

PEDIAPOD DECEMBER 2021 TRANSCRIPT

Geoff Marsh

Hello and welcome back to PediaPod. This month, associations between mothers' and children's media use and early childhood development.

There is a growing body of evidence showing that excessive early media use is detrimental to children's physical and mental health. In early childhood, children reach crucial developmental milestones and it's thought that media exposure, amongst other aspects of their environment may hinder this sensitive process. As such, the World Health Organization guidelines suggest that screen time for infants should be limited to a maximum of one hour per day. However, with the growing ubiquity of digital media, it's thought that preschoolers are now exposed to more than two hours of screen time per day. And with the rapidly changing nature of digital media use, it's not yet clear how this is affecting different aspects of early childhood development. The evidence to date has been increasingly mixed.

In this episode, I speak to medical student Clarissa Schwarzer, who's doing her doctoral thesis on early childhood development and media use by children and mothers at Leipzig Research Center for Civilization Diseases. She started by telling me how this field has tried to keep up with the technological landscape.

Clarissa Schwarzer

When we talk about digital media in children, we first have to know that digital media has changed a lot during the last decade. So for a long time there has only been the TV, but now since there are so many developments in terms of new devices such as tablets, smartphones, etc, children are now able to interact with the digital world as well. So it's not only that they use digital media passively, but that they are able to get involved with the digital world. There is research that has been done on digital media use in preschoolers and its impact on language development, as well as on cognitive development. Most of the research that has been done shows that there are detrimental effects on cognitive and language development of children. However, there is also growing evidence that there are positive aspects of digital media use also, when it comes to cognitive development, language development, as well as social emotional development in children.

Geoff Marsh

That's what makes this such a difficult field to stay on top isn't it. First of all, it is the speed of the change of the technology, but it's also, as you say, suddenly we are seeing some positive things as well as negative things...

Clarissa Schwarzer

Yes, and especially in Germany, I see that the discussion that is going on about digital media use in children, it's very much about pros and cons in a very emotional way, that this topic is discussed. We see now that we cannot shut the digital world out. Digital devices are everywhere in families nowadays. The reality is that most children interact with digital devices every day.

Geoff Marsh

Now let's move on to your study. Obviously, a lot of that previous work just looks at children's media use, but you are also interested in the parents' media use as well, and any associations there.

Clarissa Schwarzer

There is a growing body of evidence that parents, and mothers especially, function as a role model for children's media use as well as they play an important role in mediating children's media use. Also, we think that when interacting with digital media, mothers have less, you know, opportunities and also resources for interacting with their children.

Geoff Marsh

So the mothers' or the parents' media use might actually just be sort of displacing those other positive interactions?

Clarissa Schwarzer

Yes. There is research that has shown that media usage in parents does displace opportunities for parent-child interactions, and that parents, when they use digital media very often when interacting with children, they are less attentive, more passive, and more aggressive also in reacting to their children.

Geoff Marsh

And now I believe to answer this question, you're pretty well placed, physically, in Leipzig University to ask questions like this because you're got access to this LIFE-Child study at Leipzig University. For anyone who doesn't know about that, tell us what that is and what makes it a useful cohort.

Clarissa Schwarzer

The LIFE-Child study is based at the Leipzig Research Center for Civilization Diseases at Leipzig University. It is a population-based cohort study that follows children from pregnancy to early adulthood and seeks to investigate lifestyle factors and environmental factors on children's health, as well as on the development of civilization diseases. So children that take part in our study, they come every year for assessment, like urine samples and blood samples. But we also do testing, like motoric testing, and also developmental testing. And we have a whole lot of questionnaires that we give to children and their parents to be answered. So we use that for our data analysis.

Geoff Marsh

So you get the parents to self-report these questionnaires about their media use and their children's media use, and then you also measured various aspects of those children's early childhood development?

Clarissa Schwarzer

So the development test we used for our cohort was a standardized development test for young children focusing on the domains of body motor development, fine motor development, cognitive development, as well as social-emotional skills and language skills. Then we ranked the children in

percentile ranks and then we had a very differentiated idea about the developmental skills of those children.

Geoff Marsh

And so tell us about your results. I think the first thing, that was pleasing to read, was that on average, German preschoolers were all within the WHO recommended limits of screen time. That's nice.

Clarissa Schwarzer

Yes, yes. For me it was actually surprising to see that because research that has been done in the US, for example, shows that preschoolers use digital media for about two and a half hours every day. And also, former studies on preschoolers in Germany, rather shows that they use more than 60 hours of media every day.

Geoff Marsh

Well, I suppose you're also quite lucky that not everyone did that. Otherwise, it would have been quite a boring study, wouldn't it?

Clarissa Schwarzer

Yeah, that's true. So about 24% of our children showed a high media usage.

Geoff Marsh

The other finding, which I suppose corroborates previous work, was that those higher screen times were associated with poorer outcomes in the cognition, language and social emotional skills.

Clarissa Schwarzer

It was what we expected. What was surprising was that we did not find any associations between body motor developmental skills and high media usage in children. However, when we look at the differences between children that showed a high and a normal media usage and their developmental outcomes, I found it astonishing that children with high media usage scored 10 points or more lower than children with normal media usage on the percentile ranks of cognition, language and social emotional skills.

Geoff Marsh

Why don't you think motor skills were associated with screen based media use?

Clarissa Schwarzer

Maybe because children were physically active, even though they showed a high media usage, or probably because they used mobile, transportable devices more often, so it wasn't detrimental to their body motor skills.

Geoff Marsh

And you also were interested in the mother's screen use as well. How did the mother's screen-based media use relate to those childhood outcomes?

Clarissa Schwarzer

There we did not find any significant associations. However, our data showed that children from mothers that showed a high media usage were four times more likely to show high media usage, too. So we cannot say that there are direct associations, but indirectly, we can see that as role model or mediators, mothers are very important for media usage in children.

Geoff Marsh

And then the other aspect with regards to the mothers that you were looking at was that parent-child interaction. And that almost seemed to have the opposite effect to screen-based media use- that was just a force for good.

Clarissa Schwarzer

Yeh that's true. So our data showed that more frequent parent-child interactions were associated with better body motor skills, better language skills, social emotional skills and cognitive skills. Then we were interested to look at whether parent-child interactions can moderate the effects of high media usage in children with their developmental outcomes. But we did not find any moderation effect.

Geoff Marsh

So we have no evidence for the notion we were discussing earlier about the screen based media use displacing some of those positive interactions, we can't really say that?

Clarissa Schwarzer

No. And we cannot say that the positive parent-child interactions somehow make up for the negative effects of high media usage in children.

Geoff Marsh

Yeah, the parent-child interactions and the media use both seem to be independent of one another.

Clarissa Schwarzer

Yes. However, the negative point about this questionnaire we used for parent-child interactions is that it did not assess parent-child interactions during media usage or media usage during parent-child interactions, and it did not assess which caregiver was interacting with the child. Also it did not assess the durations of parent-child interactions.

Geoff Marsh

I've always thought that with these sorts of studies, what we really need is for some parents to be okay with cameras in the home...

Clarissa Schwarzer

Yes, I think so. That is really a weak point of the study, that we had to rely on the questionnaires and we did not have the real screen times of children. Definitely there is some self-representation bias in there. But what I've seen is that there are aims to get more accurate data on screen time in children and

parents, by installing apps on tablets or smartphones to really assess the real screen times. But that's something for future research.

Geoff Marsh

And I looked at the timing of your sampling, and it was right before the pandemic, wasn't it? I do wonder whether the picture with regards to screen use has changed, has it increased, do you think since the pandemic?

Clarissa Schwarzer

I think that's a very important question. There is already some research that shows that the media usage has gone up because of the pandemic, and also that children were engaged less with physical activity due to the pandemic. However, I think what is also good to know is that parents read to their children more often due to the pandemic- that was also found in recent research on media usage and the pandemic.

Geoff Marsh

So this study is just yet another bit of evidence to throw into the pile of quite a complicated picture in this field. What do you think the take home messages are from this study? And what do you think remains to be answered?

Clarissa Schwarzer

So what I think our study underlines is that parents are the key, somehow, to guide children's media usage in a smart and healthy way. We need to educate parents in the way that they keep in check with their own media usage, and be aware of their role as role models for their children. But also teach them smart ways to use digital media with their children. All in all, there should still be enough focus on the good, old face to face interactions between parent and child.