The USF Psychiatry Department

in cooperation with

The Carter–Jenkins Center

presents

Kristopher Kaliebe MD

Assistant Professor LSUHSC
New Orleans, LA

What are they (we) Missing?
When Electronic Media Displaces Sleep, Academics, and Exercise

USF Psychiatry Department Grand Rounds

Disclosures of Potential Conflicts

NONE

OUTLINE

- **Case**
- **Definition**
- **Epidemiology**
- **Diagnosis**
- **Treatment**
- **Conclusions**

Case Study: Jermaine

- 15 year old inner city African American Male
- 8th grade – functionally 6th, held back in 4th, 7th
- Single mother with 5 children, Father rarely involved
- Heavy marijuana use
- Adderall XR 30mg, Seroquel 300mg HS, partially compliant with poor follow up

Case Study

- TV, Video Games in room since age of 3 years, smart phone for last year
- About 12 total hours media exposure daily, multitasked into 9 hours
- Video Games of choice: Grand Theft Auto, Madden,
- Movies/TV: Menace to Society, Martin, Everybody Loves Chris,
- Music: Rappers: Lil Boisie, Lil Wayne

Case Study: Jermaine

- "Bipolar", ADHD
- "I don't sleep"
- "He can't concentrate"
- "I need my medicine"

What is Displacement?

Electronic Media taking time, focus and energy away from other activities

Especially concerning is less time for academics, exercise and sleep.

2009-2010 NHANES survey

National Health and Nutrition Examination Study

- 38% of 6 to 11-year-olds met both physical activity and screen time recommendations (Fakhouri, et al., 2013).
- Obese youth and older are significantly less likely to meet screen time and physical activity recommendations.
- Screen time is only loosely connected to exercise levels. Many more active boys also consume large amounts of media

Early Childhood Television – Pagani 2010

- Screen time at 23 months - correlated with later Video Game use
- Screen time at 23 months correlated with obesity in 4th grade

Each hour per week of television correlated with:

- 7% unit decrease in classroom engagement, 6% in math achievement, **0% changing in reading (content!)**
- 9% unit decrease in fitness and 13% decrease in weekend physical activity

The Elephant in the room

- TV, Adiposity and Cardiometabolic risk in Children and Adolescents – Staiano 2013 - More TV = worse metabolic profile (see next slide)
- Obese adults with TV in bedroom watch 5.4 hours per day (vs. without TV in bedroom watch 3.6 hours per day) – Jones 2010
- Children of overweight / obese parents average 22 / 30 minutes more TV per day then of normal weight parents– Steffen 2009
- Viewing correlates to parental TV – Bleakly 2013

Table 1. Descriptive characteristics of study sample by TV in the bedroom and by TV viewing time

	TV in the bedroom			TV viewing time (hours/day)			
	No (n=127)	Yes (n=242)	p-value[a]	0–2 (n=130)	3–4 (n=116)	≥5 (n=123)	p for trend[b]
Age (years)	11.8 (3.5)[c]	12.6 (3.5)	ns	12.0 (3.7)	12.6 (3.2)	12.4 (3.6)	ns
Male (%)	38.6	52.1	**0.01**	46.9	47.4	50.1	ns
Ethnicity (%)							
Black	34.6	57.9	**<0.0001**	33.8	52.6	64.2	**<0.0001**
Nonblack	65.4	42.1		66.2	47.4	35.8	
BMI percentile (%)	69.9 (27.1)	74.8 (28.0)	ns	68.1 (27.9)	75.1 (26.6)	76.6 (28.0)	**0.035**
Fat mass (kg)	14.4 (9.1)	18.4 (13.0)	**0.003**	14.3 (10.6)	18.0 (11.7)	19.0 (13.0)	**0.005**
Subcutaneous adipose tissue mass (kg)	3.2 (2.7)	4.4 (3.9)	**0.002**	3.1 (3.0)	4.3 (3.6)	4.6 (4.0)	**0.002**
Visceral adipose tissue mass (kg)	0.11 (0.11)	0.14 (0.15)	**0.020**	0.12 (0.13)	0.15 (0.14)	0.15 (0.14)	ns
Waist circumference (cm)	71.9 (15.0)	78.4 (18.3)	ns	72.4 (15.4)	77.7 (17.8)	78.8 (18.7)	**0.007**
Triglyceride (mg/dL)	63.8 (31.4)	68.7 (36.2)	ns	64.3 (33.0)	70.5 (38.0)	66.6 (32.9)	ns
HDL-C (mg/dL)	53.3 (11.7)	53.3 (12.4)	ns	52.9 (11.4)	52.2 (11.2)	54.9 (13.7)	ns
Glucose (mg/dL)	88.1 (6.3)	88.9 (6.5)	ns	87.4 (6.3)	90.2 (6.7)	88.5 (6.0)	**0.004**
Insulin (μU/mL)	6.2 (5.1)	9.8 (10.1)	**0.0002**	6.5 (5.2)	10.4 (12.0)	9.0 (7.9)	**0.002**
Systolic blood pressure (mmHg)	101.9 (11.0)	104.8 (10.7)	**0.016**	101.9 (10.8)	104.6 (11.1)	105.0 (10.5)	**0.049**

The Henry J. Kaiser Family Foundation

- Electronics exposures continue to grow and change
- Negative correlation between screen time and grades.
- Boys are heavier media users and experience more academic problems.
- Many heavy electronics users do also participate in recommended levels of exercise.

Media in the lives of 8-18 year olds

Television	Video Games	Computer	MUSIC	Overall Exposure /Total time
4.5 hrs	1.22 hrs	1.5 hrs	2.5 hrs	10.75 hrs/ 7.6 hrs

Boys:
Average 90 min daily on console video games, if at all.
Less print social networks / More gaming.

The Vidiots - KFF 2010

Amount of use	Heavy	Moderate	Light
Fail/ Poor Grades	47%	31%	23%
Get into trouble	33%	21%	16%
Often sad /unhappy	32%	23%	22%
Often Bored	60%	53%	48%

common sense media®

THE COMMON SENSE CENSUS

MEDIA USE BY TWEENS + TEENS

This 2015 national survey details the media habits and preferences of American 8- to 18-year-olds and shows just how central a role media plays in the lives of Generation Z.

TWEENS

8-12 Years Old

TEENS

13-18 Years Old

AVERAGE DAILY MEDIA USE

Excluding time spent using media for school or for homework

TWEENS

6 hours

5:55 Total Hours
4:36 Hours of Screen Time

TEENS

9 hours

8:56 Total Hours
6:40 Hours of Screen Time

Multitasking: The New Normal

Many teens use media while studying, and most think it has no effect on the quality of their work.

While Doing Homework, Teens ...

MEDIA CONSUMPTION IS HIGHLY MOBILE

Mobile devices account for nearly half (41%) of all screen time used among tweens and 46% among teens.

TWEENS

53% of Tweens Have Their Own Tablet

24% of Tweens Have Their Own Smartphone

TEENS

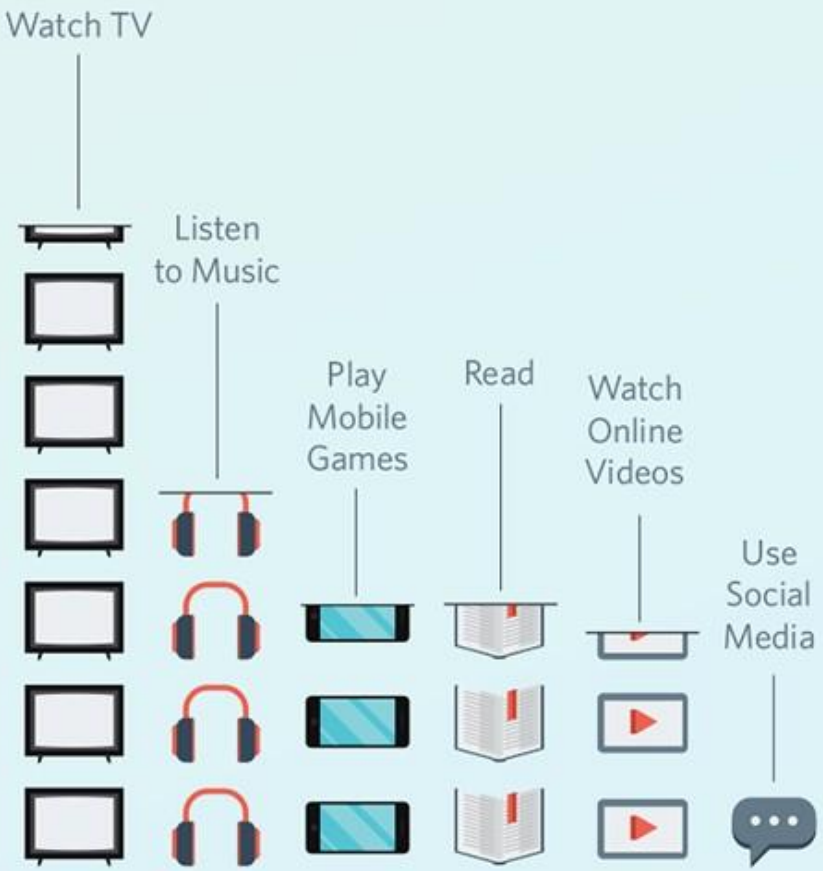
37% of Teens Have Their Own Tablet

67% of Teens Have Their Own Smartphone

SURPRISE! TV AND MUSIC STILL DOMINATE DAILY MEDIA DIET

Social Media = #meh

Teens spend on average 1:11 using social media, but only 10% of teens choose using social media as their "favorite" media-related activity.



TWEENS WHO DO ACTIVITY EVERY DAY.

62% 37% 27% 27% 24% 10%

TEENS WHO DO ACTIVITY EVERY DAY.

66% 58% 45% 34% 27% 19%

Displacement of Sleep

- Large reviews confirm electronics are significantly interfering with sleep (Cain 2010)
- Interactive electronics (especially Video Games) disturb sleep quality(King 2013, Weaver 2010)
- Low lux light & blue light disrupt sleep(Czeisler 2013)

Related to displacement of Sleep

- Access to many media devices (each one makes it worse)
- Active mobile phones in the bedroom overnight
- Television in the bedroom

Sleep is related to Cognition and Academics

- Dewald Meta-analysis 2010: Sleepiness, Sleep quality and duration all correlated with academic performance
- Curcio 2006: Sleep loss related to learning capacity and academic performance, poor declarative memory and procedural learning
- Short 2011: Parental-set bedtimes associated with improved sleep and daytime functioning

Displacement of Academics

- More screen time associated with lower academic performance - Cummings 2007
- Video Game Playing Associated with lower GPAs - Jackson 2010
- No association between computer and video games and GPA in college students - Wack 2009
- Multitasking and electronics associated with worse grades in college - Jacobson 2011
- Video game play detrimental to GPA and possibly SAT scores – Anand 2007

Most heavy media users receive poor grades

- Less time studying?
- Reduced sleep?
- Worse focus?
- De-motivator?
- Reduced reading?
- Identity formation?
- A combination or other?

Displacement of direct Social Interactions

- Disconnectedness? – Predicted by Meyrowtiz 1985
- Loss of social skills – Ulhs 2014
- Loss of social capital – Putnam 1995
- Loss of benefits of direct social interaction

Displacement of Nature- Re-naturing our lives Ulrich 1984, Berman 2008, Louv

Concerned?

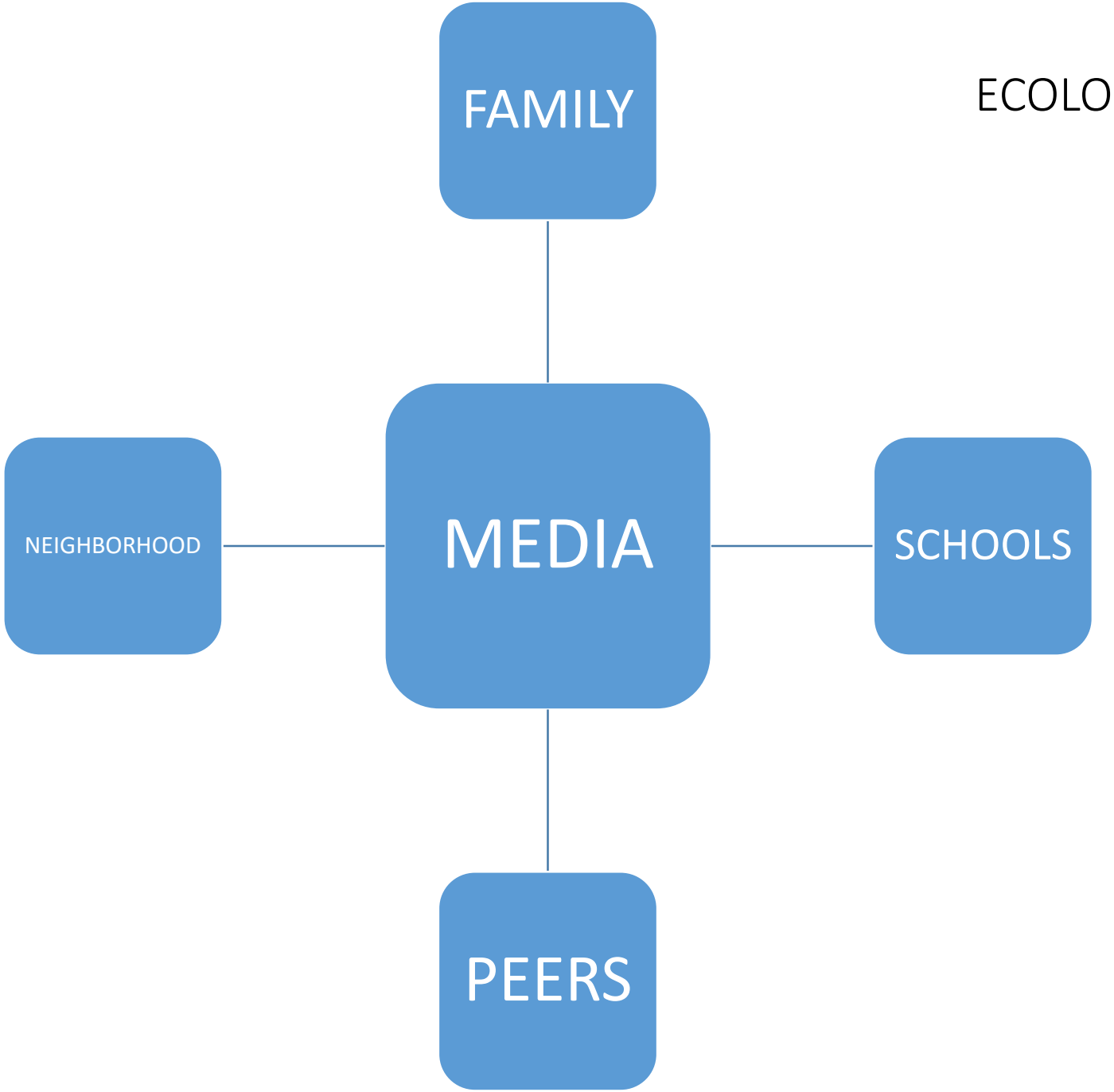

Internet Explorer - Logoff Warning
You have been on-line for 1 year.
Do you wish to Log Off and get a Life?
Yes
NO
Remind me next year

Positive Effects

- The “rights revolution” was aided by media portrayals
- Children’s programming promotes prosocial attitudes and learning
- Prosocial game play correlates with

increased helping, empathy, emotional awareness & sharing

ECOLOGICAL MODEL



Diagnosis of Displacement Effects

- Various Displacements vs. Specific

- Multiple types of problematic media

vs. Single

- Duration
- Continuous vs. intermittent
- Associations

Case Study

- Weaned off Seroquel, Adderall DCed
- Threatens to “click out” , but doesn’t
- Not found to be hyperactive, anxious or have a mood disorder

Case Study:

Complete media fast via Incarceration:

- Begins reading while incarcerated: "Bluford High series"
- Makes progress in school, advancing 2 grades in a year
- Is removed from mental health list after 5 months

Historical Perspectives

Plato- (427-347 BC): children should only hear stories providing guiding principles and values

KNOW THY SELFIE

Treatment: Satisficing

- Good enough!
- Simple heuristics often lead to better decisions than complex theoretically optimal procedures. Marewski 2010

Treatment: Rules of Thumb

Honor Silence

Everything off on weeknights

Bedroom sanctuary: no electronics

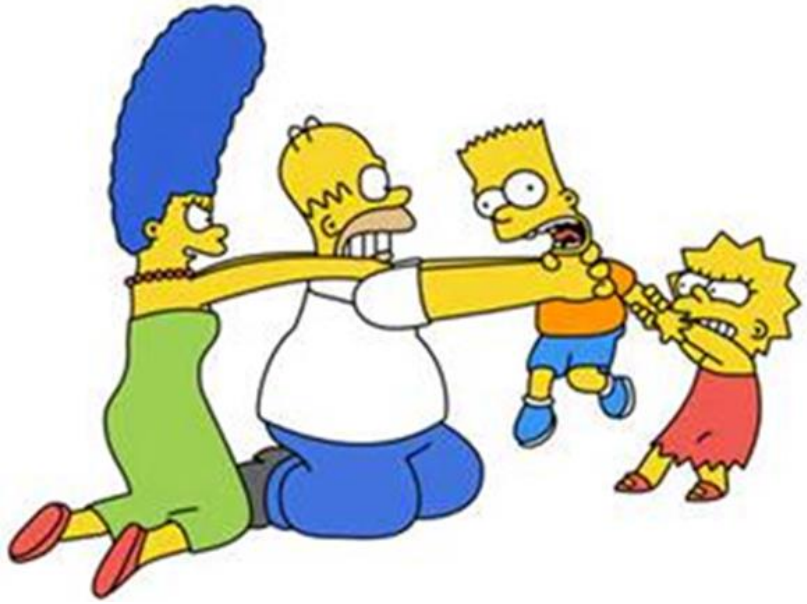
Gentile et al, JAMA Pediatrics 2010

Parental Monitoring of media correlated positively with:

- Total Sleep Time
- Academic performance

- Viewing R rated movies increased odds of poor academic performance
- Screen time inversely correlated with total sleep time
- Prosocial behavior and aggression also affected
- Did not correlate with BMI

Media Restriction



- Perceived as punishment by the youth, leading to further resistance and conflict.
- Parent training focuses on extinguishing negative family cycles, reducing negative communications and shaping new behaviors through rewards and positive communications.

Engrained unhealthy regimens

- Empathetic, accepting, and positive
- Regardless of whether caregivers are interested in, or ready for, change
- Strong reinforcers keep patterns going

MOTIVATIONAL APPROACH

	Impossible	Could do Sometime	Could do most of the time	Could do almost always
Increase positive communication			X	
All electronics off 1 hour before bedtime		X		
1 set of media rules for whole family		X		
Family media fast on weekend	X			
Family reading / quiet time daily		X		

Focus on the positives

- Positive examples: Low levels of electronic media use are associated with multiple better outcomes
- Cross cultural comparisons are illuminating
- Suggest an "experimental" media fast
- Parents: "Know thy selfie?"
- Motivational approach

Treatment of Displacement of Exercise

- Sedentarism is a family problem: Parents must have "skin in the game"
- Gyms are for people who are already in shape
- Re-nature: exercise in nature is exercise[2]

- Questions?
- Comments?

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The End