Electronic media use by children in families of high socioeconomic level and familial factors

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The aim of this research was to describe electronic media access and use among children aged 6 months to 15 years and to identify familial factors. Data was collected with a questionnaire from 724 parents of children seen in the pediatric outpatient clinic of a private hospital while they awaited examination. Questions included electronic media ownership at home or in the child's bedroom, household habits of electronic media use, educational and occupational status of parents, smoking and alcohol consumption at home, and family income. The top three electronic media devices present at home were television, computer and DVD. On a typical day, 32% of children watched television for approximately less than 1 hour, 36% for 2 hours and 22% for 3 hours. Mean television viewing time was 1.89±0.76 hours. Nearly 12% of parents spent less than 30 minutes with their children, whereas 28% spent 1 hour, and 59% more than 1 hour. Older children spent more time watching television than the younger ones. Forty-six percent of children used computer and the internet at home on a typical day. Almost 20% of children also had a television in their bedroom and spent more time watching television than those without a television in their bedroom, and the ratio increased by age (one-fifth of 3-5-year olds, one-fourth of 6-10-year-olds and half of 11-15-year-olds, on average). The present study provides data for the education and counselling of parents about the use of electronic media by children and it will contribute to increasing the awareness and sensitivity of the population by drawing attention to the subject.

Key words: electronic media, television viewing time, parents, children.

In the 21st century, starting from childhood, people receive the majority of their information from the media, which include television, computer, DVD, magazines, movies, the internet, video games, music, books, videos, and all forms of advertising. Years ago, mass media consisted of only newspapers and radio, but today this situation has changed enormously, and the electronic media has become involved in the lives of children. Electronic media is on the agenda of the scientific world for its negative influence, due to its uncontrolled and unlimited use, rather than for the benefits it offers to children, such as easy access to information, for example about different geographies and cultures, linguistic development, and positive social and personal messages[1-4]. Among children and adolescents, research shows that the important areas of concern are: aggressive behavior and violence, desensitization to violence, substance use and abuse, ophthalmologic problems, obesity, sleep disorders, psychiatric problems, mood disorders, sexuality, body image, self-concept, advertising, marketing, and consumerism[2-4]. A recent study conducted in Thailand found that early intense exposure to television defined as viewing 2 or more hours per day before 12 months was associated with a six-fold increase in the likelihood of language delay[5]. Visual messages encouraging the use of tobacco, alcohol and illicit drugs are gradually increasing in the media, with popular movies featuring the leading actor captured in the scenes where he is smoking and drinking alcohol[1,2].

The American Academy of Pediatrics (AAP) recommends not allowing children under two years to watch television; instead, they should be directed to activities such as talking, playing games together, singing, reading, and playing sports and creative games. The AAP also recommends parents to limit the media time, including qualitative programs (together with entertainment media), to 1-2 hours for older kids, to control and to view programs that their children are watching and to have discussion on these programs, not to keep a television in the child's bedroom, to support the educational and informational programs not including violence and sex, and to be informed particularly by the pediatricians[6]. In brief, the AAP advises parents to limit the time children spend with media as well as playing computer and internet games[2].

Although babies and toddlers have been targeted in the electronic media market in recent years, the influence of electronic media on these age groups is not well known and the term 'Digital Childhood' is being used to define it influence[7]. In 1971, the average age at which children began to watch television was almost four years; today it is five months[8]. Therefore, the aim of the present study was to describe the electronic media access and the habits of the children aged 6 months to 15 years, as well as to evaluate the effect of demographic and familial factors.

Material and Methods

Data was collected using a questionnaire that was presented to 724 parents of children waiting to be examined in the pediatric outpatient clinic of a private hospital in İstanbul. The questionnaire form consisted of questions about the household electronic media ownership and access, the educational and occupational status of the parents, cigarette smoking and alcohol consumption at home, and the monthly income of the family. Partly because children who are aged 6 months to 15 years reflect different developmental stages and partly because the AAP recommendation focuses on children who are younger than two years, all analyses were conducted separately for four age groups as: 6 months to 2 years; 3 to 5 years; 6 to 10 years; and 11 to 15 years. All statistical analyses were performed using the SPSS version 15.0 for Windows (SPSS Inc., Chicago, IL). A value of $p \leq 0.05$ was considered statistically significant. One way analysis of variance was used to compare the mean amount of time spent watching television by the children, mothers and fathers with other variables, chi-square test was used to compare the rate of the internet use among children according to their sex, and paired t-test was used to compare the television viewing time of mothers and fathers.

Results

The survey included 724 parents (for children aged 0-2, n=203; for children aged 3-5, n=306; for children aged 6-10, n=156; for children aged 11-15, n=59) of children who were aged 6 months to 15 years. The mean age for the children was 4.6±3.2 years. Of the parents who participated in the study, 77% were mothers and 23.3% were fathers. Approximately half of the mothers (49%) worked full time, 9% worked part time, and 42% were not in the paid-labor force. The top three electronic media devices present at home were television (100%), computer (91%) and DVD (88%). Table I shows sociodemographic characteristics, household electronic media ownership and access of children and their parents according to the children's age. Of the families, 19% reported that there was a television in the child's bedroom. Thirty-nine percent reported that they determined a period of less than 1 hour for watching television, 36% determined a period of 2 hours and 23% determined a period of more than 2 hours; 3% of the families reported that they had not designated a period of time for viewing television for their children. Despite these time periods set by the parents, mean television viewing was determined as less than 1 hour for 32% of the children, 2 hours for 36%, and 3 hours for 22%; nearly 9.5% reported that they had no idea about the duration of their viewing. Table II presents descriptive statistics regarding television use among children and their parents. With the exclusion of the children with unknown mean television viewing time (9.5%), for the remaining 655 children, mean television viewing time was 1.89±0.76 hours. Mean television viewing time was found to be significantly different between the age groups ($p<0.05$). It is apparent that older children

spend more time watching television compared to the younger ones, and the rate of having a television in their bedroom is also higher (Tables I, II). Parallel to this finding, having a television in a child's bedroom was associated with increased hours of television viewing time (Table III). Parents were queried regarding the time spent talking and playing together with their children and reading for them and responses were as follows: 12% reported spending less than 30 minutes, 28% 1 hour, and 59% more than 1 hour. Of the parents, 87% answered 'yes' to the question, 'Do you choose the programs that your children are watching?'. When the television viewing time of parents was queried, it was learned that 12% of the fathers did not know the exact period of time, whereas 23% watched television for 1 hour, 30.1% for 2 hours, 21% for 3 hours, and 13% for 4 hours. Of the mothers, 5% did not know the exact period of time, whereas 31% watched television for 1 hour, 34% for 2 hours, 18% for 3 hours and 12% for 4 hours. When the parents with unknown duration of watching television (12% for fathers and 5% for mothers) were excluded, it was determined that mean television viewing time of the mothers was 2.13±1.01 hours, whereas it was 2.28±1.017 hours for fathers. Meanwhile, the parents of older children were assessed to spend more time watching television than those having younger children (Table II). The television viewing time of children increased as the television viewing time of parents increased (Table IV).

When the smoking habits of parents at home were examined, it was learned that 25% of all fathers and 30% of all mothers smoked at home. When the alcohol use of parents was questioned, it was determined that 15% of all fathers and 25% of all mothers consumed alcohol at home. No significant correlation was found between smoking or alcohol consumption at home and the television viewing time ($p>0.05$) (Table V). It was learned that 46% of the children in the entire group used computer and the internet at home and this rate gradually increased with the older age groups (the higher rates were seen in 11-15-year-old children), and the rate of using computer/internet for education was 29% (Table I). No significant difference was observed between the internet use rates of girls and boys. It was observed that television viewing time of the children included in the study was not significantly influenced by the monthly income of the family, smoking and alcohol habits of the parents, occupational status of the mother, or educational status of the father, whereas it was significantly influenced by the educational status of the mother and the presence of a television in the child's bedroom. In general, higher parental education was associated with decreased hours of television (Table III).

Discussion

The incentive for this research came from the striking lack of empirically based knowledge about the extent of exposure to and use of electronic media and technology by Turkish children aged 6 months to 15 years and their families. The study provides the most recent information available regarding the extent of media use and media access by children and their parents in families of high socioeconomic level. Overall, the results of this survey indicate that children are using media daily and make it clear that this generation of children is growing up in a media-saturated environment especially from the beginning of infancy. However, it is also true that this study presents that children's use of electronic media is still, in a large proportion, dominated by television. On the other hand, new technologies (computer, DVD, video, internet ownership and access) seem to be affecting daily life as much as television. For example, 46% of children used computer and the internet at home on a typical day. Especially the older children reported high ratios of computer and internet access as with television. Almost one-fifth (19%) of the whole group also had a television in their bedroom and spent more time watching television than children without a television in their bedroom, and the ratio increased with age (one-fifth of 3-5-year-olds, one-fourth of 6-10-year-olds and half of 11-15-year-olds, on average). However, the smallest age group had the smallest ratio (5%) perhaps because of Turkish family attitudes regarding their children (they are generally not left alone unless 2 years of age and unless the baby is asleep). Eighty-eight percent of the very young children (aged 6 months-2 years) fell outside the guidelines recommended by the AAP (no television before 2 years). Mean television viewing time of this

Table I. Sociodemographic Characteristics, Electronic Media Ownership and Access of Children and Their Parents According to Children's Age

Parameter	6 months-2 years (n=203)	3-5 years (n=306)	6-10 years (n=156)	11-15 years (n=59)
	n(%)	n(%)	n(%)	n(%)
Child's sex				
Male	98(49)	156(51)	87(56)	30(51)
Television in household	203(100)	306(100)	156(100)	59(100)
Television in child's bedroom	10(5)	61(20)	37(24)	28(47)
Computer in household	187(92)	272(89)	144(92)	59(100)
Video game console in household (Play Station)	47(23)	55(18)	64(41)	36(61)
Computer and internet usage of child at home	28(14)	113(37)	133(85)	58(98)
DVD in household	177(87)	275(90)	136(87)	52(88)
Video in household	35(17)	70(23)	39(25)	26(44)
Computer and internet only used for education	182(90)	241(79)	75(48)	13(22)
Cigarette smoking of mothers at home	43(21)	132(43)	41(26)	6(10)
Cigarette smoking of fathers at home	53(26)	119(39)	42(27)	5(8)
Alcohol drinking of mothers at home	37(18)	40(13)	25(16)	8(14)
Alcohol drinking of fathers at home	57(28)	64(21)	41(26)	17(29)
Maternal Employment Status				
Full-Time	99(49)	171(56)	59(38)	25(42)
Part-Time	26(13)	21(7)	12(8)	8(14)
Unemployed	77(38)	116(38)	84(54)	26(44)
Maternal Education				
Primary school	8(4)	15(5)	16(10)	5(8)
High School	39(19)	64(21)	45(29)	18(31)
University or higher	156(77)	230(75)	93(60)	36(61)
Father's Education				
Primary school	10(5)	12(4)	17(11)	5(8)
High School	41(20)	83(27)	48(31)	9(15)
University or higher	152(75)	211(69)	90(58)	45(76)

group is 1.49±0.68 hours (Table II). This may be due partly to the fact that parents do not know about the AAP recommendations and partly because they use television as a babysitter. The rise in infant television viewing began in the late 1990s and has become an increasingly common occurrence. By 3 months of age, about 40% of children regularly watch television, DVDs or videos. The median age at which regular media exposure is introduced is 9 months[8]. Today, over 90% of children begin watching television regularly before the age of 2 years in spite of recommendations to the contrary, and no studies to date have demonstrated benefits associated with early infant viewing[9]. However, a large proportion of the older children (69%) in the study group watched television for periods consistent with the guidelines (no more than 2 hours). The literature indicates that between 40% and 48% of children exceed these recommended guidelines[10]. Familial factors of parents having some rules, like restriction of viewing time, and no television in the child's bedroom positively affect the time spent viewing television[7]. For example, in the present study, 39% of parents

Table II. Television Viewing Time of Children and Their Parents by Children's Age*

	6 months-2 years (n=178)†	3-5 years (n=285)†	6-10 years (n=138)†	11-15 years (n=54)†	*F*	P
Television viewing time of child (hours/day)	1.49±0.68	1.96±0.76	2.04±0.73	2.39±0.56	29.562	0.0001
Television viewing time of mother (hours/day)	1.99±1.05	2.01±1.09	2.02±1.00	2.04±1.06	0.041	0.989
Television viewing time of father (hours/day)	2.04±1.14	2.01±1.18	1.85±1.21	1.87±1.16	0.942	0.420

*Unknown television viewing times of children (9.6%) were excluded.
†Data are presented as mean±SD.

Table III. Children's Television Viewing Time According to Several Characteristics of Parents*

		Television viewing time of children	F	P
Maternal Employment Status	Unemployed (n=267)	1.95 ±0.75	1.436	0.239
	Full-Time (n=325)	1.85±0,78		
	Part-Time (n=63)	1.83±0.77		
Maternal Education	Primary school (n=37)	2.03±0.83	5.300	0.005
	High school (n=142)	2.05±0.77		
	University (n=476)	1.83±0.75		
Father's Education	Primary school (n=36)	2.08±0.77	2.440	0.088
	High school (n=159)	1.96±0.77		
	University (n=460)	1.85±0.76		
Alcohol drinking of mothers at home	Yes (n=101)	1.82±0.71	0.866	0.352
	No (n=554)	1.90±0.76		
Cigarette smoking of mothers at home	Yes (n=114)	1.98±0.78	2.174	0.143
	No (n=541)	1.87±0.76		
Alcohol drinking of fathers at home	Yes (n=164)	1.82±0.75	1.827	0.177
	No (n=491)	1.91±0.77		
Cigarette smoking of fathers at home	Yes (n=140)	1.93±0.84	0.524	0.470
	No (n=515)	1.88±0.75		
Television in child's bedroom	Yes (n=533)	2.16±0.74	20.172	0.000
	No (n=122)	1.82±0.76		
Family income (monthly)	Declined to answer (n=188)	1.85±0.74	0.239	0.916
	<$3500 (n=137)	1.91±0.81		
	$3500-$7000 (n=215)	1.88±0.76		
	$7000-$10000 (n=68)	1.93±0.80		
	>$10000 (n=47)	1.94±0.77		

*Data are presented as mean±SD.

Table IV. Correlation Between Television Viewing Time of Children and Their Parents*

	Television viewing time of parents (hours/day)	Television viewing time of child (hours/day)	F	P
Television viewing time of mother (hours/day)	1 h (n=207)	1.74±0.76	7.727	.000
	2 h (n=226)	1.89±0.74		
	3 h (n=120)	2.08±0.80		
	4 h (n=74)	2.14±0.73		
Television viewing time of father (hours/day)	1 h (n=159)	1.65±0.74	10.646	.000
	2 h (n=208)	1.87±0.71		
	3 h (n=135)	2.04±0.81		
	4 h (n=78)	2.15±0.79		

*Data are presented as mean±SD.
h: Hour.

defined a television viewing time of less than 1 hour, 36% defined 2 hours, and 23% defined >2 hours; 3% did not define any viewing time. In the present study, the mean television viewing time of children in the 6 months-15 years group (1.89±0.76 hours per day) was slightly longer than the mean television viewing time (1.45±1.5 hours per day) that was found in a study in children below 11 years by Christakis et al.[11]. However, as seen in the present study, the mean television viewing time prolongs with age; therefore, we thought that the difference might have resulted from the longer viewing time of the children aged 11-15 years. In addition, it was reported in the study by Christakis et al.[11] that 26% of the children had a television in their rooms, whereas this ratio was 19% in the present study. In a previous study from Turkey, the mean television viewing time of preschool children (ages 3-6 years) was longer than of primary school children (ages 7-11 years), unlike the similar age groups of our study[12]. On the other hand, the percentage of having a television in the child's bedroom (21%) was similar to our result. In the present study, only 3% of the families in the whole group had not determined a time period for viewing television, whereas 88% of the families reported that they select the programs that their child watches. However, in a study with a smaller group of young children performed by Yalçın et al.[12], 15.3% of the families had no rules about watching television at home, but different

Table V. Correlation Between Parents' Cigarette and Alcohol Habits and Their Television Viewing Time*

		Television viewing time (h)	F	P
Alcohol drinking of mothers at home	yes (n= 107)	1.99±0.96	2.337	0.127
	no (n= 583)	2.15±1.02		
Alcohol drinking of fathers at home	yes (n= 161)	2.17±0.95	2.316	0.129
	no (n= 476)	2.32±1.04		
Cigarette smoking of mothers at home	yes (n=120)	2.18±1.05	0.444	0.505
	no (n=570)	2.12±0.99		
Cigarette smoking of fathers at home	yes (n=146)	2.51±1.07	10.157	0.82
	no (n=491)	2.21±0.99		

*Data are presented as mean±SD.

results have been reported in various studies[13]. Although the television viewing time among children was not influenced by the smoking and alcohol habits of their parents, socioeconomic status of the family, occupational status of the mother, and educational status of the father, it was significantly influenced by the television viewing time of parents, educational status of the mother, and the presence of a television in the child's bedroom. In addition, it was observed that children spend more time watching television as they grow older. There are differences among the studies performed on the factors that influence the amount of time children spend watching television. In the study by Yalçın et al.[12], it was emphasized that sociodemographic characteristics of the parents and the child, the time that the child begins to watch television, his or her sleeping duration, and the presence of a television in the child's room do not influence the amount of time the child spends watching television, whereas the amount of time his or her sibling and mother spend watching television is an effective factor. This is related to the children's considering their siblings and mothers as role models. Quite consonant with the present study, Dennison et al.[14] showed that children spend more time watching television as they grow older and the children who have a television in their bedroom spend more time watching television compared to those who do not. In the study performed by Burdette et al.[15] and in the study performed by Christakis et al.[11], the education and income of the parents were determined to be effective. In both studies, it was emphasized that parents with low income and low education think that the television is instructional and entertaining, and approve of their children watching television since they have no other choice. In the present study, we observed that children spent more time watching television as they grew older as well as in conjunction with increased parental viewing time. This may be related to the children considering their parents as role models, while on the other hand, it may be because they are released from their parents' control. Wake et al.[16] showed that older children spend more time on activities such as television and computer. In their studies, Chen et al.[17] also found that the age group was influential on television viewing time and that older children spent more time watching television.

In recent years, it has been put forward that television or other visual or written media has an influence on the increase in alcohol use among youth. It was shown that habitual viewing of television is a risk for excess alcohol use or may enhance alcohol use and that the symptoms of alcoholism may present in early ages[18,19]. In a study by Glantz et al.[20], in which they compared the rate of smoking with the 1950s, they determined a considerable increase. In these studies, it was reported that television has made a positive contribution to this increase. It was suggested that this positive contribution is associated with the smokers' being introduced in the movies as more successful and as entrepreneurs. It was determined that smokers had been introduced as more successful and attractive in the most-watched 62 movies between 1960 and 1990[21,22]. Gutschoven et al.[23] showed a positive correlation between watching television and smoking and beginning to smoke, and suggested that every single hour spent watching television causes smoking to begin 60 hours earlier. Generally, children accept their parents as a role model. However, different from the literature, in the present study, no significant relation was determined between smoking and alcohol use of parents at home and their own television viewing time or that of their children (Tables III, V).

Walsh et al.[24] reported that 92% of children aged 2-17 years play video or computer games in the United States, but unfortunately, families are not aware of the content of these games and how their children are influenced. As we report the high percent of computer, video and Play Station ownership, especially increasing with age, the same threat seems to be affecting Turkish children.

No significant difference was observed between girls and boys in terms of the rates of internet use. In the overall group, it was observed that nearly half of the children use the internet at home, and one-third of them use the internet for education. While the internet use for education was higher in smaller ages, it was observed to decrease through the adolescent period. In accord with the study performed on Turkish adolescents by Bayraktar and Gun[25], the present study gives rise to the thought that internet and computer are frequently

used for entertainment and communication in the adolescent period. The results obtained from a current survey described that children frequently have unpleasant experiences while using the web and there is very little supervision from parents, who underestimate the risk of web access[26]. When the literature was reviewed, it was observed that no study has been performed on the internet use of very young children. Therefore, we think that the results of the present study should be confirmed by further research.

Several limitations of this study must be considered. First, our sampling group generally relied on a high socioeconomic population from a large metropolitan city and may not be generalized to other populations, including other regions of the city and the country. Second, as with any survey study, concerns can be raised about non-respondents of media usage time. Third, we do not have detailed information about the content and usage time of children on new technologies like computer, the internet, DVD, and video games. Of course, as the parents were requested to complete a questionnaire while waiting to be seen in our outpatient clinic, there was insufficient time for many detailed questions. Media exposure is likely to increase with the popularity of new technologies and the internet. Perhaps combined usage of these new technologies exceeds television usage.

Providing effective information and counselling to the parents is related with knowledge about the state of children's television viewing and their use of other media devices as well as about parental knowledge, attitude and practices. If the amount of time that children spend using electronic media and the influencing factors are known, required precautions to prevent addiction or overuse can be taken and negative effects can be reduced.

In conclusion, the present study provides data for the education and counselling of parents about the use of electronic media by children, and it will contribute to increasing the awareness and sensitivity of the population by drawing attention to the subject.

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