

5C's Digging into the Evidence

Digging Into the Evidence

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Social Media and Youth Mental Health

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AAP Center of Excellence on Social Media and Youth Mental Health

- Fall 2024, the American Academy of Pediatrics was awarded \$10 million over five years from the U.S. Department of Health and Human Services (HHS), through the Substance Abuse and Mental Health Services Administration (SAMHSA), to establish a National Center of Excellence on Social Media and Mental Wellness.
- The Center will serve as a centralized, trusted source of evidence and support for children and teens, parents, educators, pediatricians and other professionals who help youth navigate social media.

Three Main Goals of the Center of Excellence

1. Improve pediatric mental wellbeing by reducing the risks and leveraging the benefits of social media
2. Build the capacity of individuals who work with youth to mitigate social media's impact on mental wellbeing and promote healthy social media use, and
3. Synthesize and promote the evidence base and best practices for healthy social media use via communication, guidance, and other resources



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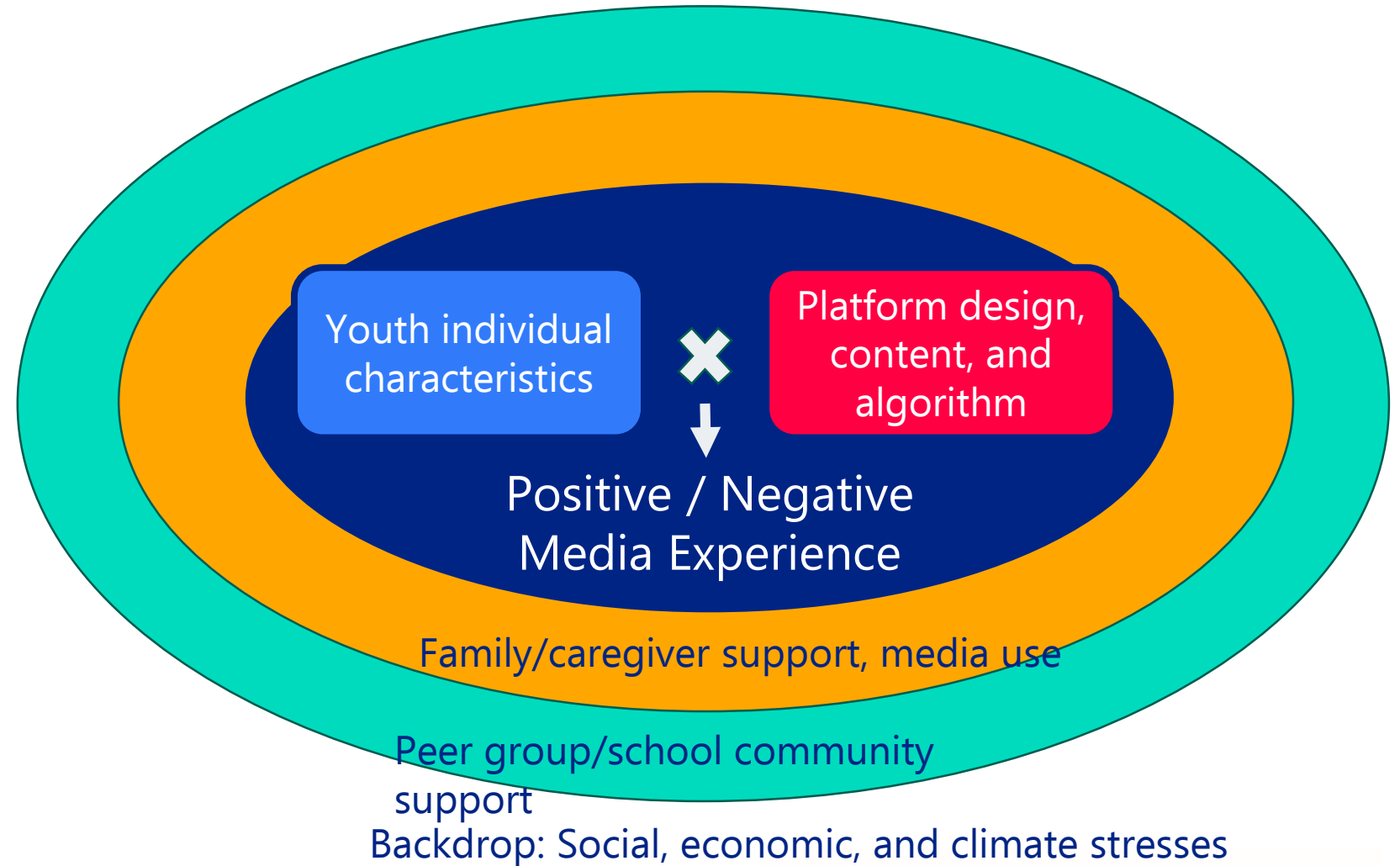
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Agenda and goals

- Introduce 5 C's framework: Clinically-relevant concepts around which there is scientific consensus
- Organizing our evidence review around them to illustrate the way we are approaching our evidence-based clinical guidance
- Introduce frequently asked topics about which there is limited evidence

Center of Excellence Framework

1. Centering on the child/adolescent
2. Individual differences
3. Importance of context
4. Developmental lens
5. Digital ecosystem design



5 Cs of Healthy Media Use

1. *Child: Who is your child/adolescent, their unique strengths and challenges? How does this shape their media use and how they react to it?*
2. *Content: What content is high-quality and worth our time? How does negative content affect our thoughts and emotions?*
3. *Calm: How does your child calm down strong emotions and settle down for sleep?*
4. *Crowding out: When we use media for too long, what does it get in the way of?*
5. *Communication: Understanding your child's digital experiences, supporting critical thinking and problem-solving.*

5 Cs in Children 0-10 Years

5 Cs of Healthy Media Use

1. **Child**
2. Content
3. Calm
4. Crowding out
5. Communication

1st C: CHILD

- Experts agree that media effects are heterogeneous, meaning they are stronger for some children than others.
- We know that children are all “wired” differently, so it makes sense that they have different preferences and behaviors around media.
- Why one-size-fits-all approaches tend not to work for all kids.
- Trauma-informed: Helping parents understand and be sensitive to their child’s unique strengths, challenges and drivers of behavior

National Academies of Sciences, Engineering, and Medicine. *Assessment of the Impact of Social Media on the Health and Wellbeing of Adolescents and Children 2023*

Brazelton TB. *Touchpoints*, 1992

Lieberman A. *The Emotional Life of the Toddler*, 1995



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1st C: CHILD

- Several studies have found that infants with difficult temperament or self-regulation problems watch more TV and videos
- Toddlers with social-emotional delays are more likely to use mobile devices during home routines (e.g., meals, car rides), to calm down when upset, or to keep occupied when parent wants peace and quiet in the house.
- Neurodiverse children (e.g., ADHD, autism spectrum disorder) are more likely to develop problematic internet use and gaming
- School-aged children with more adverse childhood experiences have higher rates of problematic media use.

Thompson et al, *Pediatrics* 2013; Radesky et al *Pediatrics* 2014
Raman et al, *Clin Pediatr* 2017; Radesky et al, *JAMA Pediatr* 2016; Murray et al., *Res Autism Spectrum Dis* 2021; Domoff, et al. *IJERPH* 2021.



5 Cs of Healthy Media Use

1. Child
- 2. Content**
3. Calm
4. Crowding out
5. Communication

2nd C: CONTENT

- Content and design influence whether a given media experience is positive or negative
- Television and videos:
 - Sesame Street, Daniel Tiger's Neighborhood, Blues Clues, etc have evidence for child learning in preschool-aged children
 - More time spent viewing non-educational content associated with weaker language development
- Mechanisms:
 - Formal/informal learning, parasocial relationships
 - Pacing, formal features, and cognitive load



Kirkorian & Skora Hogan, *Encycl Child Adol Health* 2022

Madigan et al., *JAMA Pediatrics* 2020

Lillard & Peterson *Pediatrics* 2011; Hirsh-Pasek et al., *Psychol Sci Public Int* 2015.

2nd C: CONTENT

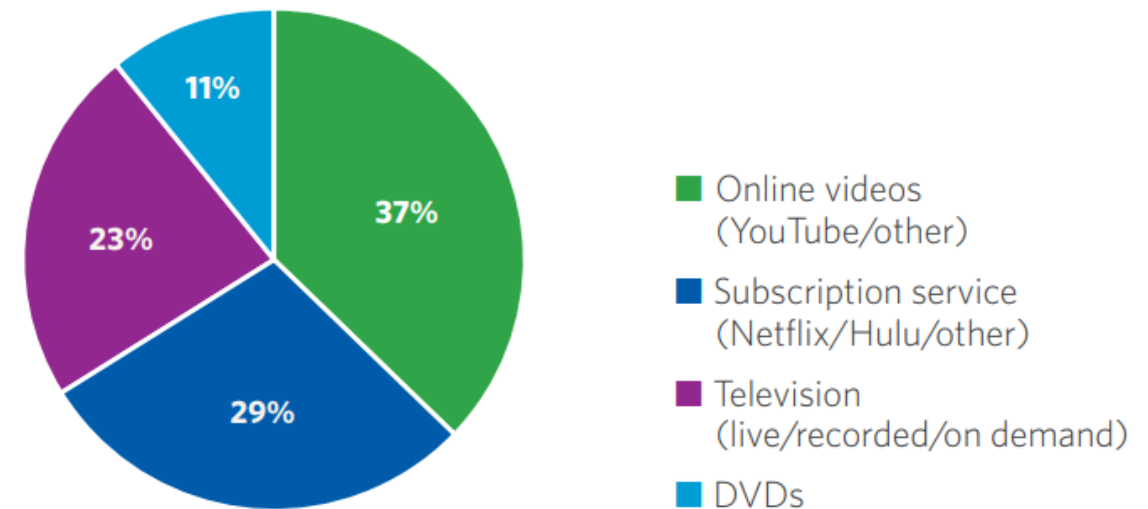
TABLE 12. Use of Mobile Media, by Activity, 2020

0- to 8-year-olds who have used mobile media to ...

	All	<2	2 to 4	5 to 8
Watch online videos	72%	30% ^a	78% ^b	87% ^c
Play games	65%	12% ^a	65% ^b	90% ^c
Watch television/movies	64%	26% ^a	73% ^b	76% ^b
Use apps	55%	10% ^a	52% ^b	78% ^c
Read books	33%	7% ^a	31% ^b	47% ^c
Any mobile use	83%	40%^a	93%^b	96%^c

FIGURE 4. Television/Video Viewing, by Type, 2020

Among 0- to 8-year-olds, proportion of total TV/video viewing that occurred through ...

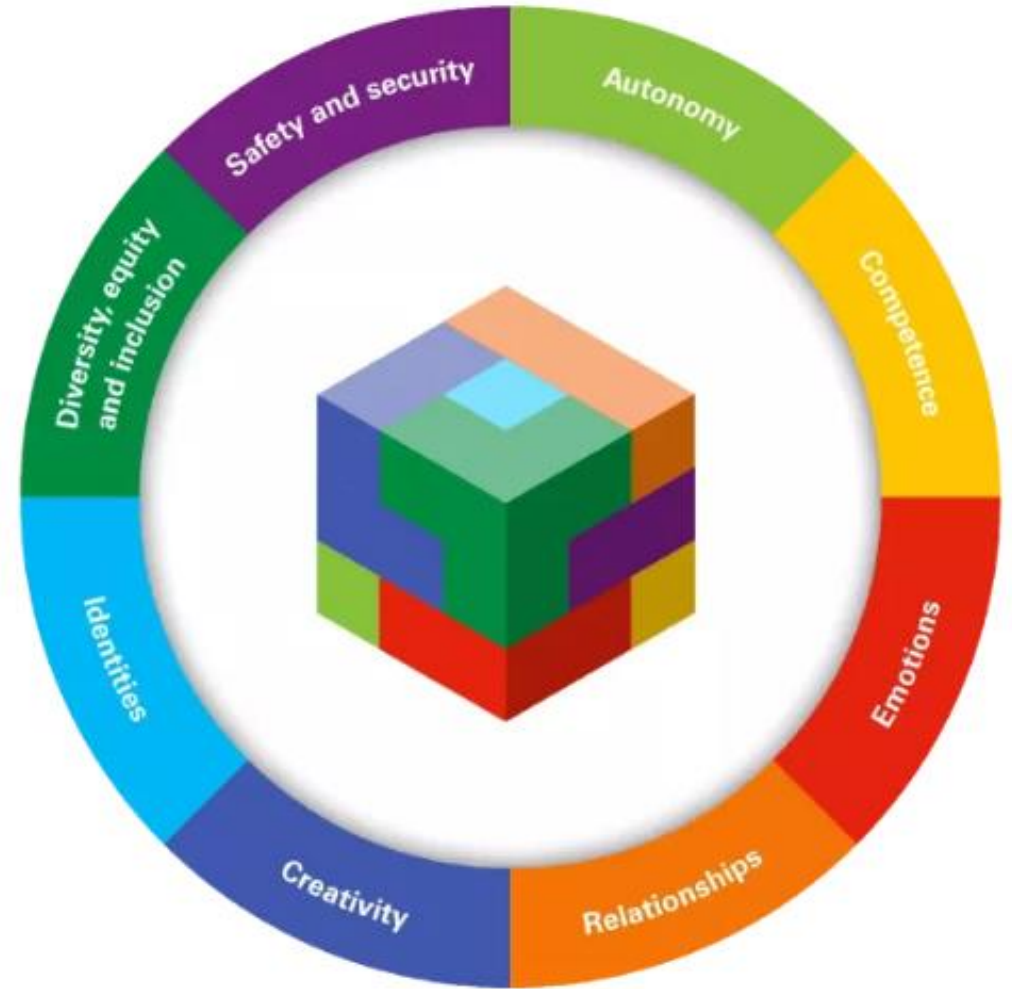


2nd C: CONTENT

CHILD-CENTERED TECHNOLOGY DESIGN



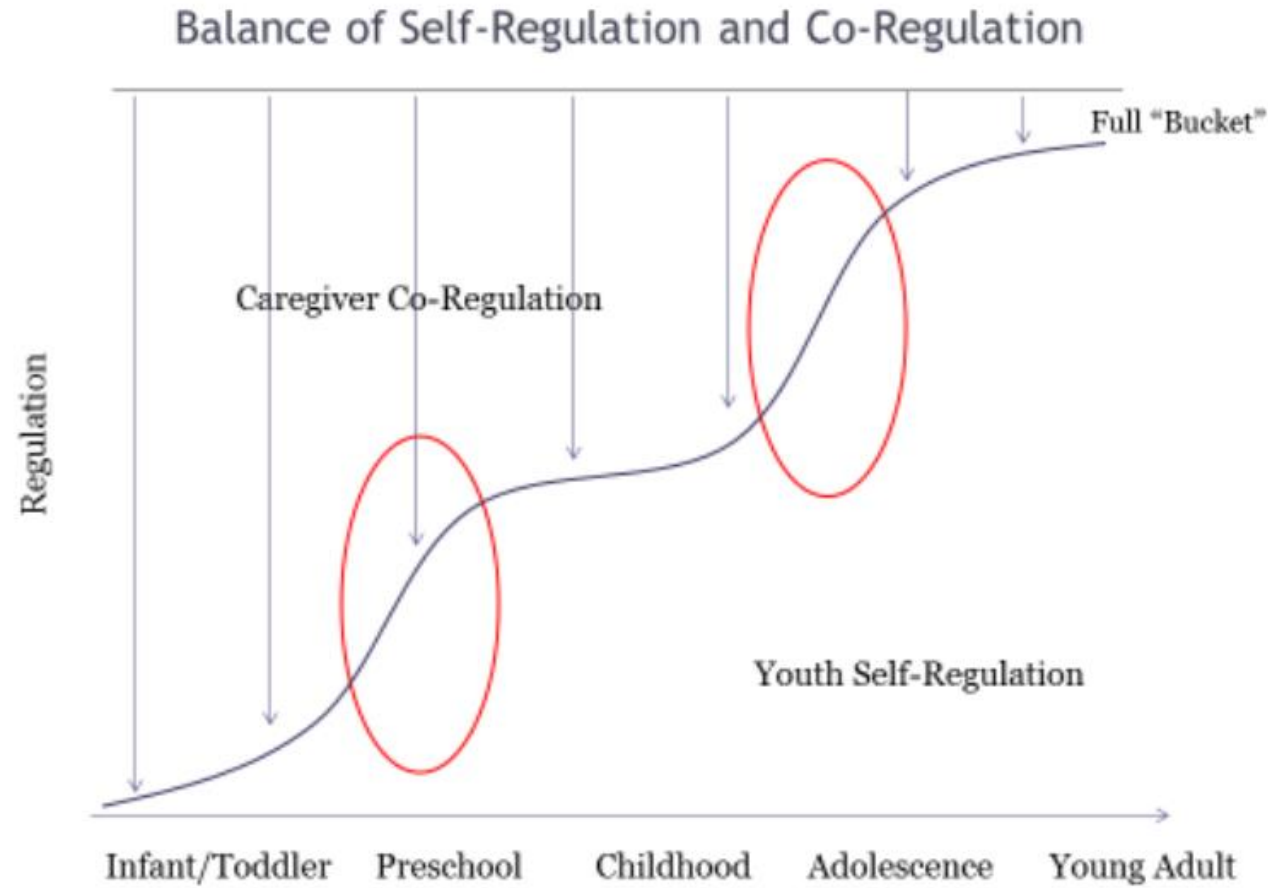
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5 Cs of Healthy Media Use

1. Child
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- 3. Calm**
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3rd C: CALM



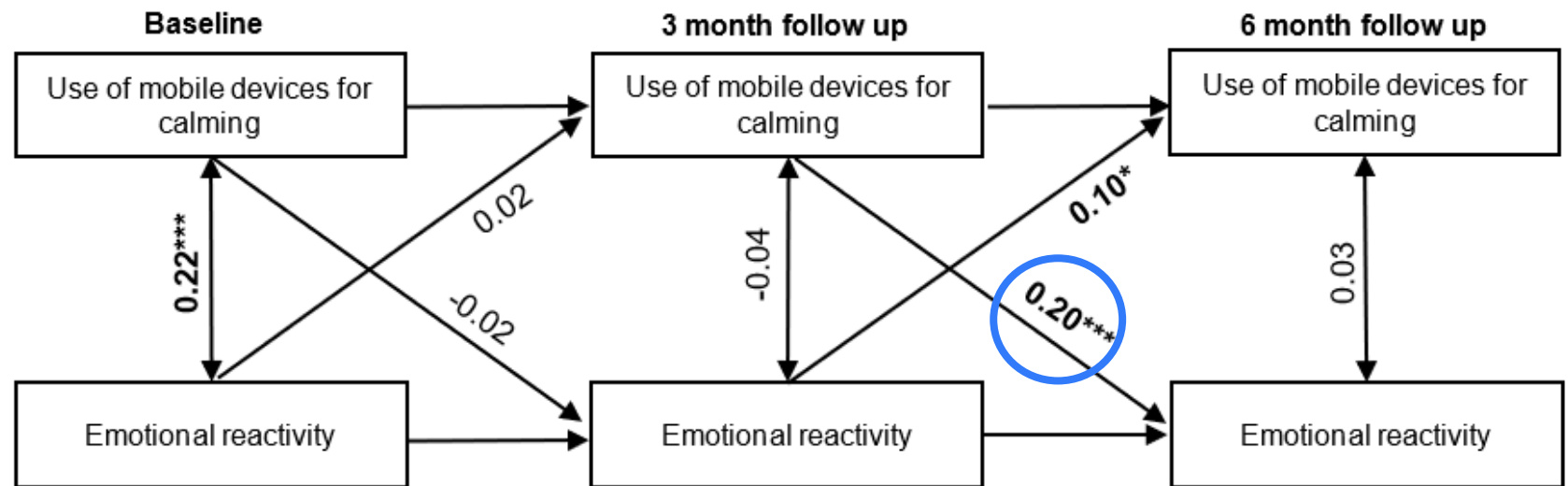
Source: *Co-regulation from Birth Through Young Adulthood: A Practice Brief*. Duke Center for Child and Family Policy, UNC Chapel Hill, OPRE



3rd C: CALM

- Emerging evidence suggests that use of media for emotion regulation is linked with worse emotional reactivity over time
- Parents who self-regulate with a “virtual escape” have higher levels of parenting stress and ...

Emotional reactivity model: Boys



5 Cs of Healthy Media Use

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4th C: CROWDING OUT

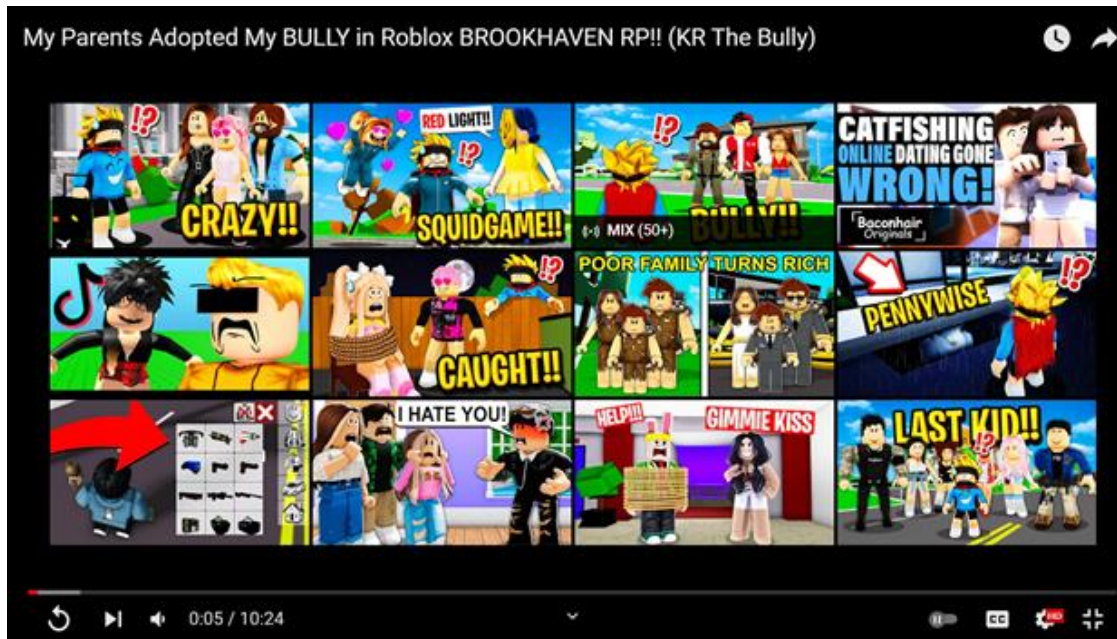
- Displacement of other activities is an important mechanism linking media use and early childhood emotional wellbeing:
 - Sleep quantity and quality
 - Language exposure, conversation
 - Play and physical activity
 - Reading
- Engagement-prolonging features make it harder to disengage from media

Janssen, et al. *Sleep Med Rev* 2020; Brushe M, et al. *JAMA Pediatrics* 2024; McArthur B, et al, *Pediatrics* 2021; Cheung et al., *Sci Reports* 2017.
Hiniker et al., *CHI* 2016; Hedin-Urrutia et al, under review



4th C: CROWDING OUT

- Engagement-prolonging design example



5 Cs of Healthy Media Use

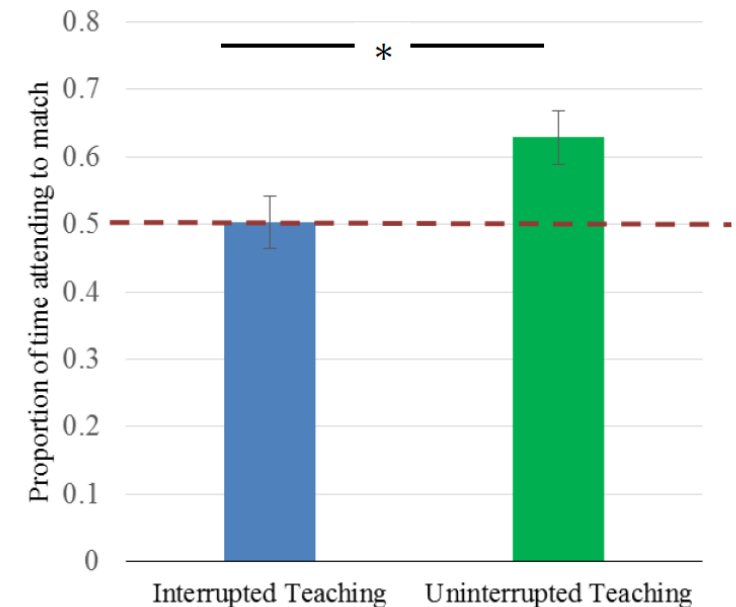
1. Child
2. Content
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- 5. Communication**

5th C: COMMUNICATION

- Caregiver instructive mediation and co-viewing:
 - Helps young children learn from media and transfer to their 3-D worlds
 - Helps older children recognize ads and persuasive intent
- Around 8-10 years, children start to have clearer mental models of:
 - Digital privacy and what platforms know about them
 - Judgments of “right” vs. “wrong” online behavior
 - “Creepy” vs. “cute” technology design

5th C: COMMUNICATION

- Parent media use may be a barrier to communication
- Background media: For every minute of screen use, young children hear 6.6 fewer words and speak 4.9 fewer words to others.
- Parent attention to mobile devices →
 - Less parent-child verbal and nonverbal interaction
 - Lower parent responsiveness to child bids
 - Less child learning
 - More child externalizing behavior



Brushe M, et al. *JAMA Pediatrics* 2024; Radesky et al, *Pediatrics* 2014; Radesky et al, *Academic Pediatrics* 2015; McDaniel & Radesky, *Pediatric Research* 2018; Reed et al, *Developmental Psych* 2017; Hiniker et al, *CHI* 2014

5 Cs in Adolescents



Social media and the adolescent

5 Cs

- Child
- Content
- Calm
- Crowd out
- Communication

Center of Excellence framework

1. Centering on the child/adolescent
2. Developmental lens
3. Importance of context
4. Individual differences
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1st C: Child

Teens use media for many reasons and in many ways

- Social: Communicating with friends, building larger networks based on interests (e.g., fandoms), maintaining relationships
- Emotional: Seeking support, relieving stress
- Functional: Planning events, engaging around assignments
- Identity: Exploring sense of self, seeing reactions from others, feeling understood, finding communities and learning about others' identities
- Civic: Getting involved in activism around climate change, gun safety, etc

Ogders and Jensen. Annual Research Review: Adolescent Mental Health in the digital age: facts, fears and future directions. Journal of Child Psychology and Psychiatry. 2020.

Differences *within* an individual

Changes with growth and development

- Entertainment as priority may shift to social connection
- Connections (friends, peers) change over time
- Identity development is a process

Differences *between* individuals

Child-centered factors determine media experiences

- Underlying mental health and wellness
 - Anxiety, depression, resilience
- Ongoing health conditions
 - Rare conditions, chronic illness

Social media and the adolescent

5 Cs

- Child
- **Content**
- Calm
- Crowd out
- Communication

2nd C: Content

- Developmentally appropriate for teens to be curious and seek out different types of content
- May lead to intentional or unintentional exposure to inappropriate, false or scary content
- Content can include visual, video and audio
- Algorithms may get teens stuck in a 'content loop'

2nd C: Content

- Ecological momentary assessment study
- Assessed smartphone activities and mood
- Findings
 - Mood improvement with most activities
 - Most improvement with listening to music, podcasts or audiobooks
- Suggests that different activities and content can have differential impact on mood

Social media and the adolescent

5 Cs

- Child
- Content
- **Calm**
- Crowd out
- Communication

3rd C: Calm

- Very common for teens to use social media as a distraction or for emotional regulation
- Is this helpful?
 - Curated content can help with calm
 - But....social media can always deliver a surprise

3rd C: Calm

- Many teens very aware of apps and media to help with calm



3rd C: Calm

- Many teens very aware of apps and media to help with calm



- RCT of college students
- 12 week study
- Intervention: App use 10 minutes/day
- Found improvements in stress, mindfulness and self-compassion
- Effect size ranged moderate to large

Huberty J, Green J, Glissmann C, Larkey L, Puzia M, Lee C.
Efficacy of the Mindfulness Meditation Mobile App "Calm" to Reduce Stress Among College Students: Randomized Controlled Trial. JMIR Mhealth Uhealth. 2019 Jun 25;7(6).

3rd C: Calm

- Larger systematic reviews and meta analyses
 - Small but significant overall intervention effect
 - Significant impact for approaches focusing on emotion regulation
 - Another systematic review examined digital games, biofeedback and VR/AR and found significant effect mostly in games

Murray DW, Kurian J, Hong S, Andrade F. Meta-analysis of early adolescent self-regulation interventions: Moderation by intervention and outcome type. *J Adolesc.* 2022 Feb; 94(2): 101-117.

Reynard S, Dias J, Mitic M, Schrank B, Woodcock K. Digital interventions for emotion regulation in children and early adolescents: Systematic review and meta analysis. *JMIR serious games.* 2022 Aug 19; 10(3).



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A calm toolbox

- Want teens to have a toolbox to help them calm and regulate emotions
 - Media, electronics, games, social media
 - Offline too
 - Music, reading, art, walks, outside, connection

Social media and the adolescent

5 Cs

- Child
- Content
- Calm
- **Crowd out**
- Communication

4th C: Crowd out

Sleep is critical in adolescence

- Poor sleep can include
 - Quantity issues
 - Shorter duration
 - Insomnia
 - Quality issues
 - Frequent awakenings
 - Daytime sleepiness



4th C: Crowd out

Sleep is critical in adolescence

- Poor sleep can include
 - Quantity issues
 - Shorter duration
 - Insomnia
 - Quality issues
 - Frequent awakenings
 - Daytime sleepiness

Outcomes

- Neurocognitive and academic functioning
- Mental health and well-being
- Physical health

Resources for sleep

Meet teens where they are

- Avoid assumptions and too simple of solutions
 - Many teens use their phone as their alarm
 - Not all teens have private spaces outside their room to use their devices
 - Any teens acknowledge they struggle with sleep and want to talk about it

Resources for sleep

Meet teens where they are

- Consider asking
 - What have you tried so far?
 - What is one thing you'd like to try?
 - Sounds like your phone needs to be in your room, what can you do to minimize it as a distraction?
 - Settings: DND, airplane mode, lighting, timer
 - Location
 - Using phone to help fall asleep

Social media and the adolescent

5 Cs

- Child
- Content
- Calm
- Crowd out
- **Communication**

5th C: Communication

Most important C for teens!

- Parent-child communication is critical across many domains of adolescent health
 - Parent-child communication about sex associated with increased prevention behaviors by teens
 - Parent-child communication about alcohol associated with delayed initiation and more protective behavioral strategies
- Early and often is better than a single perfectly delivered monologue

Widman L, Choukas-Bradly S, Noar S, Nesi J, Garrett K. Parent-Adolescent Sexual Communication and Adolescent Safer Sex Behavior: : A Meta Analysis. JAMA Peds. 2016 Jan; 170(1):52-61.

Kuntsche S, Kuntsche E. Parent-based interventions for preventing or reducing adolescent substance use - A systematic literature review. Clin Psychol Rev. 2016 Apr; 45:89-101.



5th C: Communication

What makes this tricky: Parents are using social media too

- Teens with positive media behaviors and wellbeing outcomes
 - More likely to have positive parent-child relationship
 - More likely to report low rates of social media use by parents
- Parent technology use
 - Associated with internalizing and externalizing problems
 - Negatively correlated with self-concept and social-emotional competence

Moreno M, Binger K, Zhao Q, Eickhoff J, Minich M, Uhls Y. Digital Technology and Media Use by Adolescents: Latent Class Analysis. *JMIR Peds Parent*. 2022 May 4;5(2).

Zhang J, Dong C, Jiang Y, Zhang Q, Li H, Li Y. Parental Phubbing and Child Social-Emotional Adjustment: A Meta-Analysis. *Psychol Res Behav Manag*. 2023 Oct 19;16:4267-4285.



Communication: Resources

- Family Media Plan
- 5 Cs handouts
- Open ended-questions
 - What's this like for you?
 - What do you think of [x]?
 - What's been fun to view lately?
 - How are you navigating your use with other things you want to do?
 - I'm finding I'm struggling with [x], have you had that experience?

Communication: Resources

- Use sign-post language
 - “It looks like your grandma is calling and I’m worried about her health, so I’m going to answer this”
 - “I’m driving now so I’m setting my phone out of reach”
 - “Wow, I got carried away scrolling through that. I’m going to set an alarm next time.”

Summary

- The 5 C's provides a memorable mnemonic
- Applies across ages
- Grounded in Center framework and evidence

Frequent Questions with Less Evidence

- School phone policies
- Management of problematic media use
- Teens in unsupportive households / when parents are controlling
- Best interventional approaches for managing parent tech use
- Best interventional approaches for specific mental health conditions (e.g., depression, eating disorders, ADHD)
- Best interventional approaches for low-resourced households

Where do we go from here?

- Need for observational studies
 - Qualitative
 - Quantitative
 - Mixed methods
- Need for theory that is not just focused on technology, but tech in context
- Combine theory and observational data to create and test interventions



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Thank You!



Questions?

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