

Modifying Media Content for Preschool Children: A Randomized Controlled Study,

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BACKGROUND: Although previous studies have revealed that preschool-aged children imitate both aggression and prosocial behaviors on screen, there have been few population-based studies designed to reduce aggression in preschool-aged children by modifying what they watch.

Preschool-aged children in the United States spend an estimated 4.4 hours per day watching television at home and in day care settings. Although that amount alone might give one pause, equally, and perhaps more concerning, has been the amount of aggression that they watch. Decades of research rooted in observational theory have revealed that children emulate behaviors (good and bad) that they see on screen. Considerable research has established the adverse effects of violent television programming on children's level of aggression. Cross-sectional and quasi-experimental studies of television viewing among school-age children and adolescents have revealed television viewing to be associated with aggression. Experimental designs have confirmed that reducing the amount of television children watch can reduce aggression among 9-year-olds. Less attention has been given to the effects of television on preschool-aged children; however, longitudinal studies of television viewing before age 5 have revealed it to be a risk factor for the development of bullying and aggression in elementary school.

As aggressive behavior in the early childhood years has been repeatedly linked to violence in later youth and adolescence, interventions that might reduce early aggressive behavior could have significant societal implications. Research has also established that certain types of media programming can promote prosocial behavior. For example, high quality prosocial programs can improve racial attitudes, their social interactions, and their sharing propensities. This has led many researchers to emphasize that from a public health standpoint, content is as important as quantity in the ongoing debate about screen time. Unfortunately, the current viewing habits of most preschoolers, particularly those from disadvantaged families, lean heavily toward inappropriate programming (ie, noneducational or older child/adult focused) at the expense of higher quality shows. To date, no randomized controlled trial conducted in naturalistic environments with long-term follow-up has been conducted in preschool-aged children. We developed and tested an approach in which preschool-aged children's viewing habits were altered such that they substituted high quality educational programs for violence-laden ones.

METHODS: We devised a media diet intervention wherein parents were assisted in substituting high quality prosocial and educational programming for aggression-laden programming without trying to reduce total screen time. We conducted a randomized controlled trial of 565 parents of preschool-aged children ages 3 to 5 years. The treatment group received the media diet intervention and the control group received a nutritional intervention designed to promote healthier eating. Our outcomes were derived from the Social Competence and Behavior Evaluation (SCBE), parent version. The SCBE is a well-validated measure with an overall score and subscales for internalizing (anxious, depressive, and withdrawn) and externalizing (angry, aggressive, oppositional) behaviors, as well as social competence.

INTERVENTION: The intervention framework was based on social cognitive theory and sought to increase parental outcome expectations and self-efficacy around making healthy media choices for their

child, with a specific emphasis on replacing violent or age-inappropriate content with age-appropriate educational or prosocial content. The central premise was that children imitate what they see on screen. Although the intervention addressed all screen time (TV, videos, computers, video games, handheld devices, etc), the primary focus was TV and videos because this accounts for the vast majority of screen time in preschool children. No attempt was made to reduce total number of screen time hours; rather, the intervention focused on content and encouraging positive media behaviors such as covieing. Intervention sessions began with the initial home visit, in which the case managers discussed the child's current media use with the parent, shared intervention handouts specific to the family's needs and engaged the parent in goal setting. The home visit was followed by mailings and follow-up phone calls.

The importance of reducing exposure to violent television and replacing it as needed with educational/prosocial programming in the intervention group was emphasized at the initial visit, in the monthly newsletters, during the monthly telephone calls with the research assistant, by monthly program guides tailored to the participating families' television service, and by providing examples of the types of programs that we deemed age appropriate and worthwhile. In the primary category, prosocial behaviors were an explicit theme of the program and were consistently role modeled; examples include *Sesame Street*, *Dora the Explorer*, and *Super Why*.

RESULTS: At 6 months, the overall mean Social Competence and Behavior Evaluation score was 2.11 points better (95% confidence interval [CI] in the intervention group as compared with the controls, and similar effects were observed for the externalizing subscale (0.68 [95% CI) and the social competence subscale (1.04 [95% CI). The effect for the internalizing subscale was in a positive direction but was not statistically significant (0.42). Although the effect sizes did not noticeably decay at 12 months, the effect on the externalizing subscale was no longer statistically significant ($P = .05$). In a stratified analysis of the effect on the overall scores, low-income boys appeared to derive the greatest benefit (6.48 -95% CI).

CONCLUSIONS: An intervention to reduce exposure to screen violence and increase exposure to prosocial programming can positively impact child behavior.

DISCUSSION We demonstrated that an intervention to modify the viewing habits of preschool-aged children can significantly enhance their overall social and emotional competence and that low-income boys may derive the greatest benefit. By focusing on content rather than quantity, this study is the first to our knowledge to employ a harm reduction approach to mediating the untoward effects of television viewing on child behavior. Importantly, we did not see an increase in total viewing time in the intervention group compared with the control group. Furthermore, the effects in the particularly high-risk subgroup of low income boys are substantial. Future studies may identify and apply this approach to particularly vulnerable populations. Although we know that the roots of aggression in later years begin in early childhood, few studies to date have focused on preschool aggression prevention. Most prevention programs begin at school entry and preschool programs to date have largely focused on secondary prevention and treatment.

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