

# The association between screen time and mental health of adolescents

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## BACKGROUND

- The prevalence of depression in adolescents and young adults has increased in the past decade
- An estimated 3.2 million adolescents aged 12 to 17 in the United States had at least one major depressive episode.
- The prevalence of major depressive episode was higher among adolescent females (20.0%) compared to males (6.8%).

## INTRODUCTION

- Increases in depression among adolescents has been concurrent with the increases in digital media productions.
- These trends included sharp increases in:
  - Depression, Anxiety
  - Feelings of loneliness
  - Self-harm
  - Suicidal ideation / attempts, and suicides
- Increases more pronounced among girls and young women

## METHODS (n=13,667)

- Data: 2019 Youth Risk Behavior Survey (YRBS)
- Bivariate Analysis: Pearson chi-square tests.
- Multivariate Analysis: Binary logistic regression with odds ratios
- Outcome variable: Depression
- Main predictor: Screen-time/computer use

## METHODS (covariates)

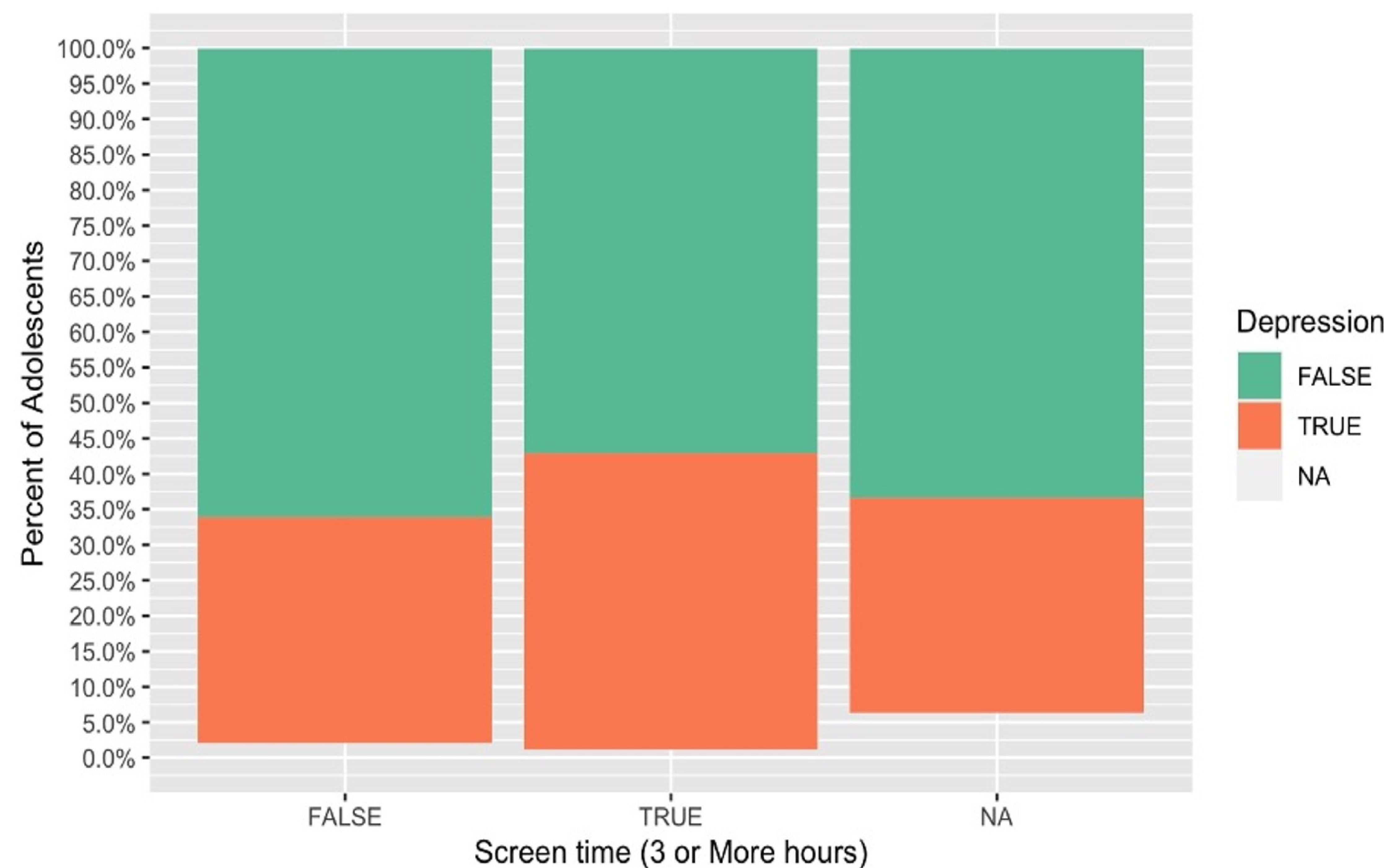
- Race/ethnicity (non-Hispanic Black race, non-Hispanic white, Hispanic, Asian, and other),
- Age in years,
- Male versus non-male gender.
- Physical activity defined as 1 for participants who did an hour of physical activity on 2 or fewer days
- Television watching 3 or more hours.
- Educational covariates mostly As and Bs versus Cs, Ds, Fs, or no grades.
- Cyberbullying was considered as a mediator.

Table 2: Associations between screen time and self-reported depression stratified by reported cyber bullying.

With Cyberbullying				Without Cyberbullying		
Variables	OR	(95% CI)	P-value	OR	(95% CI)	P-value
<b>Screen Time</b>						
≥ 3 hours per day	1.55	(1.36, 1.75)	<0.001	1.58	(1.46, 1.71)	<0.001
<b>Gender</b>						
Male	REFERENCE GROUP			REFERENCE GROUP		
Female	2.22	(1.98, 2.49)	<0.001	2.52	(2.33, 2.74)	<0.001
<b>Age</b>						
Age in years	1.07	(1.04, 1.11)	<0.001	1.05	(1.02, 1.09)	<0.001
<b>Race/Ethnicity</b>						
White	REFERENCE GROUP			REFERENCE GROUP		
Black	0.79	(0.70, 0.88)	<0.001	0.70	(0.62, 0.79)	<0.001
Hispanic	1.11	(0.95, 1.29)	0.17	0.97	(0.83, 1.12)	0.66
Asian	0.93	(0.76, 1.12)	0.44	0.84	(0.70, 1.02)	0.08
Race (Others)	1.07	(1.25, 1.07)	0.01	1.26	(1.08, 1.48)	<0.001
<b>Physical Activity</b>						
≥ 3 days per week	REFERENCE GROUP			REFERENCE GROUP		
≤ 2 days or less per week	1.32	(1.20, 1.44)	<0.001	1.31	(1.20, 1.43)	<0.001
<b>TV watching</b>						
≤ 2 hours per day	REFERENCE GROUP			REFERENCE GROUP		
≥ 3 hours per day	1.02	(0.91, 1.14)	0.71	1.01	(0.91, 1.13)	0.84
<b>Letter Grades in School</b>						
C's or less	REFERENCE GROUP			REFERENCE GROUP		
Mostly A's and B's	0.59	(0.54, 0.64)	<0.001	0.57	(0.52, 0.63)	<0.001
<b>Cyber Bullying variable</b>						
Bullied Online (yes)	4.12	(3.55, 4.88)	<0.001			

Figure 2: Association between screen time usage and depression

Barplot of Adolescent Depression and Screen Time



## LIMITATIONS

- This research is cross-sectional, so there is a lack of longitudinal evidence for any causal or long-term effects.
- Lack of a standardized instrument to capture depressive symptomatology
- Due to the survey approach of gathering data potential recall bias may be present

## RESULTS

- Adolescents who use screens 3 or more hours per day are more likely to report depression 42.2% vs 32.4% ( $p < 0.001$ ) (Figure 2).
- Adolescents who use screens at least 3 hours per day have 52% greater odds of depression (crude OR=1.52, 95% CI (1.36, 1.75)).
- Controlling for demographics, activity, and educational variables, adolescents who engaged in 3 or more hours of screen time had 55% greater odds of depression (95% CI (1.34, 1.71)) (Table 2).
- Cyber bullying was associated with 4 times the odds of depression ((95% CI (3.55, 4.88)).

## DISCUSSION

- An association between adolescent screen time and depression was found.
- Overall, adolescent that are exposed to any amount of screen time usage are susceptible to being cyber bullied.
- the evolution of technology becoming more handheld, portable, and accessible has created a threat to the overall mental and potential physical health of adolescents.

## CONCLUSION

- As evidence of this research have shown, excessive screen time may represent a risk factor or marker of anxiety and depression in adolescents.
- If online schooling for children and adolescents is to become the new form of education, then plans to reduce and regulate screen time may need to be considered when it comes to aiding in the prevention and treatment of any psychiatric disorders in youth.