The Family Context of Low-Income Parents Who Restrict Child Screen Time

Amy M. Lampard, PhD, MPsych,¹ Janine M. Jurkowski, PhD,² and Kirsten K. Davison, PhD¹

Abstract

Background: The American Academy of Pediatrics recommends that parents restrict child screen time to two hours per day, but many preschool-aged children exceed this viewing recommendation. Modifying children's viewing habits will require collaborating with parents, but little is known about the factors that influence parents' capacity for effective screen-related parenting. This study aimed to identify the demographic, family and community contextual factors associated with low-income parents' restriction of child screen time.

Methods: Parents ($N = 146$) of children (age 2–5 years) attending Head Start centers in the United States completed a self-report survey in 2010 assessing parent and child screen use (television, DVD, video, video games, and leisure-time computer use), parent restriction of child screen time, and family (parent stress, social support, and life pressures) and community (neighborhood safety and social capital) factors.

Results: Children were more likely to meet the American Academy of Pediatrics screen time recommendation if their parent reported high restriction of child screen time. Parent and child demographic characteristics were not associated with parents' restriction of child screen time. In multivariate analysis, less parent screen time, fewer parent life pressures, and greater social support were associated with parents' high restriction of screen time.

Conclusion: Family contextual factors may play an important role in enabling low-income parents to restrict their children's screen time. When counseling low-income parents about the importance of restricting child screen time, practitioners should be sensitive to family contextual factors that may influence parents' capacity to implement this behavior change.

Introduction

Because child screen viewing is associated with overweight status and subsequent weight gain,^{1–3} efforts are needed to reduce child screen time (television [TV], video, digital video disc [DVD], video game, and leisure time computer use). In response, the American Academy of Pediatrics (AAP) recommends that child bedrooms be free from TV sets and that children engage in no more than 2 hours of screen viewing per day.⁴ Over one third of US children 2–5 years of age, however, exceed this recommendation,⁵ and children in low-income families are at even greater risk.^{5,6}

Because the majority of children's screen viewing occurs in the home environment,⁷ parents are in a unique position to influence their children's screen-viewing habits. Screen-related parenting is also likely to be effective; parent rules about TV are consistently associated with less TV viewing in children.^{8–10} It is therefore apparent that modifying children's viewing habits will require collabo-

rating with parents. The need to work with parents, however, is compromised by the often publically voiced accusation that parents use TV and other screens as “baby sitters.” This judgment is made despite the fact that we know very little about parents' restriction of children's screen time or factors affecting this decision.¹¹ As a result, there is little information to guide practitioner conversations with parents around this sensitive topic.

Understanding the factors that influence screen-related parenting will enhance efforts to work with parents to reduce child screen time. The Family Ecological Model^{12,13} proposes that family and community contextual factors influence parents' capacity to implement positive parenting practices for child health. The implication of this model is that low-income parents' intent and/or capacity to restrict child screen time may be limited by a number of family and community factors relevant to low-income families, including parent stress, time pressures, social support, and neighborhood conditions. Yet, few interventions to reduce sedentary behavior in children have targeted family or

¹Department of Nutrition, Harvard School of Public Health, Boston, MA.

²Department of Health Policy, Management and Behavior, University at Albany, State University of New York, Rensselaer, NY.

community contextual factors.^{14–16} Given the mixed success of interventions to date,^{14–16} a broader understanding of family and community factors affecting screen-related parenting may open new avenues to support behavior change in families.

In this study, we aimed to (1) examine the relationship between parents' screen-time restriction and children's adherence to the AAP screen-viewing recommendations and (2) identify demographic, family, and community contextual factors associated with parents' screen-time restriction. We focused on children from low-income families because these children are at greater risk of exceeding screen-time recommendations^{5,6} and childhood obesity.^{17,18} Because screen-viewing behaviors are established early in life and track from preschool age to adolescence,¹⁹ we focused on screen-related parenting for children 2–5 years of age. In previous analyses, we found that parents reported greater restriction of child screen time when they considered it important and had high self-efficacy to do so.²⁰ Moving beyond cognitive predictors of parent restriction, this study examined theoretically based links with family and community factors that may be disproportionately experienced by low-income families. Consistent with the Family Ecological Model, we hypothesized that greater parental restriction of child screen time will be associated with lower perceived stress, fewer life pressures, greater social support, higher perceived neighborhood safety, and higher social capital. Hypotheses were informed by the Family Ecological Model¹³ and research suggesting that these family and community factors are associated with child screen time^{21–24} and parenting for child healthy weight.^{25–27}

Methods

Study Sample and Procedures

Participants were recruited from five Head Start centers in upstate New York between September and November 2010. Head Start is a federal service that supports the cognitive, social, and emotional development of preschool-aged children from low-income families. Parents or primary caregivers (hereafter referred to as parents) of Head Start children ($N=423$) 2–5 years of age were eligible to participate. Participation was limited to one parent per family. Participants ($N=154$; 36.4% of the eligible sample) were recruited through poster displays in Head Start centers, flyers, and information packets sent home with children as well as through information stands set up in centers during “pick up” time. Eight children were outside the target age range for the current study (2–5 years), reducing the sample size to 146. Parents completed a self-report survey assessing demographic characteristics, parent weight and height, parent and child screen-viewing habits, and relevant community and family factors. In instances where multiple children in a family were enrolled in Head Start, parents were asked to respond to questions with reference to their oldest child in Head Start. Parti-

pants were compensated for their time with a \$20 gift card. Parents were classified as overweight (BMI, 25.0–29.99) or obese (BMI, ≥ 30) in accord with World Health Organization classifications.²⁸ Child height and weight, measured yearly by Head Start programs, were extracted from Head Start records. Age- and sex-specific BMI z-scores were calculated and used to identify children who were overweight (85th to <95th percentile) or obese (≥ 95 th percentile), based on CDC 2000 growth charts.²⁹ Written informed consent was obtained from all subjects. Procedures were approved by the institutional review board at the University at Albany (Rensselaer, NY).

Measures

Outcome measure. Parents' restriction of child screen time was assessed using a single item from the Activity Support Scale^{30,31} (“I make sure that my child watches TV, plays video games, or uses the computer for no more than 2 hours per day [in total]”) and a 4-point response scale (1 = *strongly disagree* to 4 = *strongly agree*). Given the skewed nature of the data, responses were reduced to a dichotomous variable. Parents were categorized as “high screen time restrictors” (*strongly agree*) or “low screen time restrictors” (*agree, disagree, strongly disagree*).

Screen-viewing habits. Parents reported the time their child spent (1) watching TV, DVDs, or videos, (2) playing video games, and (3) using a computer for leisure. Questions were asked separately for a typical weekday and a typical weekend day and were modeled on items from the New York State Department of Health Eat Well Play Hard in Child Care Settings survey. Items were combined to create a measure of *child screen time* (i.e., average minutes per day watching TV, DVDs, or videos, playing video games, and using the computer for leisure). Parents responded to the same questions with reference to their own screen time, and responses were used to create a measure of *parents' screen time*. The presence of a TV in the child's bedroom was assessed with the item, “Does your child have a TV in his or her bedroom?” (*yes/no*).

Family and community contextual variables. Three family contextual factors were assessed. *Parent stress* was measured using the four-item version of the Perceived Stress Scale,³² which has demonstrated convergent validity with a measure of life hassles ($r=0.44$).³³ Items (e.g., “In the last month, how often have you felt that difficulties were piling up so high that you could not overcome them?”) were rated on a 5-point scale (ranging from 0 = *never* to 4 = *very often*; sample alpha = 0.76). Parent-perceived *life pressures* and priorities in relation to child screen time were assessed using three investigator-developed items (“Sometimes life is so stressful that limiting how much my kids watch TV or play video games is the least of my worries”; “I have bigger problems to worry about than what my kids watch on TV”; and “Because our schedules

are so busy, we often watch TV to unwind”; sample $\alpha=0.71$). Items were rated on a 4-point scale (ranging from 1 = *strongly disagree* to 4 = *strongly agree*). *Social support* was assessed using the four-item Significant Other subscale of the Multidimensional Scale of Perceived Social Support (MSPSS).^{34,35} Items (e.g., “There is a special person around when I am in need”) were rated on a 7-point scale (ranging from 1 = *very strongly disagree* to 7 = *very strongly agree*; sample $\alpha=0.99$). The Significant Other subscale from the MSPSS has shown satisfactory internal consistency and construct validity in adult samples.^{34,35}

Two community characteristics were measured. Neighborhood *play safety* was assessed using an investigator-developed item. Parents rated the item, “How safe is it for your child to play outside your home (in the yard or on the sidewalk)?” on a 5-point scale (1 = *extremely dangerous* to 5 = *extremely safe*). Parents’ perception of neighborhood *social capital* was measured using four items adapted from the National Survey of Children’s Health³⁶ (“People in my community help each other out”; “We watch out for each other’s children in this community”; “There are people I can count on in this community”; and “If my child were outside playing and got hurt or scared, there are adults nearby who I trust to help my child”). Items were rated on a 4-point scale (ranging from 1 = *definitely disagree* to 4 = *definitely agree*; sample $\alpha=0.86$). This measure has been used in previous studies examining the relationship between social capital and child outcomes and has been associated with physical activity parenting,²⁵ youth physical activity,³⁷ and childhood obesity.³⁸

Statistical Analysis

Data were inspected for outliers. One case was excluded for reporting >24 hours of parent screen time and one case did not report parent restriction of screen time ($N=144$).

The first aim of this study was to examine the relationship between parents’ screen-time restriction and children’s adherence to the AAP screen viewing recommendations. First, associations between parents’ restriction of child screen time (high vs. low) and children’s adherence to the AAP recommendations regarding total screen time (yes/no) and the presence of a TV in the child’s bedroom (yes/no) were examined using chi-square analysis. *Phi* was reported as the measure of effect size for chi-square comparisons (0.1 = small effect; 0.3 = medium effect; 0.5 = large effect). Second, because parent screen time is a potential confounder of the relationship between parents’ restriction of child screen time and child adherence to AAP screen viewing recommendations, logistic regression was performed controlling for parent screen time.

The second aim of this study was to identify demographic, family, and community contextual factors associated with parents’ screen-time restriction. This aim was achieved in two stages. First, logistic regression was used to estimate bivariate associations between demographic (parent BMI, screen time, age, education and ethnicity; child BMI *z*-score, age, and gender), family (parent stress,

life pressures, and social support) and community (play safety and social capital) factors, and high parent restriction of screen time. Second, multivariate logistic regression was used to estimate the adjusted association between study variables and parent restriction. All variables found to be associated with high restriction of child screen time in bivariate analyses at $p<0.25$ were entered into multivariate logistic regression.³⁹ Analyses were performed using IBM SPSS Statistics software (version 20; IBM Corporation, Armonk, NY).

Results

Participant Characteristics

Demographic characteristics of participants are reported in Table 1. The majority of parents were female (93%), and 55% of children were female. Median child screen time was 174 minutes per day (interquartile range [IQR] = 116) or slightly less than 3 hours per day. The majority of children exceeded the AAP screen-time recommendation (66%) and had a TV in their bedroom (66%). Median parent screen time was 249 minutes per day (IQR = 186). The vast majority of parents (90%) reported more than 2 hours of screen viewing per day.

Parent Restriction of Screen Time and AAP Recommendations

Twenty-nine percent of parents ($N=42$) were classified as high restrictors of child screen time, and the remainder were classified as low restrictors of child screen time ($N=102$). A significantly greater percentage of children of high restricting parents (54%) met the AAP screen-time recommendation than children of low restricting parents (25%; $\chi^2(1)=9.95$; $p=0.002$; $\phi=0.29$). A greater percentage of children of high restricting parents (43%) had a TV-free bedroom than children of low restricting parents (30%), but this difference was of small effect size and did not reach statistical significance ($\chi^2(1)=2.19$; $p=0.139$; $\phi=0.14$). In logistic regression controlling for parent screen time, children of parents who reported high screen time restriction were over three times more likely to meet the AAP screen-time recommendation than children of parents who reported low screen-time restriction (odds ratio [OR] = 3.15; 95% confidence interval [CI] = 1.33, 7.47; $p=0.009$). However, children of parents who reported high screen-time restriction were not significantly more likely to have a TV-free bedroom than children of parents who reported low screen-time restriction (OR = 1.72; 95% CI = 0.73, 4.09; $p=0.22$).

Demographic, Family, and Community Contextual Predictors of Parents’

Restriction of Child Screen Time

Descriptive statistics for study variables for high and low restricting parents are reported in Table 2. Bivariate logistic regression models were conducted to identify

Table 1. Demographic Characteristics of the Study Sample

Demographic variable	Summary statistic
Parent age (years; mean, SD)	31.2 (11.2)
Child age (years; mean, SD)	3.7 (.9)
Parent weight status (%) ^a	
Overweight	31
Obese	36
Child weight status (%) ^b	
Overweight	26
Obese	21
Respondent relationship to child (%)	
Mother	90
Father	4
Grandmother	6
Ethnicity (%)	
Non-Hispanic white	71
Non-Hispanic black	22
Hispanic	4
Other	3
Highest education level (%)	
Did not complete high school	3
High school graduate	17
Some college	38
College graduate	42
Marital status (%)	
Married	18
Divorced or separated	12
Never married/single	44
Member of unmarried couple	26

^aParents were classified as overweight (BMI, 25.0–29.99) or obese (BMI, ≥30) in accord with World Health Organization classifications.²⁸

^bAge- and sex-specific BMI z-scores were used to identify children who were overweight (85th to <95th percentile) or obese (≥95th percentile).

SD, standard deviation.

Table 2. Descriptive Statistics for Study Variables for High and Low Restricting Parents

	Parents' restriction of child screen time	
	Low (n=102)	High (n=42)
Parent characteristics		
BMI: median (IQR) ^a	27.0 (9.0)	27.5 (12.1)
Age (years): median (IQR) ^a	27.6 (8.4)	27.5 (7.7)
<4 hours screen time per day % (n)	35 (31)	65 (34)
College graduate % (n)	40 (41)	48 (20)
Non-Hispanic white % (n)	72 (71)	69 (27)
Child characteristics		
BMI z-score: mean (SD)	.90 (1.33)	.95 (1.09)
Age (years): mean (SD)	3.6 (0.90)	3.7 (0.81)
Female % (n)	56 (55)	51 (21)
Family factors		
Perceived stress: mean (SD)	1.6 (0.7)	1.1 (0.7)
Life pressures: mean (SD)	1.9 (0.5)	1.4 (0.5)
Social support: median (IQR) ^a	6.0 (2.5)	7.0 (1.0)
Community factors		
Play safety: mean (SD)	3.7 (1.1)	3.9 (1.1)
Social capital: mean (SD)	2.6 (0.7)	2.8 (0.9)

^aMedian and IQR are reported for measures with a skewed distribution.

IQR, interquartile range; SD, standard deviation.

high restriction of screen time (Table 3; Cox and Snell $R^2 = 0.30$).

Discussion

In this study of low-income families, 54% of preschool-aged children met the AAP screen-time recommendation when a parent reported high restriction of child screen time, compared with 25% for children whose parents reported low restriction. Family contextual factors explained variability in parents' restriction of screen time. Specifically, less parent screen time, fewer parent life pressures, and greater parent social support were associated with high restriction of child screen time in multivariate analyses. These findings highlight the need to consider families' broader life circumstances when counseling parents about the need to restrict child screen time.

Parent and child demographic characteristics were not associated with parents' restriction of child screen time. This finding is encouraging, given that these factors cannot

demographic, family, and community contextual factors associated with parents' restriction of screen time (Table 3). Parent screen time, parent stress, life pressures, and social support were significantly associated with parents' restriction of child screen time in bivariate analyses. In the multivariate model, less parent screen time, fewer life pressures, and greater social support were associated with

Table 3. Bivariate and Multivariate Logistic Regression Predicting Parents' High Restriction of Child Screen Time

	Bivariate models		Multivariate model	
	OR (95% CI)	p value	OR (95% CI)	p value
Parent characteristics				
BMI	1.01 (0.96, 1.06)	0.81	—	—
Age (years)	0.98 (0.95, 1.02)	0.41	—	—
Low screen time (<4 hours daily)	3.45 (1.55, 7.72)	0.002	2.79 (1.06, 7.32)	0.037
College graduate	1.35 (0.66, 2.79)	0.41	—	—
Non-Hispanic white	.89 (0.40, 1.99)	0.77	—	—
Child characteristics				
BMI z-score	1.03 (0.77, 1.38)	0.84	—	—
Age (years)	1.19 (0.77, 1.83)	0.44	—	—
Sex (male)	1.22 (0.59, 2.53)	0.60	—	-
Family factors				
Perceived stress	0.37 (0.21, 0.66)	0.001	0.65 (0.32, 1.33)	0.24
Life pressures	0.12 (0.05, 0.28)	<0.001	0.12 (0.04, 0.33)	<0.001
Social support	1.50 (1.11, 2.04)	0.008	1.59 (1.10, 2.30)	0.014
Community factors				
Play safety	1.21 (0.86, 1.70)	0.27	—	—
Social capital	1.37 (0.84, 2.24)	0.20	0.99 (0.52, 1.87)	0.98

OR, odds ratio; CI, confidence interval.

be modified by public health intervention. It also indicates that the effect of high versus low parental restriction is not simply an artifact of demographic differences across groups. Moreover, this result suggests that recommendations to restrict child screen time should be broadly disseminated, rather than targeted toward a specific subgroup of families.

Neighborhood play safety and social capital were not associated with parents' restriction of child screen time. Previous studies have found that low parent-perceived neighborhood safety is associated with greater child screen time.^{21–24} Although parent concern about children's safety in low-income neighborhoods is commonly assumed to be a driving factor behind children's largely unrestricted access to screens, this is the first study, to our knowledge, to directly test links between community factors, such as perceived safety, and parenting specific to child screen time. Contrary to common assumptions, results from this study suggest that intrafamilial factors may be more important in predicting screen-related parenting behavior than the community factors examined in this study. Nevertheless, because this study sampled from a low-income population, the relationship between community factors and parenting related to child screen time may differ in more diverse samples.

The AAP recommends that practitioners counsel parents to restrict child screen time.⁴ Practitioner counseling is a promising format for the delivery of this screen-time message; a previous analysis in a subset ($N=87$) of the current sample found that the majority of parents (80%) relied on their doctor for health information.¹³ The current study highlights family contextual factors that practitioners need to consider when counseling low-income parents about child screen time. Results suggest that low-income parents who do not restrict child screen time experience greater stress, are more likely to rate the restriction of child screen time as a relatively low priority, compared to other life pressures, and report lower social support. Such factors will likely override any initiative to limit children's screen time. Stated otherwise, it is unlikely that a provider recommendation to reduce child screen time will motivate parents to restrict screen time unless there is effort made to ameliorate or address family circumstances.

Limitations of this study should be considered when interpreting results. First, because parents reported both the restriction of screen time and child screen time, the association between these variables may have been inflated. However, common method bias would apply equally to the measurement of community and family factors and

therefore does not account for the differential pattern of associations observed between restriction of screen time and community and family factors. Second, this study was underpowered to detect associations of small effect size. The proportion of children of high and low restricting parents with a TV in their bedroom differed with small effect size, and this small effect may have been statistically significant with a larger sample size. Third, conclusions are limited by the cross-sectional design. It is unclear whether changes in the family and community environment would be associated with changes in parent restriction of screen time. However, independent of temporal relations, results usefully inform practitioner counseling for parent restriction of child screen time. Fourth, there is the possibility of selection bias, and it is unclear whether this would influence the estimated associations between parent restriction of screen time, AAP screen-related recommendations, and family and community contextual factors. Fifth, some variables in this study were measured using investigator-developed items, including play safety and parent life pressures; validity information was therefore not available for these measures. Sixth, whereas this study was designed to sample a low-income population and racial/ethnic characteristics are reflective of the geographical location in upstate New York, racial/ethnic minorities are not well represented in this sample. Further research is needed to study family and community factors associated with screen-time parenting in diverse racial/ethnic groups. Finally, this study examined a subset of contextual factors that may influence parents' restriction of child screen time; organizational characteristics, social norms, and broader media influences may also be important in influencing parents' restriction.¹³

Despite these limitations, results from this study make an important contribution. This study sampled from a low-income population, thereby identifying the factors associated with parents' restriction of screen time in families at greater risk for increased child screen time.^{5,6} Results highlight the necessity for a family-centered approach in addressing child screen use with low-income parents. Recommendations for parents to restrict child screen time need to be positioned in a manner that is respectful of the difficulties and pressures experienced by families.

Conclusion

The present study fills an important research gap regarding family and community predictors of parents' restriction of child screen time. Attempting to restrict child screen time can be a challenge for parents,⁴⁰ and the results of this study suggest that the intrafamilial environment, including parent time pressures, competing priorities, and lower social support, may limit available parenting resources and make this parenting behavior harder to implement. When counseling parents to restrict child screen time, practitioners need to remain mindful of the family

factors that may limit parents' capacity for effective screen-related parenting.

Acknowledgments

This research was funded by the National Institute on Minority Health and Health Disparities (R24MD004865).

Author Disclosure Statement

No competing financial interests exist.

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Address correspondence to:

Amy M. Lampard, PhD, MPsych
Postdoctoral Research Fellow
Department of Nutrition
Harvard School of Public Health
665 Huntington Avenue
Boston, MA 02115

E-mail: alampard@hsph.harvard.edu