

ORIGINAL ARTICLES

HOW DO YOUNG CHILDREN SPEND THEIR TIME? - TELEVISION VIEWING HABITS IN CHILDREN YOUNGER THAN ONE YEAR AND PARENTAL LIMITS ON TELEVISION EXPOSURE WITHIN A LITERACY PROMOTION SAMPLE

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Abstract

Background: The American Academy of Pediatrics (AAP) advises no television (TV) for children before 2 years of age. Despite pediatric providers providing anticipatory guidance about parent-child interaction in the first year of life, young children watch TV daily. While Hispanic children have been found to watch more television, other parental-related factors may affect their young children's television exposure.

Objectives: 1) Determine leisure activities including TV viewing habits of children younger than 1 year of age who attended a literacy promotion clinic. 2) Compare TV viewing to other infant leisure activities, including reading 3) Determine parental limits on TV exposure.

Methods: Cross-sectional study of data from a cohort study related to literacy promotion. Parents reported child's TV viewing habits, favorite TV shows, and their limits on TV exposure. Comparisons made between Hispanic and non-Hispanic children.

Results: A total of 252 children were selected for this analysis with mean age of 10.3 ± 1.5 months. Of these, 70 (52%) were male and 118 (47%) were Hispanic. One hundred fifty nine (63%) children watched TV daily with mean hours of 1.1 ± 2 per day with no differences between groups. Only 88 (35%) parents reported TV watching as a leisure activity; of these, 33 (37%) were Hispanic compared to 55 (63%) of non-Hispanic origin ($p=0.03$). A total of 151 (66%) of parents limited type of shows; only 93 (37%) had limited time, with no differences between groups.

Conclusions: Young children watched television daily. In our sample, ethnicity was associated with increased report of TV viewing as a leisure activity, but did not seem to have an association with time of exposure or parental limits on TV exposure.

Key words: children, Hispanic, television viewing, parental limits

Introduction

Television exposure has been associated with negative effects on children's health, including sleep disturbances, violent behaviors, and attention problems. (1-3) Television viewing has also been associated with decreased physical activity, less consumption of fruits and vegetables, increased rates of overweight status and altered body image. (4, 5) Television viewing in early childhood may affect future cognitive and educational achievement, as well as language development, unless there is parent-child interaction during media exposure. (6-8)

Almost every American household (99%) has at least one television set. (6) It has been shown that young children watch television daily. Researchers with the Kaiser Family Foundation found that 43% of children younger than two years of age watched television daily, with up to 2 hours and 5 minutes devoted to screen time every day. (9) Increased amount of television viewing early in infancy has been correlated with increased amount of television watching during the school age years. (1, 10)

Children are likely to watch more television if there is a television set in their bedroom (10), if their mothers have low levels of education (11), or if they are from minority ethnic groups. (9) Hispanic infants between 4 and 11 months watched an average of 1 hour of television in a study looking at a national representative sample. (12) In this study, language preference was found associated to viewing habits, as infants of Spanish-speaking Hispanic mothers watched less television than English-speaker Hispanic or White mothers. In the United States, individuals who identify themselves as Hispanic are the largest ethnic minority, estimated to be at 52 million (16% of the total population). (13) The label 'Hispanic' refers to people who identify themselves as Hispanic in origin, including Mexican, Cuban, Puerto Rican, Central American, and South American. (14)

The first two years of life are very important for children's brain growth and cognitive development. Interactive activities such as talking, playing, singing and reading promote the development of neuronal connections during this critical period of growth. Passive television viewing could displace other activities that would be more beneficial for children's cognitive development. (6, 7, 11, 15) Therefore, the American Academy of Pediatrics (AAP) recommends that children under 2 years of age do not watch television. (16) Television exposure includes background media where the infant is exposed when someone else is watching. While pediatricians are familiar with the AAP recommendations, their advice to parents about limiting media exposure and encouraging more interactive activities is not being followed. (16, 17)

Although recent studies have looked at television use by children under two years of age (7, 12), to the best of our knowledge there are few studies looking at television viewing compared to other activities in infants younger than 1 year of age, or to parental limits regarding infants' television exposure. We sought to describe how young children spent their time, including television-viewing habits, in a sample of patients from a

pediatric clinic where anticipatory guidance on parent-infant interaction activities was routinely offered during well child visits. The objectives of this study were: 1) To determine leisure activities including television viewing habits of children younger than 1 year of age who attended a literacy promotion clinic; 2) to compare television viewing to other infant leisure activities, including reading; and 3) to determine parental limits on TV exposure specifically time and type of shows allowed to watch.

Methods and materials

This was a cross-sectional study of children ages 7 to 13 months in a hospital-based pediatric clinic serving low-income minority patients. Selection of age group was based on developmental milestones that allow for interaction between child and caregiver. These children were part of a larger prospective study on literacy promotion and language development, where parents received books and advice about reading with their children daily by the English/Spanish bilingual research assistant and/or by a child development specialist from the Healthy Steps for Young Children Program during a well-child visit. All children who presented for scheduled well child visits between December 1997 and December 2003 were invited to participate in the larger prospective study. Few parents refused to participate; data regarding these subjects is not available. Subjects were excluded if their birth occurred before 31 weeks of gestation, if there were serious birth complications leading to abnormal attainment of developmental milestones, or if they had a history of hearing deficits. The inclusion criteria were infants 6 months and older who had achieved normal developmental milestones at the time of enrollment, and whose parents' spoken language was English, Spanish, or Bilingual (English/Spanish and English/Other).

The hospital-based pediatric clinic serves a multi-ethnic, low-income urban population in Houston, Texas. Parents were asked to identify themselves with one of the following ethnic groups: White, Hispanic, African-American, and Other. Parents also provided information related to country of birth and number of years living in the United States.

The English/Spanish bilingual research assistant interviewed families and administered the study questionnaire. Demographic data included child's age, gender, ethnicity, primary language spoken at home, and maternal level of education. Parents answered open-ended questions about their child's favorite leisure activities (i.e. 'what are your child's three favorite activities to do with you?'); then they were asked to choose from a list the child's most favorite activity to do with a caregiver or alone. Parents were

asked whether their child watched television daily. Then they were asked to report the amount of hours per day their child spent watching TV. Time was recorded verbatim then converted to hours per day (i.e. 15 minutes = 0.25 hrs). Parents were asked to name their child's three favorite television shows. Lastly, parental limits on frequency and time of TV exposure were ascertained by asking parents if they limit the amount of television their child could watch. Those who answered 'yes' were asked to state the amount in hours they allowed per day. Limits on type of TV exposure were measured by asking parents whether they limited the type of shows their child could watch.

The inclusion criteria for this secondary data analysis were children whose initial visit occurred at 7 through 13 months. For the purpose of this analysis, children whose parents identified their ethnicity to be other than Hispanic were grouped under non-Hispanic. At the time of our analysis, the larger prospective study had already ended.

A categorical variable "television orientation" was created. Children were considered to have a positive television orientation if their parents reported "Watch TV or Videos" as one of their child's activities to do with a caregiver or alone, or if they chose "Watch TV or Videos" from a list of activities to do with a caregiver or alone as described above.

Statistical analysis was done using SPSS for Windows (version 13.0). Chi-square was used for categorical variables, and t-test was used for continuous variables. Two-sided p values less than 0.05 were considered statistically significant. Comparisons were made between the groups of Hispanic and non-Hispanic children.

Results

Demographics : A total of 252 children met the criteria and were included in this analysis. Mean age was 10.3 ± 1.5 months, with a median of 9 months (minimum 7, maximum 13 months). Males represented 52% (n = 70) of the sample population. Ethnicity was 118 (47%) Hispanic and 134 (53%) non-Hispanic. Within Hispanics, based on mothers' country of birth, 52 (44%) were from the United States, 53 (45%) were from Mexico, 12 (10%) were from other Central American or South American country and 1 was missing data. Those in the non-Hispanic group were from the following ethnic groups: White 28 (21%), African-American 91 (68%) and Asian 15 (11%). Primary language spoken at home was English in 137(55%), Spanish in 58 (23%), English/Spanish in 42(17%), English/other in 11 (4%) and Other (Vietnamese, Chinese) in 3 (1%). Maternal level of education was grouped based on completion of high school education

as follows: less than high school in 89 (35%), high school diploma or GED in 99 (39%) and more than high school education in 62 (25%). There were significant differences between parents of Hispanic and non-Hispanic children in regards to child's gender, maternal level of education, and primary language spoken at home (Table 1). Only 2 households did not have a television; overall mean number of television sets per household was 2.2.

Children's Leisure Activities : Table 2 summarizes children's reported favorite activities to do with a caregiver or alone. In general, parents reported their child's favorite activity to do with a caregiver was Listen to Music 87 (35%), Play Inside 67 (27%), Play Outside 58(23%), Watch TV or Videos 25 (10%), Read 11(4%) and other 3(1%). Reported child's favorite activity to do alone was Play Inside 146 (59%), Watch TV or Videos 33 (13.4%), Listen to Music 33 (13.4%), Play Outside 20(8%), Read 8(3.2%) and other 7(3%). There were no significant differences between Hispanic and non-Hispanic children in regards to reported child's favorite activity to do with a caregiver or alone (table 2).

Caregivers were asked how often they read books with their child, took them to the park, or told stories to their child (Table 3). Parents of Hispanic children reported a significantly decreased frequency of reading with their child when compared with parents of non-Hispanic children ($p=0.04$), and were significantly more likely to take their child to the park than parents of non-Hispanic children ($p=0.03$). There were no differences between groups in regards to telling stories. (Table 3)

Television Viewing Habits : Children's television exposure was measured in several ways. Parents reported whether their child watched television daily (frequency); they also reported the number of hours their child watched every day (time). Favorite television shows were listed (type). These findings are summarized in Table 4.

Frequency : Overall, 159 (63%) children reportedly watched television daily. Of these, 67 (57%) were Hispanic and 92 (43%) were non-Hispanic children ($p=0.05$).

Time : In general, children watched a mean 1.1 ± 2 hours (minimum 0, maximum 8 hours) of television per day with a median of 0.5 hours per day. Only 60 (24%) of children watched zero hours per day, while 126 (50%) of children watched 2 hours or less per day and 58 (23%) watched more than two hours daily. Information was missing for 8 (3%) of the sample. There were no differences between Hispanic and

non-Hispanic children in regards to mean hours of TV watched ($p=0.11$).

Favorite Television Shows : Parents were asked to list their child's favorite television shows. "None" was recorded when parents did not report a favorite show, or when they thought the child was too young to have a favorite show. Television shows were classified as intended for children or not, and as educational vs. entertainment, based on descriptors available on the TV Guide Online. (18)

Only 148 parents reported a favorite television show. Of these, 133 parents (90%) listed a show intended for children as their child's favorite television show; 106 (80%) of these were educational shows and 27 (20%) were entertainment or animated shows. The educational shows most frequently listed were Barney, Sesame Street and Teletubbies. The entertainment shows intended for children most frequently listed were Winnie the Pooh, Rugrats, Franklin and Sponge Bob. Only 15 parents (10%) listed a show that was intended for a general audience rather than intended for children as their child's favorite television show. Some of these shows included Fresh Prince of Bellaire, Wheel of Fortune, wrestling shows, and commercials. There were no differences between Hispanic and non-Hispanic children in regards to type of shows watched ($p =0.76$).

Television Orientation : Only eighty-eight children (35%) were identified as having a positive television orientation. Among these, Hispanic children were significantly less likely to have a positive television orientation than non-Hispanic children ($p=0.03$). Table 5 summarizes these findings.

Television orientation was associated with the number of television sets in the household. Within the group of children with a positive television orientation, 15 (17%), reported having one television set, 34 (39%) reported 2 television sets and 39 (44%) reported 3 or more television sets in the household ($p=0.04$).

There were no significant differences in the child's favorite activities to do with caregivers or alone based on television orientation. Also, television orientation was not significantly related to parental report of the frequency of reading with the child, taking the child to the park, or telling stories to the child.

Parental Limits : In general, only 93 parents (37%) reported limiting the amount of time their child could watch. Of these, only 1 parent reported allowing zero hours of television daily; 43 parents (46%) allowed two hours or less per day, and 33 (36%) allowed more than two hours per day. Sixteen parents (17%) did not report how many hours they allowed their children to

Table 1: Characteristics of sample population, baseline comparisons.

Demographics		Hispanic N(%)	Non-Hispanic N (%)	p Value
Total (N=252)		118 (47%)	134 (53%)	
Gender	Male	70 (59%)	60 (45%)	(0.02)
	Female	48 (41%)	74 (55%)	
Mean Age (months)		10.2	10.1	(0.59)
Maternal Education	Less than high school	55 (47%)	34 (26%)	(<0.001)
	High school or GED	46 (39%)	53 (40%)	
	More than High School	16 (14%)	46 (34%)	
Primary Language at home	English	21(18%)	116 (87%)	(<0.001)
	Spanish	56 (48%)	2 (1%)	
	Bilingual English/Spanish	37(32%)	5(4%)	
	Bilingual English/other	3(2%)	8(6%)	
	Other	0(%)	3 (2%)	
TV at home	Yes	118 (100%)	132 (99%)	(0.18)
	No	0 (0%)	2 (1%)	
Mean number of TV Sets in Household		2.1	2.3	(0.39)

Table 2 : Children’s reported favorite activities to do with a caregiver or alone

Activities	Favorite Activities with Caregiver	
	Hispanic Children N (%)	Non-Hispanic Children N (%)
Listen to Music	39 (33%)	48 (36%)
Play inside	27 (23%)	40 (30%)
Play outside	34 (29%)	24 (18%)
Watch TV or videos	10 (9%)	15(11%)
Road	5 (4%)	6 (4.5%)
Other (Sleep, kiss/hug, take bath)	2 (2%)	1 (0.5%)

p=Not significant

Activities	Favorite Activities Alone	
	Hispanic Children N (%)	Non-Hispanic Children N (%)
Play inside	60 (52%)	86 (65%)
Watch TV or Videos	15 (13%)	18 (14%)
Listen to Music	20 (17%)	13 (10%)
Play outside	11 (10%)	9 (7%)
Road	5 (4%)	3 (2%)
Other (Art, sleep, take path, eat)	4(4%)	3(2%)

p=Not significant

watch. Overall, 151 parents (66%) reported limiting the type of shows their child could watch. There were no statistically significant differences between Hispanic and non-Hispanic children in regards to parental limits on time or type of shows allowed to watch. (Table 6)

Discussion

This study provided information on young children’s leisure activities reportedly done with caregivers or alone. Listening to music and playing were the activities most commonly done with a caregiver. While television

Table 3 : Reported frequency of activities by ethnicity

	Hispanic N (%)		Non-Hispanic N (%)		P value
	Daily/ Weekly	Monthly/ Never	Daily/ Weekly	Monthly / Never	
Read books with Child (n=252)	90 (76%)	28 (24%)	109 (81)	25 (19%)	(0.04)
Take child to the Park (n=250)	55 (47%)	61 (53%)	45 (34%)	89 (66%)	(0.03)
Tell stories to Child (n=149)	21 (29%)	51 (71%)	30 (39%)	47 (61%)	(0.17)

Table 4 : Children’s Television Exposure

Frequency	Hispanic N (%)	Non-Hispanic N (%)	P Value	
Watch TV daily	67 (57%)	92 (43%)	(0.05)	
Time	Main Hours Watched per day		95%CI	P Value
Children total	1.1			(0.11)
Hispanic Children	0.96			
NonHispanic Children	1.25			
Children with Positive TV Orientation	1.5			
Favorite TV Shows	Hispanic N (%)	Non Hispanic N (%)	P Value	
Listed a TV Show (n=148)	68 (58%)	80 (60%)	(0.95)	
Type of shows Watched				(0.76)
Educational	50 (71%)	56 (68%)		
Entertainment	11 (16%)	16 (20%)		
General Audience	7 (13%)	8 (12%)		

viewing was listed as one of the child’s activity to do either with a caregiver or alone, this activity did not have a measurable impact on other children’s leisure activities (i.e. reading). This is consistent with recent findings by Vandewater et al. where television viewing did not affect time spent reading or being read to. (19) While we found no ethnic differences in regards to reported child’s leisure activity to do with a caregiver or alone when chosen from a list, parents of Hispanic children did report decreased frequency of reading and increased frequency of taking children to the park. In contrast with data by Thompson et al, parents of Hispanic children in our study were less likely to report TV viewing as a child’s leisure activity to do with a caregiver or alone compared to parents of non-Hispanic children. (12)

Our study showed that children younger than one year of age watch television daily regardless of their

ethnicity. We also found that children who live in households with more than 2 television sets were more likely to report television viewing as a leisure activity. This would be consistent with findings by Rideout et al who reported that children who live in ‘heavy’ television households, where the television is on most of the time, tended to watch more television and spend less time reading. (9)

While more than half of parents limited the type of shows their young children could watch, only a third of parents limited the time of television exposure. Young children in our sample watched mostly educational shows. This may reflect the influence of parents’ own television-viewing habits and their beliefs that watching television is educational and relaxing for the young child. (11)

Our study had several limitations: this was a secondary data analysis of a previously collected data

Table 5 : Children’s Television Orientation defined by reported “Watching TV and Videos” as one of the child’s favorite activities to do with a caregiver or alone

	Television orientation		p.value
	Positive N (%)	Negative N (%)	
Total	88 (35%)	164 (65%)	
Ethnicity			(0.03)
Hispanic	33 (28%)	85 (72%)	
Non Hispanic	65 (41%)	79 (59)	
Number of TV sets in household			(0.04)
None	0 (0%)	1 (0.5%)	
One	15 (17%)	50 (31%)	
Two	34 (39%)	63 (38%)	
Three or More	39 (44%)	49 (30%)	
Missing Data	0 (0%)	1(0.5%)	
Favorite Activity with Caregiver			(0.15)
Read	4 (6%)	7 (4%)	
Listen to Music	21 (33%)	66 (40%)	
Play Inside	14 (22%)	53 (33%)	
Play Outside	23 (37%)	35 (22%)	
Other	1(2%)	2 (1%)	
Favorite Activity Alone			(0.29)
Read	0 (0%)	8 (5%)	
Listen to Music	6 (11%)	27 (17%)	
Play Inside	42 (78%)	104 (65%)	
Play Outside	6 (11%)	14 (9%)	
Other	0(0%)	7 (4%)	
Reported frequency of parent child activities by Television Orientation			
Read Books with child			(0.60)
Daily/Weekly	71 (80%)	128 (78%)	
Monthly/Never	17 (20%)	36 (22%)	
Tell Stories to child			(0.80)
Daily/Weekly	43 (49%)	88 (54%)	
Monthly/Never	44 (51%)	74 (46%)	
Take Child to the Park			(0.90)
Daily/Weekly	69 (78%)	129 (80%)	
Monthly/Never	19 (22%)	33 (20%)	

Table 6 : Parental Limits on Television Exposure by Ethnicity

	Hispanic N (%)	Non Hispanic N (%)	p-value
Limit TV time (N=249)	42 (36%)	51 (39%)	(0.59)
Hours Allowed to watch (N=77)			
Zero hours per day	0 (0%)	1(2%)	(1.00)
Two hours or less per day	19 (56%)	24 (56%)	
Two or more hours per day	15 (44%)	18 (42%)	
Limit type of TV Show (N-228)	64 (60%)	87 (71%)	(0.08)

that only allowed for descriptive information. Parental report of the activities, time spent watching television, and information regarding limits on television exposure may have been affected by recall bias. The small sample size and the convenient sampling in one clinic site did not allow us to further differentiate the non-Hispanic group and may have introduced selection bias.

Despite its limitations, our study described how young children spent time in the context of attending a literacy promotion pediatric clinic and receiving anticipatory guidance during well child visits. In the increasingly media-oriented world we live in nowadays, it is imperative that pediatric healthcare professionals become knowledgeable of the media effects on children. Media history and education should become part of anticipatory guidance to families. (16,17) Recommendations about media exposure given during anticipatory guidance become more important in families from low socioeconomic status and ethnic minorities, as these have been found to be associated with increased media exposure.

Future research should look for unique differences between all ethnic groups and expand on the cultural aspects that could affect how young children spend their time, including television exposure.

Conclusions

Children as young as one year of age watch television daily, despite the American Academy of Pediatrics recommendations of no television before two years of age. Time spent watching television did not seem to directly affect other children's leisure activities. Hispanic parents were less likely to report watching television as one of the child's favorite activities to do with a caregiver or alone. Educational programs intended for children were the most frequently watched programs. Most parents set limits on type of shows. However, regardless of ethnicity, many parents did not set limits on time of television exposure. Pediatric healthcare professionals should warn parents of the potential negative effects of television on children. Parents should be advised to limit the time of television exposure starting early in infancy.

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