaya maruz kalma süresinin, çocuğun ilk defa medyaya maruz kaldığı yaşı, hangi medya türüne daha sık maruz kaldığı, ebeveynlerin medya konusunda çocuğa uyguladığı kısıtlama sayısı, ve medyayı çocuklarıyla beraber izleme davranış sıklığı ile anlamlı ve negatif yönde ilişkili olduğu bulunmuştur. Sıradan bir günde televizyonun evde açık olma süresiyle ise pozitif yönde ilişkili çıkmıştır.

4.2 Çalışmanın Katkıları ve Güçlü Yönleri

Çalışmanın önemli güçlü yönlerinden biri, çocukların maruz kaldığı medya bilgisinin, yedi gün süren günlük yöntemi ile alınmasıdır. Bu yöntem, çocukların maruz kaldığı medya hakkındaki verilerin güvenirliğini arttırmaktadır. Arka plan medyası literatürü çok yeni ve kısıtlı olduğundan, arka plan medyası ile çocukların dil gelişimi arasındaki ilişkinin araştırılması, mevcut çalışmanın önemli bir katkısıdır. Mizacın olası düzenleyici rolünün incelenmesi de yapılan diğer bir önemli katkıdır. Bilgimize göre, bu çalışma, mizacın medya ve dil ilişkisinde olası düzenleyici rolünü ele alan ilk çalışmadır. Bunların dışında, ebeveyn medya tutumlarının, çocukların arka planda maruz kaldığı medya ile ilişkisinin incelenmesi, olası hafifletici tutumlar hakkında farkındalığı artırmak açısından önemli bir katkıdır.

4.3 Sınırlılıklar

Çalışmanın kesitsel (cross-sectional) bir desenle yürütülmüş olması, neden-sonuç ilişkisinin belirtilmesini engellemektedir. Gelecek çalışmalarda, boylamsal desen kullanılması, bulguları güçlendirebilir. Çalışma verilerini toplamakta yalnızca anne raporlarının kullanılmış olması da önemli bir sınırlılıktır. Katılımcı annelerin eğitim seviyesinin yüksek olması da, arka plandaki medyanın çocuklara etkisi konusunda koruyucu bir rol oynamış olabileceğinden, bu çalışmanın bir sınırlılığıdır.

4.4 Öneriler

Gelecek çalışmalarda, mevcut çalışma, farklı yaş grupları ve özellikle düşük SED aileler olmak üzere, farklı sosyo-demografik karakterdeki aileler ile tekrarlanabilir. Ayrıca, mizaç özelliklerini gözlemsel incelemek ve dil gelişimini kısa süreli anne-çocuk oyun oturumu sırasında ölçmek gibi gözlemsel yöntemler kullanmak daha farklı ve güvenilir bulgulara yol açabilir. Bu çalışmada, ebeveyn medya tutumları ile

bazı değişkenler arasındaki ilişkilerin incelendiği gibi, gelecekteki çalışmalarda annelerin medya kullanım alışkanlıkları da dikkate alınabilir. Arka plan medyasına maruz kalmayı arttırıcı risk faktörlerinin incelenmesi, ebeveynleri olası sonuçları hakkında bilgilendirmek ve müdahale programları düzenleyebilmek açısından önemlidir.

Appendix G: TEZ FOTOKOPİSİ İZİN FORMU

ENSTİTÜ

Fen Bilimleri Enstitüsü ☐

Sosyal Bilimler Enstitüsü ☒

Uygulamalı Matematik Enstitüsü ☐

Enformatik Enstitüsü ☐

Deniz Bilimleri Enstitüsü ☐

YAZARIN

Soyadı : Karakaya
Adı : Seçil
Bölümü : Psikoloji

TEZİN ADI : The Effect of Background Media on Early Childhood Language Development

TEZİN TÜRÜ : Yüksek Lisans ☒ Doktora ☐

1. Tezimin tamamından kaynak gösterilmek şartıyla fotokopi alınabilir. ☐
2. Tezimin içindekiler sayfası, özet, indeks sayfalarından ve/veya bir bölümünden kaynak gösterilmek şartıyla fotokopi alınabilir. ☐
3. Tezimden bir (1) yıl süreyle fotokopi alınamaz. ☒

TEZİN KÜTÜPHANEYE TESLİM TARİHİ: