

Screens, Teens and Psychological Well-Being: Evidence from three time-use diary studies

Supplementary Materials

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2	Strengths and difficulties Questionnaire Detailed items participants completed in the Strengths and Difficulties Questionnaire
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5	Real-Life Measure Details about how real-life measure of social media use in discussion section was calculated.

Strengths and Difficulties Questionnaire

	Not True	Somewhat True	Certainly True
Considerate of other people's feelings			
Restless, overactive, cannot stay still for long			
Often complains of headaches, stomach-aches or sickness			
Shares readily with other children (treats, toys, pencils etc.)			
Often has temper tantrums or hot tempers			
Rather solitary, tends to play alone			
Generally obedient, usually does what adults request			
Many worries, often seems worried			
Helpful if someone is hurt, upset or feeling ill			
Constantly fidgeting or squirming			
Has at least one good friend			
Often fights with other children or bullies them			
Often unhappy, down-hearted or tearful			
Generally like by other children			
Easily distracted, concentration wanders			
Nervous or clingy in new situations, easily loses confidence			
Kind to younger children			
Often lies or cheats			
Picked on or bullied by other children			
Often volunteers to help others (parents, teachers, other children)			
Thinks things out before acting			
Steals from home, school or elsewhere			
Gets on better with adults than with other children			
Many fears, easily scared			
Sees tasks through to the end, good attention span			

PSID Short Moods and Feelings Questionnaire

“For this next set of items, choose the number next to the statement that best describes how you have felt during the last two weeks. We'll begin on page 18. Can you tell me the question number that appears at the top of that page?”

Select the number next to the sentence from the group that best describes your feelings during the last two weeks.”

I am sad once in a while	I am sad many times	I am sad all the time
Nothing will ever work out for me	I am not sure if things will work out for me	Things will work out for me
I do most things O.K	I do many things O.K	I do everything wrong
I hate myself	I do not like myself	I like myself
I feel like crying everyday	I feel like crying many days	I feel like crying once in a while
Things bother me all the time	Things bother me many times	Things bother me once in a while
I look O.K	There are some bad things about my looks	I look ugly
I do not feel alone	I feel alone many times	I feel alone all the time
I have plenty of friends	I have some friends, but I wish I had more	I do not have any friends
Nobody really loves me	I am not sure if anybody loves me	I am sure that somebody loves me

Additional Significance Tests

Here we detail additional significance tests that we did not include in the main body manuscript. This includes measuring the significance of a SCA by examining the proportion of results in the dominant direction for the original and bootstrapped SCA.

SCA Results (Table 2)

Technology Measure	GUI		PSID		MCS		Aggregated
	# results in dominant direction	<i>p</i> -value	# results in dominant direction	<i>p</i> -value	# results in dominant direction	<i>p</i> -value	
Self-Report	4	.13	2	1	1	.24	11
Participation (Weekday)	3	.68	3	.63	6	.03	10
Participation (Weekend)	4	.11	2	1	4	.73	10
Time Spent (Weekday)	4	.13	4	.14	6	.04	14
Time Spent (Weekend)	4	.13	3	.63	4	.67	11
< 30 min (Weekday)	4	.13	2	1	5	.23	7
< 30 min (Weekend)	4	.12	4	.12	4	.73	10
< 1 hour (Weekday)	2	1	2	1	5	.21	9
< 1 hour (Weekend)	2	1	4	.11	5	.21	7
< 2 hours (Weekday)	2	1	4	.13	6	.03	8
< 2 hours (Weekend)	2	1	4	.12	5	.23	7

Confirmatory Results (Table 3)

Measure	# results in dominant direction	<i>p</i> -value
Self-Report	5/6	0.24
Time Spent	10/12	0.04
< 30 Minutes on Weekday	5/6	0.03
< 1 Hour on Weekday	5/6	0.02

Real-Life Measure of Social Media Effects

To calculate a 'real-life' measure of social media effects we first examined what sort of effects would be large enough to cause a noticeable difference in an adolescent's wellbeing. We used Norman et al. (2003) inform that any 0.5 Standard Deviation change in self-reported well-being would be counted as a 'noticeable difference'.

We focused on MCS data with time spent on either weekend or weekday as the technology use measure, for ease of calculation.

First we re-ran our SCA models for the MCS (UK) data with all variables standardised except the technology use measure. We took their median (effect = -0.0079). We also examined the most negative specification (effect = -0.45; SDQ, time spent on weekday, no controls).

To obtain how much time an adolescent would need to report spending more on technology to have a 0.5 SD change in their wellbeing we took the absolute value of 0.5 divided by the effect of interest.

If we take the median of all effects of time spent in MCS data we find that this is 63.52 hours. If we take the maximum effect found in the specifications, we find that this decreases to 11.23 hours.