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# Identifying Family Television Practices to Reduce Children's Television Time

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The family system plays an important role in shaping children's television use. The American Academy of Pediatrics has recommended that parents limit screen time, given the risks associated with children's heavy television viewing. Researchers have highlighted family television practices that may be effective for reducing children's viewing, but more work is needed to identify which are most appropriate to communicate to families. Using cross-sectional data from parents of children aged 3–12 ($n = 360$), we confirmed a positive association between four television practices (background television, television during meals, bedroom television access, nighttime television viewing) and children's time spent viewing. Findings for the moderating roles of race, parent education, and income provide valuable information for the design of television-reduction interventions. Most notably, results indicate that encouraging families to reduce their children's nighttime television viewing is a promising direction for achieving healthier viewing amounts for children across developmental ages and demographic contexts.

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The average American child lives in a home with four televisions, three DVD players, one digital video recorder, two CD players, two radios, two computers, and two video game players (Rideout, Foehr, & Roberts, 2010). Despite these options, television viewing still accounts for the majority of children's media use (Common Sense Media, 2013; Rideout et al., 2010). Thus, it is unsurprising that a large body of research has focused upon how television affects children. The findings from this research indicate that the effects of television are largely content-dependent (e.g., Bleakley, Hennessy, Fishbein, & Jordan, 2008; Fisch, 2004; Huesmann, Moise-Titus, Podolski, & Eron, 2003). However, although television quality plays an important role in determining its effects, its quantity should not be overlooked. Heavy viewing has been linked with childhood obesity (Jordan & Robinson, 2008), attention problems (Landhuis, Poulton, Welch, & Hancox, 2007), behavioral problems (Mistry, Minkovitz, Strobino, & Borzekowski, 2007), reading deficits (Ennemoser & Schneider, 2007), and poor educational achievement (Hancox, Milne, & Poulton, 2005).

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Likewise, experimental investigations have demonstrated that reducing heavy television viewing leads to increases in healthy food consumption and physical activity as well as decreases in sedentary behavior, caloric intake, and aggression (Epstein et al., 2008; Gortmaker et al., 1999; Robinson, Wilde, Navracruz, Haydel, & Varady, 2001). As a result of these and other similar findings, the American Academy of Pediatrics (AAP) currently recommends that parents limit children's total media time (with entertainment media) to no more than 1 to 2 hours of quality programming per day as well as remove television sets from children's bedrooms and limit children's nighttime screen media use (Council On Communications and Media, 2011, 2013).

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## Television and the Family System

Television is an integral part of the daily life of American families, thus the family is an important context to consider when evaluating children's television viewing and the feasibility of the AAP recommendations discussed above (Jordan, 2004). Family systems theory conceptualizes the family as a system in which family members work together to keep the system operating with consistent rules, norms, and goals. The family is a complex integrated whole in which family members are necessarily interdependent, exerting a continuous influence on one another (Cox & Paley, 1997). Accordingly, how one person in the family behaves will ultimately affect the entire system (Arroyo, Nevárez, Segrin, & Harwood, 2012).

Jordan's (1992) research suggests that home media use is an important component of family life that reflects and contributes to the overall values of the larger family system. The family system determines both home media access and use, and through this access and use, children are socialized to think about and use media in ways that are congruent with the family system in which they are embedded (Jordan, 2004; Scantlin & Jordan, 2006). In addition to its use as a leisure time activity, Lull (1990) and Jordan (1992) explain that television can play a functional role in the family by regulating household routines, facilitating family members' communication, physically organizing family members within the house, and providing an expression of parental authority. As a result of these multiple functions, changing viewing patterns likely requires a renegotiation of roles, rules, and general patterns of functioning within the family system (Evans, Jordan, & Horner, 2011). As such, from a family systems perspective, targeting the family television environment provides a promising strategy for limiting children's television exposure.

## Limiting Children's Television Viewing at Home

Over the past two decades, there has been an increase in the development and testing of television reduction interventions for children. Meta-analytic work indicates that these efforts are linked with small but statistically significant reductions in children's screen time exposure (Maniccia, Davison, Marshall, Manganello, & Dennison, 2011). Citing this success, the AAP called for a continuation of interventions designed to educate families about ways to limit media use (Council On Communications and Media, 2011). Despite this recommendation, little attention has been paid to identifying *how* families can successfully limit television viewing.

This lack of attention to the role of family, particularly parents, in limiting children's television use is surprising given that research has shown that how parents approach and mediate television content in their home impacts children's television experiences (Jennings & Walker, 2009; Scantlin & Jordan, 2006; Vandewater, Park, Huang, & Wartella, 2005; see also Warren, 2001).

To help address this gap, Jordan, Hersey, McDivitt, & Heitzler (2006) conducted an exploratory study to evaluate how parents responded to the AAP's recommendation to limit children's viewing as well as to identify behaviors that families could incorporate in their homes to reduce exposure. Results suggested that although many parents agreed with the limit in principle, they felt that the recommendation did not necessarily "apply to them" and also felt that there were many barriers to overcome before they could incorporate this recommendation into their own lives. The researchers suggested that, when communicating with families about adherence to the AAP recommendation, messages should acknowledge these barriers by highlighting small feasible changes that parents can make at home. These changes include (1) eliminating background television, (2) not connecting television viewing with eating, (3) keeping television out of the child's bedroom, and (4) limiting nighttime television use (Jordan, 2010). Considering the important role that parents play in shaping viewing practices of the family system (Vandewater et al., 2005; Warren, 2001), these parental behaviors represent feasible, concrete strategies that parents can incorporate into their existing mediation practices to reduce their children's TV time.

## The Current Study

Jordan et al.'s (2006) research indicates the need to communicate practical changes that families can make at home. However, although researchers have suggested several practices to encourage children's television reduction at home (Council On Communications and Media, 2011; Jordan, 2010; Jordan et al., 2006), there is no evidence to support which of these practices is most appropriate to communicate to families in a television-reduction intervention. The current study is designed to address this gap. Specifically, four television practices previously associated with decreased television viewing were evaluated: (1) reduced background television exposure, (2) reduced television use during meals, (3) no bedroom television, and (4) reduced television use before bed. Using cross-sectional data from a random sample of parents of children aged 3–12 living in an urban city, we first confirm that each is associated with reduced television viewing.

H1: There is a positive association between the amount of background television exposure and children's average daily television viewing.
H2: There is a positive association between the amount of television exposure during meals and children's average daily television viewing.
H3: There is a positive association between the presence of television in a child's bedroom and children's average daily television viewing.
H4: There is a positive association between the amount of television exposure before bed and children's average daily television viewing.

Finding evidence for these empirical associations is a minimum criterion, however, when it comes to identifying what is most appropriate to communicate to families in a

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television-reduction intervention. It is arguably more important to identify potential opportunities for audience segmentation. By identifying appropriate population segments in systematic and meaningful ways, intervention resources are used most economically (Schmid, Rivers, Latimer, & Salovey, 2008) and have a greater chance of success (Slater, 1995). Family systems theory predicts that different types of families may respond to different household (television) practices in different ways. Although families can be grouped into a range of different typologies (e.g., Olson, 2000), in intervention research, the most common segmentation approach is demographic (e.g., by race, gender, ethnicity, or income; Slater, 1995). The popularity of this approach is likely driven, in part, by the fact that intervention designers are likely to have some knowledge about the population's demographic background, and they are less likely to have more detailed behavioral information. Understanding family systems through the contours of their demographics affords us the opportunity to investigate how different household television practices may be distinct in different types of families.

Demographic segmentation is only valid, however, if the demographic variables selected for segmentation are in fact expected to influence the target behavior (Slater, 1995). This is logical given that the assumption of demographic targeting is that demographic factors reflect common life experiences that influence a particular behavior (Slater, 1995). Many studies have shown that the demographic contours of the family shape a range of household practices, including media use. In terms of the family system, these demographic factors include age of the child, race of the child, parent education, and family income. We know, for example, that older children (Common Sense Media, 2013; Lee, Bartolic, & Vandewater, 2009), African American children (Common Sense Media, 2013; Rideout, Lauricella, & Wartella, 2011), children from homes with lower parental education (Common Sense Media, 2013; Rideout et al., 2010), and children from lower income homes are among the heaviest viewers of television (Common Sense Media, 2013; Rideout & Hamel, 2006). Considering that the risks associated with television viewing emerge most often for the heaviest users, these family system demographics represent important subgroup populations for targeted television-reduction initiatives. To that end, we ask whether the association between each television practice and television viewing is moderated by child age, child race, parent education, and family income.

RQ1. Does child age moderate the relationship between each television practice and children's average daily television viewing?
RQ2. Does child race moderate the relationship between each television practice and children's average daily television viewing?
RQ3. Does parent education moderate the relationship between each television practice and children's average daily television viewing?
RQ4. Does family income moderate the relationship between each television practice and children's average daily television viewing?

By investigating whether and how the association between the practices and television viewing differs across these demographic characteristics, we can identify which practices are best communicated to a broad target audience of families, as well as which are better suited for specific subgroups. Results from these analyses provide practical implications for interventions designed to reduce children's television viewing.

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## METHOD

### Research Design

A cross-sectional survey was used to collect a representative sample of households with children aged 3–16 in a large northeastern city in the United States. The sample consisted of a dual-frame landline and cell phone design. Respondents were selected using random digit dialing and random selection from a publicly available list of households with a greater likelihood of containing a child within the targeted age. Administration occurred between June 8 and July 3, 2010 by trained interviewers. In households where the respondent was the primary caregiver for two children between 3 and 16 years of age, the target child was selected by randomly asking the respondent to answer the interview questions about either the youngest or oldest child. When the adult was the primary caregiver for more than two children, the "target child" was selected by randomly asking the respondent to answer interview questions about the child with the most recent birthday. The response rate for eligible respondents was 30.7%.

### Survey Procedures

After receiving approval from the sponsoring university's Institutional Review Board, a private research firm specializing in telephone surveys administered the survey using a computer-assisted interviewing system. Respondents were screened for eligibility and provided informed consent. The survey included an assessment of the home media environment, the amount of television the target child typically viewed, and family television-related practices. On average, participants required 36 minutes to complete the survey. Participants who completed the survey using a cell phone were compensated $10.00 to offset costs. All were provided with contact information for the study coordinator as well as for the Institutional Review Board. Interviews were conducted in English and Spanish.

### Participants

A total of 516 parents (aged 18 or older) completed the survey. Each respondent was the primary caregiver for a child between the ages of 3 and 16 years. Twenty-three percent of the sample was reached by cell phone. Because the majority of existing screen-reduction initiatives do not target the viewing behaviors of teenagers (Maniccia et al., 2011), and because studies have shown that parents typically exert less influence over their adolescent child's viewing when compared to younger children (Warren, 2001), we only include cases where the target child was between 3 and 12 years of age ($n = 360$) in these analyses.

### Measures

#### *Child Age*

Respondents reported the child's age in years ($M = 7.71$ years, $SD = 2.86$).

### Child Race

Respondents reported the race of the child. The majority of children were White ($n = 156$) and African American ($n = 150$). Twelve children were Asian, two were Native American, one was Pacific Islander, and thirty children were identified as another race. Racial information was not available for 10 cases. Given the race distribution, this variable was dichotomized to represent White children (coded as 0) and African American children (coded as 1). As a result, for analyses involving race, the adjusted sample size is 306.

### Parent Education

Respondents reported their highest educational level. To aid in interpretation, responses were collapsed to represent parents with a high school degree or less (36.03%, coded as 1), parents who attended some college (29.33%, coded as 2), and parents with a bachelor's degree or higher (34.64%, coded as 3). Two respondents did not provide their education level. These two cases were omitted from analyses that involved parent education.

### Household Income

Respondents were asked to identify which category best described their gross family income for the 2009 year. They were provided with nine response categories ranging from less than $5,000 per year to $200,000 or more per year. To address skewness and to aid in interpretation, responses were collapsed to represent households reporting less than $30,000 (27.43%, coded as 1), households reporting $30,000 to $75,000 (42.77%, coded as 2), and households reporting greater than $75,000 (29.79%, coded as 3). Three respondents did not know their gross family income, and another 18 respondents refused to provide this information. For analyses involving household income, the adjusted sample size is 339.

### Background Television

Similar to Rideout et al. (2010), parents were asked "how often is the TV on in your home when no one is watching?" Response options were never (17.50%, coded as 0), a little of the time (21.39%, coded as 1), some of the time (28.33%, coded as 2), and most of the time (32.78%, coded as 3).

### Television with Meals

Parents were asked "how often is the TV on in your home during meals?"(Rideout et al., 2010). Response options were never (34.44%, coded as 0), a little of the time (15.56%, coded as 1), some of the time (16.39%, coded as 2), and most of the time (33.61%, coded as 3).

### Bedroom Television

Parents were asked whether the child has a television in his/her bedroom. Response options were dichotomous (yes = 56.67%, coded as 1).

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### *Nighttime Television Viewing*

Parents were asked "how often does [target child] watch television the hour before he/she goes to sleep?"(Rideout et al., 2010). Responses options were never (16.11%, coded as 0), a little of the time (22.50%, coded as 1), some of the time (20.83%, coded as 2), and most of the time (40.56%, coded as 3).

### *Average Daily Television Viewing*

Adapted from Rideout et al. (2010), parents were asked to report the amount of time their child spends watching television on a typical weekday between (1) the time the child wakes up and noon, (2) between noon and 6 PM, and (3) between 6 PM and the time the child falls asleep. These questions were repeated for a typical weekend day. Watching television was defined as watching TV shows, DVDs, or movies on a television set or a computer. To calculate an average daily estimate of time spent viewing television, the duration that the parent reported their child viewed television on both a typical weekday and typical weekend day was summed. These estimates were used to calculate an average daily estimate ((weekday *5 + weekend *2)/7) in minutes. Children in our sample were relatively heavy television viewers, watching nearly 4 hours of television per day ($M = 213.96$ minutes, $SD = 136.82$; 73% of cases ($n = 257$) reported more than 2 hours of television daily).

## Analytic Approach

Hypotheses 1 through 4 were examined using polychoric correlations (ρ). Cohen (1988) suggests that correlations of .10 be interpreted as small, .30 as medium, and .50 as large. If a positive association between the television practice and children's average viewing time was confirmed, regression analyses were used to evaluate whether child age, child race, parent education, or household income moderated the relationship (RQ1–RQ4). The distributions of the average daily television viewing variable deviated from normality. A square root transformation was used to correct the positive skew of this variable.

For each regression model, three predictors were used: (1) the television practice, (2) the demographic variable, and (3) and a product term representing an interaction between the practice and the demographic variable. As the research questions focus on moderation, the interaction terms are the focal point in the text. For the interaction coefficients associated with child age and child race, the standardized coefficient (β) and corresponding significance level are presented. For the interactions associated with parent education and household income (categorical variables with more than two categories), an $F$-test associated with the omnibus interaction term as well as the corresponding significance level are presented. To aid interpretation of significant interaction terms, regressions models predicting television viewing from the specific television practice—stratified by the demographic variables—are presented. The effect size eta-squared ($\eta^2$) is also presented, where appropriate. Eta-squared represents the percent of variance in the dependent variable explained by the variance in the independent variable (analogous to $r^2$). Cohen (1988) offers guidelines for interpretation: $\eta^2$ of .02 is considered a small effect, .13 a medium effect, and .26 a large effect.

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## RESULTS

### Television Practices and Time Spent Watching Television

To test hypotheses 1–4, a polychoric correlation was calculated between each of the four practices and children's time spent watching television on an average day. Each hypothesis is supported. Background television exposure (H1, $\rho = .28$, $p < .05$), television exposure during meals (H2; $\rho = .37$, $p < .05$), the presence of a television in the child's bedroom (H3; $\rho = .33$, $p < .05$), and television exposure before bed (H4; $\rho = .35$, $p < .05$) are all moderately and positively correlated with children's television viewing. All practices are positively correlated with one another (see Table 1 for the polychoric correlation matrix).

### Moderator: Child Age

Research question 1 asks whether child age moderates the association between each of the four measured television practices and children's average daily television viewing. Regression analyses showed that age is not a significant moderator of any of these relationships (background television x age: $\beta = -.15$, $p = .388$, $\eta^2 = .002$; television with meals x age: $\beta = .14$, $p = .372$, $\eta^2 = .002$; bedroom television x age: $\beta = .17$, $p = .311$, $\eta^2 = .003$; and nighttime television x age: $\beta = .04$, $p = .807$, $\eta^2 = .0001$).

### Moderator: Child Race

Research question 2 asks whether race moderates the association between each of the four measured television practices and children's average daily television viewing. Race is a significant moderator of three of the four relationships. Specifically, race moderates the association between (1) background TV exposure and average viewing ($\beta = -.26$, $p = .026$, $\eta^2 = .02$), (2) television exposure during meals and average viewing ($\beta = -.21$, $p = .046$, $\eta^2 = .01$), and (3) the presence of a bedroom television and average viewing ($\beta = -.37$, $p < .001$, $\eta^2 = .04$, $\eta^2 = .04$). Race did not moderate the relationship between nighttime television viewing and average daily viewing ($\beta = -.15$, $p = .188$, $\eta^2 = .005$).

TABLE 1
Polychoric Correlation Matrix

| *Variable* | *1* | *2* | *3* | *4* |
|---|---|---|---|---|
| 1. Average daily television viewing | — | | | |
| 2. Background television exposure | .28 | — | | |
| 3. Television exposure during meals | .37 | .43 | — | |
| 4. Bedroom television | .33 | .15 | .39 | — |
| 5. Nighttime television exposure | .35 | .34 | .33 | .32 |

*Note.* All coefficients are significant at $p < .05$. Average television viewing represents square root transformation. Bedroom television is a dichotomous variable.

To better understand the significant moderation, regression models predicting average viewing from each of the three practices were run separately by race. In all three cases of moderation, the association between each practice and average daily television viewing is present only for White children (background: $\beta = .38$, $p < .0001$, $\eta^2 = .14$; meals: $\beta = .39$, $p < .0001$, $\eta^2 = .15$; bedroom: $\beta = .36$, $p < .0001$, $\eta^2 = .13$). For African American children, these three practices are not associated with increased television viewing (background: $\beta = .09$, $\eta^2 = .007$, $p = .296$; meals: $\beta = .13$, $p = .112$, $\eta^2 = .017$; bedroom: $\beta = -.05$, $p = .548$, $\eta^2 = .002$). Effect sizes indicate that, for White children, the strength of the relationships between these three practices (i.e., background television, TV during meals, and bedroom television) and overall viewing are all equally moderate in strength.

### Moderator: Parent Education

Research question 3 asks whether parent education moderates the association between each of the four measured television practices and children's average daily television viewing.

Parent education was not a significant moderator of television during meals ($F$ (2,349) = 1.05, $p = .35$, $\eta^2 = .004$) or nighttime television viewing ($F$ (2,349) = .61, $p = .546$, $\eta^2 = .003$). Parent education was a moderator of background television exposure ($F$ (2,349) = 3.70, $p = .026$, $\eta^2 = .017$) and the presence of a bedroom television ($F$ (2,349) = 3.30, $p = .038$, $\eta^2 = .015$).

To evaluate the significant moderation for background television and bedroom television, regression models predicting average daily television viewing were conducted separately by parent education. In the case of background television exposure, analyses reveal that the positive association between background television exposure and average daily viewing is only present for children whose parents report holding a bachelor's degree or higher ($\beta = .45$, $p < .001$, $\eta^2 = .20$). For bedroom television, analyses reveal that a bedroom television is positively associated with average daily viewing for children whose parents have a high school degree or less ($\beta = .21$, $p = .018$, $\eta^2 = .04$) as well as for children whose parents have a bachelor's degree or higher ($\beta = .29$, $p = .002$, $\eta^2 = .08$). Effect sizes indicate that the moderation of bedroom television by parent education is relatively small, whereas the effect size for moderation with background television is more pronounced.

### Moderator: Household Income

Research question 4 asks whether household income moderates the association between each of the four measured television practices and children's average daily television viewing. Household income is not a significant moderator for television exposure during meals ($F$ (2,330) = .58, $p = .558$, $\eta^2 = .003$), the presence of a bedroom television ($F$ (2,330) = 2.06, $p = .128$, $\eta^2 = .01$), or nighttime television viewing ($F$ (2,330) = .30, $p = .738$, $\eta^2 = .002$). Household income does moderate the relationship between background television exposure and average daily viewing ($F$ (2,330) = 5.11, $p = .006$, $\eta^2 = .03$). Regression models separated by income level reveal that background television exposure is positively associated with average television viewing for the two higher income groups ($30,000 to $75,000: $\beta = .35$, $p < .001$, $\eta^2 = .12$; more than $75,000: $\beta = .30$, $p = .002$, $\eta^2 = .09$), yet no association is present for the lowest income group ($\beta = -.06$, $p = .562$, $\eta^2 = .004$). Effect sizes indicate that this moderation is moderate in strength for children

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from the highest income households, whereas it is slightly weaker for children from the middle income category.

## DISCUSSION

The empirical evidence associated with children's heavy television viewing justifies the need for efforts that target children's television reduction (e.g., Ennemoser & Schneider, 2007; Hancox et al., 2005; Jordan & Robinson, 2008; Landhuis et al., 2007; Mistry et al., 2007). The critical role of the family system as a communicator of acceptable television behavior for all family members (Jordan, 2004) makes the family television environment a relevant context for change. Existing research (Council On Communications and Media, 2011; Jordan, 2010; Jordan et al., 2006) highlights family television practices that should be associated with reduced television viewing, but provides no evidence as to whether or not these practices are expected to work similarly across different family systems. This present study addresses this gap.

As has been found in other studies, background television viewing, television viewing during meals, presence of television in children's bedrooms, and children's nighttime television viewing are all positively associated with children's average television viewing. These relationships represent practices that television reduction messages can highlight and potentially modify. The research also asked whether the observed relationships are moderated by child age, child race, parental education, or household income. Moderation tests reveal that the relationships between each of the television practices and children's average television viewing were uniformly present across children's age. All four of these practices are suitable ways to encourage television reduction for children between the ages of 3 and 12. On the other hand, the moderation tests also indicate that the associations between each television practice and average viewing are not consistent across child race, parent education, and income. These results provide directions for future messages aimed at reducing children's television time.

### Targeted Messages

Previous research on the home television environment has found differential patterns by race, suggesting that television may have a different meaning for different types of family systems (Jordan et al., 2010). Existing research has consistently shown that African American children consume greater amounts of television when compared to peers of other races (Common Sense Media, 2013; Rideout et al., 2011). This pattern is also demonstrated in our sample, with African American children viewing about an hour more television per day than their White counterparts. The higher viewing rates of African American children make them an important target for television reduction initiatives. Our analyses suggest that encouraging parents of African American children to reduce background television, television during meals, or to remove television from the child's bedroom is likely to be ineffective at reducing overall viewing within this population.

Although these strategies are moderately associated with White children's television viewing, we find no association with African American children's viewing amounts. On the other hand, the evidence suggests that focusing upon reducing nighttime television viewing for African American children is reasonable. In fact, in our sample, African American children who reportedly viewed

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no nighttime television viewed nearly 1½ hours less of television than their peers who always view nighttime TV.

Similar to African American children, children from lower education households are also an important target for television-reduction interventions. Parental education is a marker for values and lifestyles that affect the ways in which parents encourage or regulate their family television environment (Bickham et al., 2003). Research on parental education and children's media use has repeatedly shown that children living in households with parents who have relatively low education watch more television than children whose parents have higher levels of education (Common Sense Media, 2013; Rideout et al., 2010). Consistent with this literature, in our sample, children from lower education households view nearly two hours more television per day than children from higher education households.

Moderator analyses indicated that parental education did influence the relationship between household television practices and overall viewing. Increased background television was only associated with increased television viewing for children whose parents hold a bachelor's degree or higher. Bedroom television was associated with increased viewing for the highest and lowest education groups, but not for children whose parents had attended some college. Television viewing during meals and nighttime television viewing, on the other hand, maintained consistent associations with television viewing regardless of parent education. From an intervention perspective, these findings suggest that reduced television during meals and reduced nighttime television may be the best messages when targeting children whose parents hold less than a bachelor's degree.

Household income, like parental education, is also thought to affect the ways in which parents encourage or regulate their family television environment. Although correlated with parental education ($r_s = .41$ in our sample), previous research has shown that parental education and household income do exert individual influence on television viewing (Rideout & Hamel, 2006). In fact, when controlling for parent education, research demonstrates that children living in low income households view significantly more television than their higher income peers (Rideout & Hamel, 2006), making children from low income household an important target for television-reduction efforts. In our sample, children in the lowest income group (less than $30,000 per year) viewed nearly two hours more television per day than children in our highest income group (more than $75,000 per year). Results from our moderator analyses indicate that, when targeting low income families, messages that focus upon reduced nighttime television viewing, reduced television viewing during meals, and no bedroom television are reasonable. Conversely, targeting background television exposure will likely be ineffective at reducing the viewing amounts of children living in low income families.

Demographic targeting is one of the most commonly used audience segmentation strategies in communication interventions. The use of segmentation has been shown to support intervention effectiveness as well as the efficient use of often-limited intervention resources. Family-based research also indicates that the demographic contours of the family shape a range of household practices, including media use (e.g., Jordan, 1992). By investigating demographic moderators, this research acknowledges and accommodates the fact that demographic variables represent certain commonalities across certain kinds of families and are factors than can be used to successfully develop and execute communication interventions. That said, these demographic factors are not, in and of themselves, necessarily responsible for the relationships uncovered in this study. Instead, they likely reflect systems of norms, expectations, habits, and beliefs that are a part of the

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family culture (which is shaped by numerous forces, including race/ethnicity, household income, and parent education).

An important next step in this line of research will be to more deeply understand why these variables are meaningfully associated with children's television viewing and their role in the family system. The findings from this investigation make the point that not all television practices work the same way for all family systems. The findings do not, however, explain *why* these differences are present. Why, for example, is mealtime television associated with White children's overall television viewing but not African American children's viewing? Similarly, what might explain why background television is not associated with viewing amounts for children from lower income families? The mechanisms to explain the relationships presented in this article remain largely unexplored, and will be important to our understanding of how family systems differ as well as to help determine whether there are more suitable practices for inclusion in television-reduction messages.

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## Broad-Reach Messages

Perhaps the most interesting finding from the present study is not how demographic variables moderate the associations between the television practices and child viewing, but rather when they do not moderate these relationships. On the one hand, the lack of consistent moderation found in this study illustrates the fact that there is no simple recipe for segmentation. Researchers and practitioners interested in relying on segmentation to help guide the efficient dissemination of their messages should conduct pilot investigations to evaluate whether their planned segmentation is reasonable. On the other hand, the lack of moderation identified in this study may highlight an opportunity for intervention.

Of the four practices studied, only one was consistently associated with children's television time: nighttime television viewing. Decreased nighttime television viewing was associated with decreased overall viewing for all children in our sample, regardless of age, race, parental education, or household income. Children who reportedly "never" view or only view television "a little of the time" before bed viewed nearly an hour less per day than children who viewed television "some" or "most" of the time before bed. The consistency of the relationship between nighttime television and overall viewing is notable.

The findings from this study indicate that encouraging families to reduce nighttime television viewing may be a promising way to reduce overall television viewing amongst children aged 3–12. Whether an intervention opts to target families with older children, African American children, children living in lower education households, children living in lower income households, or some combination of factors, this analysis provides evidence for emphasizing nighttime television reduction. This is valuable information for individuals designing and implementing family-focused television-reduction interventions.

The next step, beyond crafting messages about nighttime television viewing reduction, is to track how different family systems accommodate (or, perhaps, do not accommodate) shifts in television use within their home. In many family systems, television forms such a backdrop to family life that it provides structure to daily family routines (Lull, 1990). For these families, reducing nighttime television will likely change their family routine. How might these families accommodate this change? Are there, as Warren's (2001) research would suggest, some families that are better able to accommodate this change than others as a result of their family

communication patterns? What behaviors might families employ instead? Studying both the behaviors that may replace nighttime television viewing as well as the communication amongst family members about this change will provide valuable insight to researchers interested in the ongoing relationship between media and the family system.

### Limitations

There are several limitations to these findings. Our reliance on cross-sectional data comes with the caveat that we cannot make claims about causality. Interventions confirming that that practices are both feasible for families and effective for decreasing children's television viewing is an important next step. Furthermore, longitudinal evidence regarding the relationships between demographic characteristics, household television practices, and overall television time would provide a more nuanced explanation on how these variables work together in the family system.

It is important to recognize that the operationalized television practices have a somewhat tautological relationship with the dependent variable as both can be seen as indicators of television viewing amounts. These practices were selected because they represent modifiable behaviors that families can implement to reduce television. Given the goals of the study, this tautology seems acceptable.

Although efforts were made to select television practices and moderators that have emerged as important in the literature, there are others that would be appropriate for inclusion in future studies. For example, limiting television on school days and identifying pleasurable non-screen home activities have been suggested as practices to reduce children's television viewing (Jordan et al., 2006) and Latino status (Rideout et al., 2011) and single-parent status (Lee et al., 2009) represent potential demographic segmentation. Although less common, it would be also be worthwhile to expand beyond demographic segmentation variables to more proximal variables that reflect motivations and constraints to reduce children's television viewing (e.g., parenting style, Stephenson, Quick, & Hirsch, 2010) since these proximal variables should introduce less error than distal demographic variables (Slater, 1995).

Generalizability of the findings for non-urban and non-U.S. families may be limited. Replicating this study with a nationally representative sample would be worthwhile. Finally, there are ongoing debates about best practices for measuring television viewing time. Although single item global time estimate measures are most frequently used to capture media use, researchers have voiced concerns about the accuracy of these measures given that estimating daily media use is complex and requires more time than what is likely allotted to one survey question (Vandewater & Lee, 2009). We attempted to alleviate this by asking parents to report on television use in smaller time blocks. This division of the day is thought to provide respondents with a heuristic template to improve the accuracy of reports (Vandewater & Lee, 2009) and has been used successfully in other research (Rideout et al., 2010). Replicating these findings, however, with alternative television exposure measurement (e.g. media diary; experience sampling) would be appropriate.

## CONCLUSION

Television viewing is an integral part of the daily life of American families and an important component of the family system. The family system determines both home media access and

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use. Parents, in particular, shape children's television viewing experiences through their own attitudes and behaviors towards television (Warren, 2001). This includes determining the structural aspects of the viewing experience (e.g., where the television is located in the family home; Tichi, 1991), the functional uses of television in the home (e.g., regulating household routines; Jordan, 1992), and the quality and quantity of children's television viewing (Jennings & Walker, 2009; Vandewater et al., 2005). As a result, targeting the family system—particularly parents—is a reasonable approach for mediating children's television viewing.

Children need a healthy media diet that balances quality *and* quantity as part of healthy lifestyle. Given the important role of the family system in determining children's television viewing experiences, researchers and public policy advocates must continue to help parents understand what a healthy media diet looks like by communicating practices that families can implement in their homes to achieve this balance. In this research, we were interested in identifying behaviors that parents could implement in their homes to reduce their children's television viewing time. Our investigation of four family television practices (i.e., bedroom television, television during meals, background television, and nighttime television) highlights the importance of considering the demographic context of the family system when identifying practices appropriate for communication with families. Findings for the moderating roles of race, parent education, and household income provide critical information for the design of future television-reduction interventions. Most notably, these findings indicate that encouraging families to reduce children's nighttime television viewing is a promising direction for achieving healthier viewing amounts for children across developmental ages and demographic contexts.

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