

‘KIDS THESE DAYS!’ A META-ANALYSIS OF CHANGES OF ATTENTION PROBLEMS IN REPRESENTATIVE SAMPLES OF CHILDREN

Boglarka Vekety¹, Alexander Logemann², John Protzko³, & Zsafia K. Takacs⁴

¹*Institute of Education, ELTE Eötvös Loránd University, Budapest (Hungary)*

²*Institute of Psychology, ELTE Eötvös Loránd University, Budapest (Hungary)*

³*Psychological Science, Central Connecticut State University (USA)*

⁴*School of Health in Social Science, University of Edinburgh (UK)*

Abstract

It is a common belief that the attention of new generations of children is in decline (Protzko & Schooler, 2019). However, such devastating claims about new generations are challenged when inspecting the evidence (Protzko, 2020). The current meta-analysis aimed to explore comprehensively whether attention problems have increased, decreased, or remained unchanged among children over the past decades. Findings allow us to determine whether there has been any problematic development of attention among children.

Studies that used the Child Behavior Checklist (CBCL) with representative samples of 1.5-14 year-old children were systematically searched in multiple databases (i.e., Web of Science, Scopus, Google Scholar, PubMed). Informants varied between studies (i.e., teachers, self, parents), but parent-reported data was dominant.

Preliminary results from the meta-regression analysis of raw scores from 22 studies showed no change in reported attention problems over the past decades ($b_{year} = -0.009$, $p = .72$; 95%CI = -0.06 to 0.04). However, when mean age of children was analyzed in interaction with the year of data collection, we found that attention problems have increased with age over the past decades ($b_{year \times age} = 0.007$, $p = .01$; 95%CI = 0.002 to 0.011). When analyzing the percentage of maximum possible scores from the same 22 studies, there was an increase in reported attention problems over the past decades for all children ($b_{year} = 0.4493$, $p = .03$; 95%CI = 0.03 to 0.87), regardless of age ($b_{year \times age} = -0.0022$, $p = .35$; 95%CI = -0.07 to 0.02). These findings show that attention problems among children are increasing, and school-aged children might be especially at risk. A possible explanation of these results might be that children usually spend more time on screen from year to year (e.g., surfing on the internet, playing online games, using social media, media multitasking) which might have had a negative effect on their attention regulation skills in the last decades (Moisala et al., 2016; Rideout et al., 2010).

Keywords: *Meta-analysis, attention problems, children, mental health, representative samples.*

1. Literature Background

Attention problems are often experienced among children in both educational and clinical practice (Koch, 2016; Närhi et al., 2017; Schonert-Reichl & Lawlor, 2010). Although, inattention can be a typical and age-appropriate sign of immature self-regulation among children and adolescents, it is a common belief that the attention of new generations of children is in decline (Protzko & Schooler, 2019, 2022). It is conceivable that the commonly used term ‘Kids these days are more inattentive!’ is not necessarily based on objective data, but on subjective beliefs. Such subjective beliefs can be erroneous because of a memory bias in which people tend to project their current qualities onto the youth of their past, and also the tendency that people easily notice the limitations of others in something they have already mastered (see Protzko & Schooler, 2019).

Interestingly, contrary to the belief that new generations decline, a previous meta-analysis found that children’s ability to delay gratification, measured by the famous ‘Marshmallow Test’, has actually improved over the past few decades (Protzko, 2020). This means that children today can resist rewards for a longer time than they did 50 years ago, which might be mainly due to an increase in intelligence caused by the number of years children spend in education, an improvement in the living standards of families, and an increase in parents level of education. Along with these positive changes in self-regulation, one might think that attention problems decrease. However, there have been certain

changes in our environment and habits over the last decades which could have negatively affected our attention and cause an increase in attention problems.

From the growth of digital devices and information technology becoming an integral part in the lives of people, our environment and habits have incrementally changed. Reports from all over the world state 70-80% of the 5- to 16-year-olds have internet access in their own room, own a smartphone, and spend 3-3.5 hours per day gaming, using social media, and/or watching videos (Childwise, 2020; Konca, 2021; Pew Research Center, 2020). Furthermore, interactive touchscreen devices have become key components of young children's lives as well, having their first experience with this technology before the age of two (Dardanou et al., 2020). Digital devices can offer a lot of educative benefits—but they can also be harmful, depending on children's individual characteristics and the context in which use occurs (Vedechkina & Borgonovi, 2021). Generally, excessive passive screen time has been reported to have many potential adverse associations among children, such as sleep disturbance (Lissak, 2018), stress (Khan, Lee & Horwood, 2022), attention problems (McDaniel & Radesky, 2018), internet/gaming addiction (Montag & Elhai, 2020).

Based on these previous findings, we could not assume if attention problems would increase, decrease, or stagnate over time, as all possibilities appeared equally likely. No meta-analysis regarding cross-temporal changes in children's attention problems has been performed thus far. Hence, the purpose of the present meta-analysis was to thoroughly examine the validity of the 'kids these days' effect by exploring whether attention problems have increased, decreased, or stagnated among children over the past decades.

2. Methods

A systematic search was conducted in multiple databases (i.e., Web of Science, Scopus, Google Scholar, PubMed) to identify studies to be included in the meta-analysis, as part of a larger meta-analysis studying the reported changes in behavior problems in the last decades. We chose a classical measure of behavior problems, the Child Behavior Checklist (CBCL; Achenbach & Edelbrock, 1983), which has been used to measure such problems reported by the parents, teachers, and children themselves for approximately 50 years. Our inclusion criteria for the current study were: (i) the study used the Attention problems subscale from the CBCL as an outcome measure and reported the raw means (M) and standard deviation (SD); (ii) all children in the sample were 14 years or younger; (iii) the sample of the study was representative or population-based. Studies were excluded in case the sample was an atypically developing subsample derived from a representative sample.

Each included study was coded for CBCL Attention problem subscale raw M and SD, sample size, country of data collection, mean age of children in the sample, and year of data collection. In case the year of data collection was not reported, studies were coded as collected two years prior to publication year. Coding was done by two independent coders (lead author and research assistants). POMP (Percentage of Maximum Possible Scores) scores and standard deviations were calculated from raw M and SD because the earlier and older versions of the CBCL had different maximum points.

3. Results

Preliminary results from the meta-regression analysis of raw scores from 22 studies showed no change in reported attention problems over the past decades ($b_{year} = -0.009$, $p = .72$; 95%CI = -0.06 to 0.04). However, when mean age of children was analyzed in interaction with the year of data collection, we found that attention problems have increased with age over the past decades ($b_{year \times age} = 0.007$, $p = .01$; 95%CI = 0.002 to 0.011), meaning that older children were reported to have an increasing tendency in attention problems from 1983 until 2017. When the POMP (percentage of maximum possible) scores were analyzed from the same 22 studies we found that attention problems significantly increased with the year of data collection over the past decades ($b_{year} = 0.4493$, $p = .03$; 95%CI = 0.03 to 0.87) regardless of children's age ($b_{year \times age} = -0.0022$, $p = .35$; 95%CI = -0.07 to 0.02). These results mean that children are reported to have an increase in attention problems over time, and school-aged children might be at risk for such problems. It is important to note, that informants varied between the 22 included studies (i.e., teachers, self), but parent-reported data was overrepresented.

4. Discussion

Findings of this cross-temporal meta-analysis showed that attention problems have increased among children from the 1983 until 2017. A possible explanation of these results might be that children usually spend more time on screen from year to year and usually engage in digital multitasking which

might have affected their attention regulation skills in the last decades (Rideout et al., 2010). Findings of this meta-analysis are somewhat in contrast with the increasing ability to delay gratifications (Protzko, 2020). However, in this previous meta-analysis only studies with children under 10 years were included. Even though attention seems negatively affected, it seems that other processes such as delay of gratification may be spared or even benefit. Future research is required about the direct and longitudinal effects of digital devices and information technology on children's attention, considering children's individual characteristics and the context usage occurs.

Moreover, findings highlight the need for interventions, such as mindfulness, to support children's attention regulation skills.

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