

Effects of mobile technology use on preschoolers' self-regulation

JAN ESTERAICH, LIXIN REN, SUKRAN UCUS, IBRAHIM ACAR,
HELEN RAIKES



DESCRIPTION OF STUDY

- Survey – Child and parent screen media use (TV, Computer, Smartphone, Tablet, Game devices)
- N = 200; Parents of preschoolers in Omaha and Lincoln Educare
- Questions - Amount of daily time children spend using various types of screen media, where they use screen media, and parents' co-use of screen media with their child.
- Associations with children's self-regulation skills as measured by the DECA
Subscales included: self-control, initiative, attachment and behavioral concerns



RESEARCH QUESTIONS

- 1) How does the use of digital media by preschool children in Head Start associate with their development of self-regulation, including self-control and social-emotional outcomes?
- 3) What factors, if any, moderate or mediate the children's use of digital media and their development of self-regulation, including self-control and social-emotional outcomes?



METHODS / MEASURES

- **11-item survey**

Ex: “During a typical day, how much time does your child spend using a Smartphone, Tablet, Computer, or Game Device?

_____Hours _____Minutes

- **IV:** Total Time using Digital Media
 - **Moderator:** Parent-child Co-use of Screen Media
 - **DV:** DECA Subscales – Self-control, Initiative, Attachment, Behavioral Concerns
-
- Multiple regression
 - Moderation analysis



Media device ownership & TV in child's bedroom

| | US |
|-----------------------|-------|
| Television | 85% |
| Smart phone | 79% |
| Tablet | 51.5% |
| Game device | 33% |
| Laptop | 44% |
| Desktop | 22% |
| TV in Child's Bedroom | 44% |

Screen media = television, computers, game devices and mobile digital devices



Preschoolers' use of screen media, per day

| | US |
|-------------------|-----------------|
| Television | 2 hrs. 49 mins. |
| Digital Devices | 1 hr. 17 mins. |
| Total Screen Time | 4 hrs. 6 mins. |

Digital devices include: Computers, smartphones, tablets, game devices



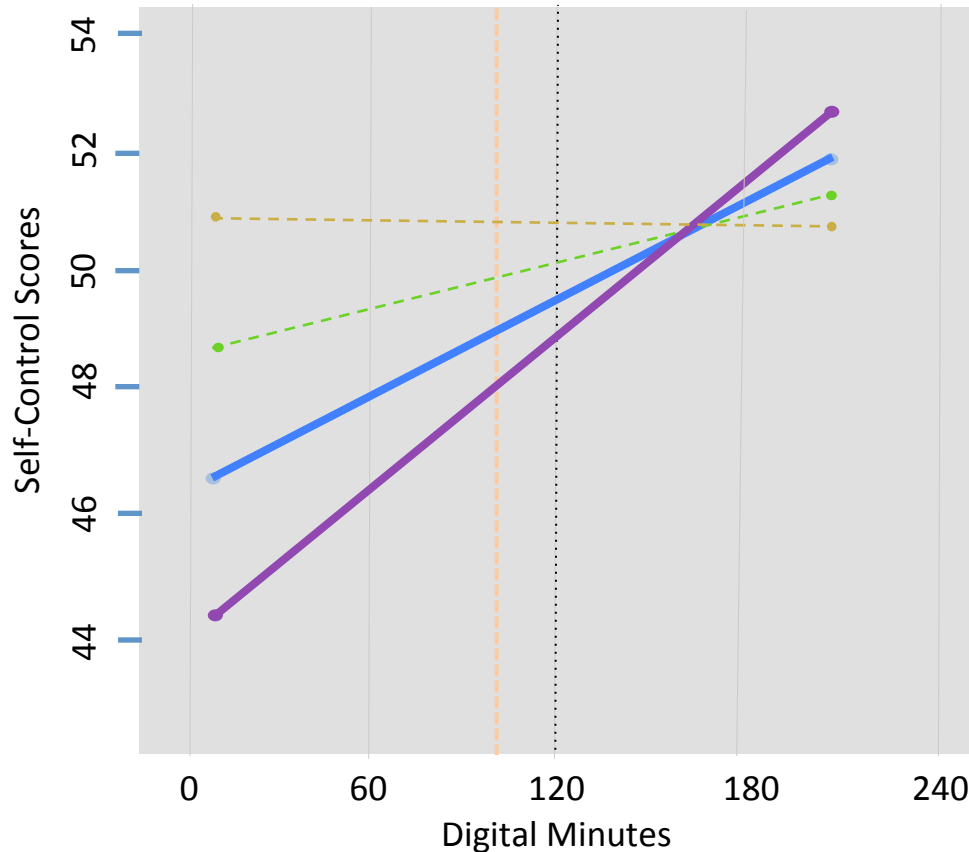
Parent co-use of screen media with child

| | US |
|------------------|------|
| Always | 3.5% |
| Often | 16% |
| About ½ the Time | 9% |
| Sometimes | 44% |
| Rarely | 19% |
| Never | 8.5% |

Screen media = television, computers, game devices and mobile digital devices



SELF-CONTROL



- Low Co-Use
- Low-Medium Co-Use
- Medium Co-Use **(significant)**
- High Co-Use **(significant)**

--- Mean = 96 minutes/day

... AAP recommendation of maximum screen time/day

Main Effect: Total Digital

Coeff. = +1.26 on Self-Control (for every hour used)

Interaction: Total Digital x Co-Use

At Mean of Co-Use, +1.14 (per hour of Digital Use)

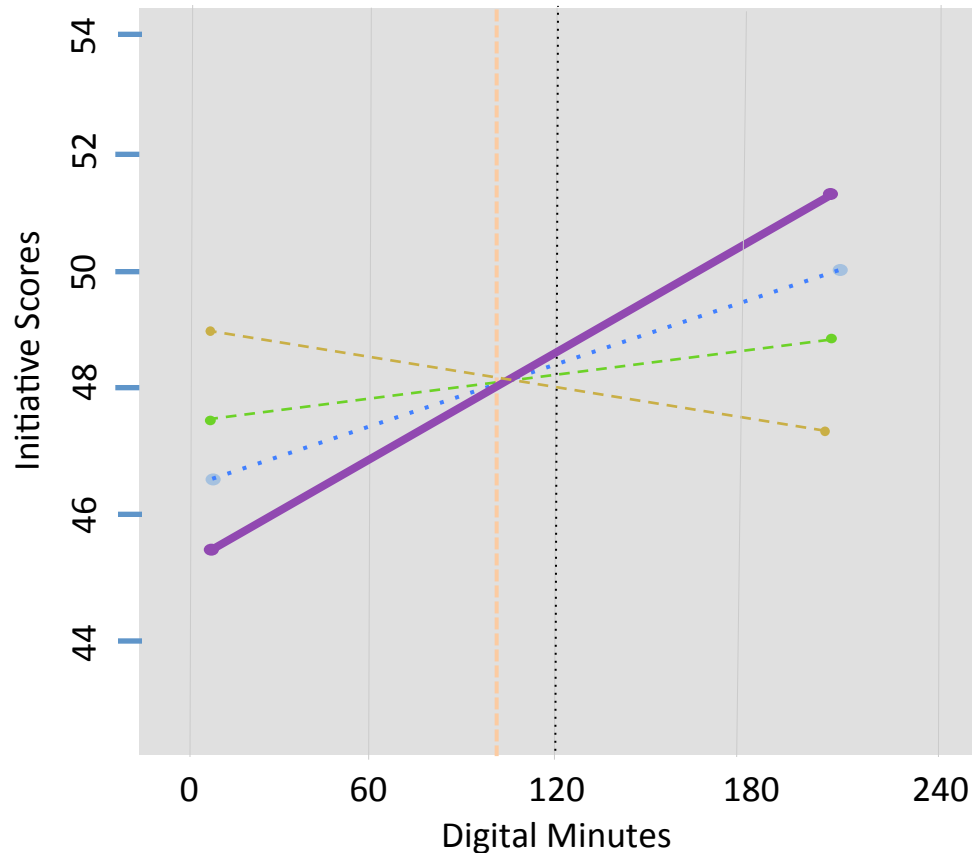
At +1 SD of Co-use, + 2.64 (per hour of Digital Use)

Covariates:

Age, Gender, Total Time using TV, PPVT



INITIATIVE



- Low Co-Use
- Low-Medium Co-Use
- Medium Co-Use
- High Co-Use **(significant)**

--- Mean = 96 minutes/day

... AAP recommendation of maximum screen time/day

No Main Effects:

Interaction: Total Digital x Co-Use

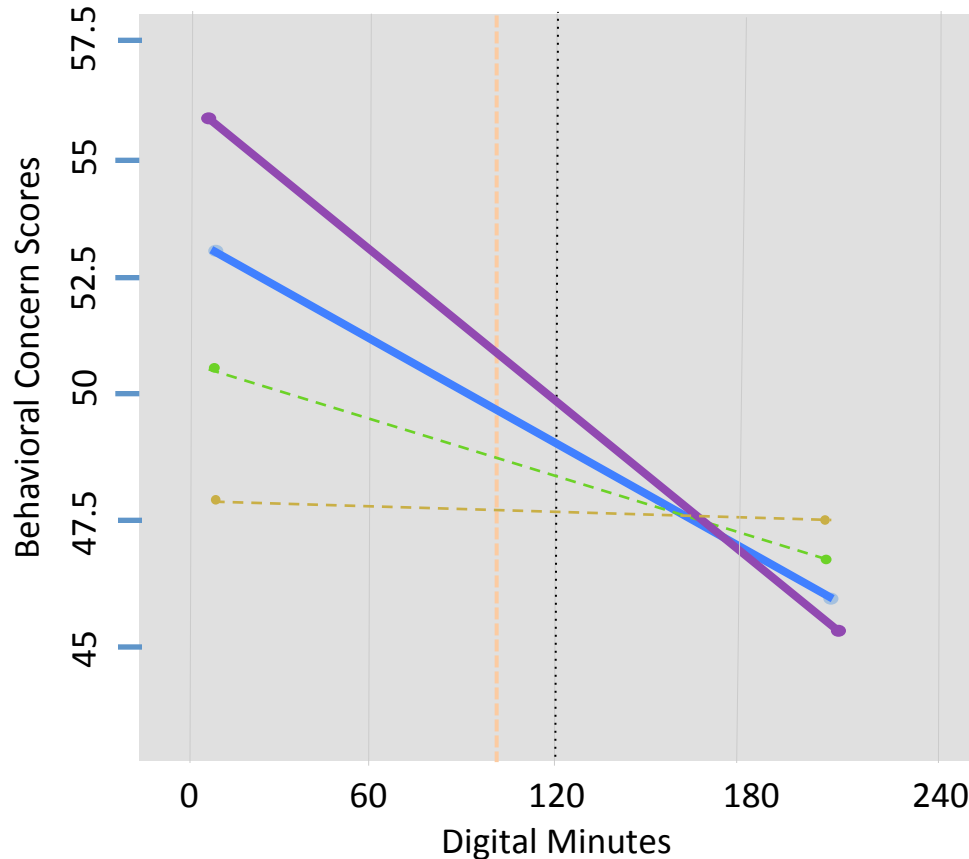
At +1 SD of Co-use, + 1.38 (per hour of Digital Use)

Covariates:

Age, Gender, Total Time using TV



BEHAVIORAL CONCERNS



- Low Co-Use
- Low-Medium Co-Use
- Medium Co-Use **(significant)**
- High Co-Use **(significant)**

--- Mean = 96 minutes/day

... AAP recommendation of maximum screen time/day

Main Effect: Total Digital

Coeff. = -1.32 on Behavioral Concerns (for every hour used)

Interaction: Total Digital x Co-Use

At Medium Co-Use, -1.32 (per hour of Digital Use)

At High Co-Use, -2.64 (per hour of Digital Use)

Covariates:

Age, Gender, Total Time using TV



DISCUSSION AND CONCLUSIONS

- Parent's co-use of digital media with their child may promote the child's self-control and initiative because parents offer scaffolding to the child as they are using the media together. Also, parents may be helping their child to focus their attention on the tasks presented by the digital media apps/software.
- The main effect of digital media use on self-regulation skills (more digital use is associated with higher self-control) may be explained by the contingent responses and interactivity (albeit rudimentary) digital media offer.
- Behavioral concern scores are found to decrease when children use digital media as well as when parents co-use the media with them. This may be because children are engaged and occupied with the media tasks when otherwise they wouldn't be. Parent-child joint activity also has been associated with lower internalizing and externalizing behaviors in young children.



Thank you

Any Questions?



Dr. Muccabel Gonen, Hacettepe University
Dr. Mefharet Veziroglu Celik, Bahcesehir University
Dr. Volkan Sahin, Middle East Technical University



Jan Esteraich, M.S., University of Nebraska – Lincoln
Dr. Helen Raikes, University of Nebraska – Lincoln
Dr. Lixin Ren, University of Nebraska – Lincoln
Ibrahim Acar, M.S., University of Nebraska – Lincoln

Corresponding author: Jan Esteraich, jan.esterach@gmail.com

