COVID Information Commons (CIC) Research Lightning Talk

Transcript of a Presentation by Joshua Hartshorne (Boston College), July 15, 2022

Title: A "Citizen Science" approach to COVID-19 social distancing effects on children's language development

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YouTube Recording with Slides

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Transcript

Joshua Hartshorne:

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Thanks very much for having me. So everything I'm going to talk about and more are in these two manuscripts. I think this is going to be you know available on YouTube so you'll be able to look those up later.

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So a number of well-known predictors of poor child development outcomes such as watching a lot of TV or playing video games, childhood obesity, not being talked to very much - so there's correlation [to] school success in terms of how much your parents talked to you when you were little. And a lot of public policy has been very inspired by these correlations and involve trying to intervene on parents to get the parents to change, essentially, their parenting practices.

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So, for instance, you see guides on how to control screen time -

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or get your children exercising more.

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Or in this viral clip from the the last presidential cycle:

[Clip of Joe Biden speaking] We have to make sure that every single child does in fact have - three, four, and five-year-olds go to school. School, not day care, school. We bring social workers into homes and parents to help them deal with how to raise their children. It's not that they don't want to help - they don't want - they don't know quite what to do. Play the radio, make sure the television, excuse me, make sure you have the record player on at night, the phone. Make sure the kids hear words.

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Joshua:

So Joe Biden got a lot of flack for suggesting that parents should be playing their record players or possibly phonographs. But what was interesting to me was how much there wasn't pushback on [the] really deep assumption here which is that these are basically cultural problems with cultural solutions. As opposed to - there's another hypothesis that's been floating around for a while but has made much less of an impact on public policy. [That] these are actually resource problems with resource solutions.

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So I was first, or, so - a particularly nice, you know, exposition is in this 2005 Margaret Talbot article in The New Yorker that was about Provide Speaks, or, Providence Talks, I believe. Which, actually, was a program in which they were sending social workers into low SES households to teach the parents to talk to their kids more. A quote that I want to point out here is: "Richard Weissbourd, a senior lecturer at the Harvard Graduate School of Education, helped establish a campaign in Boston that urged parents to talk to their kids, and he organized focus groups with low-income parents. 'You had some people working three jobs or dealing with a steady drizzle of helplessness and hopelessness,' he recalled. 'That makes it hard to have vibrant conversations with a baby. They'd say, 'Look, when I get home, I have to clean and cook and do the laundry.' They're exhausted. They'd say, 'Sometimes we have to put our kids in front of the TV.' Weissbourd said of interventions like Providence Talks, 'Maybe we have the model wrong. Maybe what we need to do is come in and bring dinner and help with the laundry and free up a parent to engage in more play with their child.'"

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So again, to summarize this, you know, hypothesis one is that parenting practices feeling is that screen time leads to more screen time. And more screen time leads to obesity, nearsightedness, behavioral disorders, and so on. But it's also possible that screen time is really a symptom. So low familial resources lead to more screen time and also obesity, nearsightedness, behavior disorders, etc. So intervening on the screen time itself is not actually going to do anything. And obviously to test this you need to do a

manipulation study. Now that's very hard to do; these are hard variables to manipulate. One of the outcomes, actually, at Providence Talks was they just weren't able to get parents to talk to their kids more, which is interesting in its own right. But COVID manipulated the family resources for us, right? So it took a whole bunch of people and not entirely irrespective of SES and race, but still more cleanly than usual, you know, affected people sort of across the board in terms of what sort of family resources they had. Particularly through school and daycare closures, loss of social support and networks and babysitters, things like that. And for some folks [the pandemic] increased work at home.

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So here's a schematic of my own household. So my daughter turned two just before the pandemic. She wasn't really a TV watcher at the time. And then the daycare closed and suddenly she was watching, you know, Frozen like three or four times a day. And then my mother-in-law came to stay with us for a few months and we were back to not watching any TV. And she had to go home and we were back to watching lots of TV. And then my mother came to stay with us and the screen time went back down again. Then she left but then daycare started again. Now we're back down to not a whole lot of TV. Now this is what we call an N=1 experiment. So we wanted to see how this generalized.

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And fortunately there were a lot of data sets. We were able to get a hold of that had relevant data so we used data from the Kaiser Health Tracking Polls, AP-NORC, the COVID Impact Survey, Understanding America Survey, our own survey that we're running, and also Reelgood Streaming Data. So Reelgood is a streaming aggregator and search service. So they had, you know, real time roughly geolocated data on how much people are watching child-oriented television and movies and whatnot.

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So this is from our Reelgood data. So the actual ground truth streaming data. And you can see all the schools closed within about one week. Daycares were a bit more variable and there's just not good data on that but it appears they were [closed] mostly around that time period. And you can see a real spike in increase, like a big increase in screen time, immediately afterwards. But, of course, lots of other things were going on at the same time. You might think, well, maybe people were watching more TV because they were sick with COVID.

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And that actually didn't track COVID rates all that particularly well. In particular, if you look at these numbers, so we see screen time rising rapidly in March. And in March as a first approximation nobody in America had COVID, right? It was quite rare and located in just a few places.

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There was actually no time - so you can see here on the left the increase in streaming by, you know, like March 16th. There's quite a lot all around the country but only a few places in the us with some COVID. And at no point in our time period that we're looking at was there a correlation base of state COVID rates and state screen time increases.

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So also, people are spending more time at home, obviously This is based on google mobility data. It's you know more close to time locked to those closures when it starts, right? Of course, we knew that the school is closed - when all the workplaces - a lot of workplaces closed. But then you see, it's sort of decoupled after that.

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We also looked at parental mental health. And again there was not a tight relationship. I mean, we know that the parents' mental health got worse after the schools closed, but again, it was not tightly locked.

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And in fact we were able to, in some of these surveys, find that screen time increased greater for parents who lost child care relative to those who didn't. In fact screen time increased and probably increased in proportion to the extra hours of child care that parents were reporting. We saw this across the number of data sets.

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You may think, well, what about on the other side when school reopened? Here, I have increase in screen time by schooling policy. And you can see the kids who are online reading, the most recreational screen time - this is not come to school screen time. And the kids who are in-person schooling had the least increase in recreational screen time. And we saw that across a number of data sets.

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We also actually instantly looked at parental mental health because there was this report that parent mental health was worse.

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So you can see this in the Kaiser data, for instance. So the red and green are reporting more impact of just the pandemic on mental health by parents. This is for parents who reported having lost child care.

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You can see a much smaller effect for parents who do not report losing child care and in fact they look identical to non-parents. So the parent mental health effect was really specific to losing child care.

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And we can see this in the Understanding America data. Here again we have parent mental health - so up, here, is bad. Mental health was best for the parents whose kids were in-person schooling and worse for those who were online with hybrids somewhere in between. Census Household Pulse data actually allows us to look at [the] number of days of hybrid schooling that are - that have a live teacher. So we don't know if this is in person or not but just how many days of teacher they had. The more of that, the better the parents' mental health.

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So, in conclusion, screen time variability can be driven by child care resources. Screen time and parental stress- you can make it look as, with screen time in particular, an adaptive response, right? So it's something that is actually helping parents cope. And trying to take it away from overburdened parents may actually just make the problem worse. This also suggests that cultural innovations may have a limited effect. It wasn't that sometime in March every parent suddenly forgot screen time was bad, right? It had - presumably parents' beliefs about parenting didn't change. Their ability to act on them changed. So, some caveats of course COVID times are not normal, right? So this may or may not generalize to all the rest of the time. And also screen time and stress may have their own negative impacts that may be something that we do want to treat even if we don't believe that treating them will actually solve the real problem.

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And that gets us back to maybe we just had the model wrong. Maybe what we need to do is come in, bring dinner, help with laundry, free up a parent to engage in more play with their child. All right, thank you.