



Minerva Access is the Institutional Repository of The University of Melbourne

Author/s:

Day, K;Shin, W;Nolan, S

Title:

Children's reading and screen media use before, during and after the pandemic:
Australian parent perspectives

Date:

2024

Citation:

Day, K., Shin, W. & Nolan, S. (2024). Children's reading and screen media use before, during and after the pandemic: Australian parent perspectives. *Communication Research and Practice*, 10 (1), pp.1-15. <https://doi.org/10.1080/22041451.2024.2322810>.

Persistent Link:

<https://hdl.handle.net/11343/344673>

License:

[CC BY-NC-ND](#)



Children's reading and screen media use before, during and after the pandemic: Australian parent perspectives

Katherine Day, Wonsun Shin & Sybil Nolan

To cite this article: Katherine Day, Wonsun Shin & Sybil Nolan (09 Apr 2024): Children's reading and screen media use before, during and after the pandemic: Australian parent perspectives, Communication Research and Practice, DOI: [10.1080/22041451.2024.2322810](https://doi.org/10.1080/22041451.2024.2322810)

To link to this article: <https://doi.org/10.1080/22041451.2024.2322810>




© 2024 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group.



Published online: 09 Apr 2024.



[Submit your article to this journal](#) 



Article views: 55





[View related articles](#) 



[View Crossmark data](#) 



Children's reading and screen media use before, during and after the pandemic: Australian parent perspectives

Katherine Day ^a, Wonsun Shin ^b and Sybil Nolan ^a

^aPublishing and Communications, The University of Melbourne, Parkville, Australia; ^bMedia and Communications, The University of Melbourne, Parkville, Australia

ABSTRACT

This study investigates the impact of the COVID-19 pandemic on children's mediascape through a repeated cross-sectional study involving primary caregivers of children aged 7–13 in Australia. Survey 1 was conducted as COVID-19 lockdowns ended in 2021, to examine how extended lockdowns had affected children's reading habits and screen media usage and how parents had adapted their media supervision and guidance strategies. Survey 2 was carried out one year later to gain insights from the post-pandemic period. The data revealed that the pandemic and lockdowns had led to a substantial increase in children's ownership and usage of digital devices. In contrast, children's personal ownership of traditional books and e-book readers had declined, and digital books were less popular than other digital content. Parents, who expanded their involvement in active mediation and media co-use during the pandemic, largely reverted to monitoring and restricting their children's media activities after it.

ARTICLE HISTORY

Received 16 November 2023
Accepted 21 February 2024

KEYWORDS

COVID-19; children; screen media; books; parental mediation; cross-sectional survey

Introduction

The COVID-19 pandemic and its extended lockdowns presented unprecedented challenges and transformations for many Australian families. Children were forced to give up many out-of-home activities for months at a time, including organised sports and outdoor play with friends. Bookshops and libraries closed their doors to readers for long periods; sales and lending continued but they did so remotely (Nolan, Day, Shin, & Wang, 2022). Consequently, children became heavily reliant upon screen media to compensate for the lack of social engagement opportunities (Baxter, Budinski, Carroll, & Hand, 2020). This transition was observed to affect parenting practices, leading parents to relax their rules about their children's screen media use (Rhodes, 2020), while investing additional time in shared media experiences with their children (Baxter, Budinski, Carroll, & Hand, 2020).

While previous studies examining the pandemic's impacts on children's media usage and corresponding parenting strategies have focused predominantly on screen media, little is known about how the pandemic affected children's engagement with books, an essential component of their media diet (Ahn & Nelson, 2019). Furthermore, previous

CONTACT Wonsun Shin  wonsun.shin@unimelb.edu.au

© 2024 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group.

This is an Open Access article distributed under the terms of the Creative Commons Attribution-NonCommercial-NoDerivatives License (<http://creativecommons.org/licenses/by-nc-nd/4.0/>), which permits non-commercial re-use, distribution, and reproduction in any medium, provided the original work is properly cited, and is not altered, transformed, or built upon in any way. The terms on which this article has been published allow the posting of the Accepted Manuscript in a repository by the author(s) or with their consent.

research focusing on screen media and the pandemic has tended to treat screen media as a single, homogeneous category, limiting our understanding of how children used different types of media such as television, smartphones, tablets and e-readers during the pandemic. More importantly, there is a significant knowledge gap regarding the state of children's media consumption in the post-pandemic era, because most prior studies have focused on children's media consumption and parental mediation at the time of the pandemic lockdowns. To acquire a comprehensive understanding of the pandemic's enduring impact on children and their media practices, and of the corresponding evolution of parenting approaches, it is necessary to consider both short- and long-term effects of the pandemic on the family mediascape.

Through the analysis of two national surveys reflecting Australian parents' views on their children's media use and parental media intervention at different stages of the pandemic, this study aims to advance our understanding of how the pandemic has affected and reshaped family media dynamics. To address this overarching research aim, we examined how children's access to and utilisation of a broad spectrum of media, including books and varying types of screen media, underwent transformation across three distinct phases: before, during and after the pandemic. We also investigated how parents adapted their strategies to influence children's media consumption over time. We expect our study to provide valuable insights into the evolving landscape of family media dynamics in the wake of the COVID-19 pandemic.

In keeping with prior parenting research (Shin & Lwin, 2019), this study adopts a broad view of 'parent', which refers to a primary caregiver who is responsible for raising and caring for a child. This includes not only natural but also adoptive and de facto parents. The present study uses 'parent' and 'caregiver' interchangeably to refer to the primary caregiver of a child.

COVID-19 and children's mediascape

Prior research into the impact of the COVID-19 pandemic on children's media use has concentrated primarily on the extent to which their screen time changed. The consensus has been that children's screen time significantly increased, as reported in studies conducted in various countries such as the USA (e.g. Jennings & Caplovitz, 2022), Turkey (e.g. Eyimaya & Irmak, 2021) and across 12 different European countries (Bergmann et al., 2022). A meta-analysis of 89 studies comparing screen time before and during the pandemic confirmed that the amount of time children aged 6–10 spent on screen media increased by 1.4 hours per day (Trott, Driscoll, Irlado, & Pardhan, 2022). In Australia, a survey of over 2,000 parents conducted in June 2020, four months after the government declared the COVID-19 pandemic, showed that 51% of parents reported an increase in their children's screen media use compared to the pre-pandemic period (Rhodes, 2020).

However, as most prior studies examined screen media use as a single, homogeneous category, research focusing on different types of media has been scant, with a few notable exceptions. A survey conducted in the USA revealed that children's use of tablets, smartphones and game consoles increased during the pandemic by 13%, 8%, and 6%, respectively (McClain, 2022). A meta-analysis of global changes in children's screen time before and during the pandemic also indicated that time spent on personal computers and handheld devices increased by 46 minutes and 44 minutes per day, respectively

(Madigan, Eirich, Pador, McArthur, & Neville, 2022). Although these studies provide useful insights into children's use of different forms of media technologies during the pandemic, they focus on a limited number of digital devices. Given that children today engage with a wide range of screen media simultaneously, including traditional screen media like television, as well as smartphones, tablets, game consoles and e-readers (Soldatova, Chigarkova, & Dreneva, 2019), the limited research on children's use of specific media technologies before, during and after the pandemic warrants new research.

Another gap in the research relates to books. Books convey information and narratives through text and illustrations, making them an integral part of children's media consumption and valuable tools for learning (Ahn & Nelson, 2019). Children's literature is often understood as a public good (National Children's Book Literacy Alliance, 2023), and children's books are seen as an antidote to screen time – a different experience in the mediascape but a constituent element of it. In particular, the preference for narrative-driven books in printed format has been well documented (Stanica et al., 2019). The printed format is perceived as a superior format for illustrations and a shared reading experience between caregivers and children, with social, cognitive and literary comprehension advantages (Wheeler & Hill, 2021). Reading on digital devices such as tablets and iPads, which might include AR features that scaffold the text and promote independent reading interactivity, tends to be reserved for educational purposes. E-readers, mostly used for PDF files of the original printed text, offer no amplification of the text via AR or audio features, but promote independent reading, which reduces the documented shared reading experience of traditional printed books noted above (Bai, Zhang, Chen, Cheng, & Zhou, 2022).

While industry data indicates a significant increase in the sales of children's books in the year after pandemic lockdowns ended (Books+Publishing, 2023), little is known regarding children's access to and consumption of books over time *in relation to* their use of other forms of media in the pandemic context. Consequently, our understanding of children's engagement with books as part of their media consumption before, during and after the pandemic is limited.

The role of parents in children's media use

Parents play crucial roles in facilitating children's acquisition and development of the knowledge and skills necessary for social functioning by managing their children's social environment, including their media environment (Shin & Lwin, 2019). Numerous studies have demonstrated that parental media intervention strategies, also known as *parental mediation*, influence children's media use, mitigating negative media impacts on children while enhancing positive aspects of their media use (Chen & Shi, 2019). Prior research has demonstrated that parents employ various media intervention strategies to regulate children's media consumption, such as discussing media-related issues with their children (i.e. active mediation), limiting media access (i.e. restrictive mediation), sharing media experiences with children (i.e. co-use) and checking on children's media activities (i.e. monitoring) (Livingstone & Helsper, 2008; Shin & Lwin, 2019). In addition to direct media supervision through parental mediation, parents also influence children's media usage and act as 'gatekeepers' by controlling resources available to children, i.e. deciding how much money to spend on children's media (Plunkett, 2019).

During the pandemic and ensuing lockdowns, parents and children were forced to stay at home for extended periods, and much of children's media use took place within the home environment (Jennings & Caplovitz, 2022). Parents faced difficulties in limiting their children's screen media time because children had to rely on digital devices for schoolwork and other activities, while parents themselves were also working from home (Sciaccia, Laffan, Norman, & Milosevic, 2022). To adapt to this new situation, parents seemed to favour engaging in conversations with their children (active mediation) rather than relying solely on establishing rules or restricting children's access to media (restrictive mediation). According to a survey conducted across 15 European countries during the COVID lockdowns, 46.7% adopted active mediation more frequently than before the lockdowns, whereas 38.4% reported using restrictive mediation more often (Sciaccia, Laffan, Norman, & Milosevic, 2022). Additionally, several public surveys revealed that parents became less restrictive about their children's media use. For instance, Ofcom (2021) showed that four in ten parents of children aged 5–15 in the UK struggled to control their children's screen time during the pandemic, with approximately half of parents relaxing some of their rules regarding their children's online media use due to increased time spent at home. In Australia, a survey of 2,018 parents in 2020 indicated that parents had relaxed their rules about children's screen media use since the first lockdown (Rhodes, 2020). Pew Research also demonstrated that, across the two years of the pandemic, parents in the USA were less likely to limit the time and duration of their child's screen media usage in 2021 (78%) compared with 2020 (86%) (McClain, 2022).

Overall, prior studies suggest that the challenges posed by the pandemic led parents to adjust their media intervention strategies, spending more time on media-related conversations while relaxing their restrictions. Additionally, the increased time spent together during lockdowns led to greater media co-use, such as parents playing online games with their children (Baxter, Budinski, Carroll, & Hand, 2020). However, these studies primarily focused on how parents managed their children's *screen time*, with several exceptions in non-pandemic contexts (e.g. Ahn & Nelson, 2019; Strouse, Newland, & Mourlam, 2019), leaving unanswered questions about how parents contributed to their children's engagement in book reading, especially in times of crisis. Since children's early reading experiences tend to be scaffolded by their parents, contributing to the interaction between parents and children in the broader family media environment (Wheeler & Hill, 2021), it is important to give more attention to research on parental roles in children's book reading during the lockdowns and after they ended.

The present study

The prolonged lockdowns in Australia are believed to have reshaped the media landscape for children, leading to significant challenges and changes in how parents manage and intervene in their children's media activities. Have these practices continued to change after the lockdowns, and if so, how? Our study set out to answer this question by investigating the evolution of children's media use and parental involvement during the pandemic and comparing any changes with the pre- and post-pandemic periods. While previous research on parental media intervention has largely centred on managing children's screen media use in general, it is important to recognise that books are a crucial component of children's media experiences, and that screen media encompasses various

types and formats. Our study examines both children's book reading habits and their use of diverse forms of screen media to provide a comprehensive overview of their mediascape, addressing the following research questions.

RQ1. How did the COVID-19 pandemic and lockdowns affect children's ownership and consumption of books and screen media in Australia?

RQ2. How did the COVID-19 pandemic affect parental involvement in children's book reading and screen media usage in Australia?

Method

To address these questions, we conducted a repeated cross-sectional study involving two national online surveys of parents residing in Australia. The first survey (Survey 1) was conducted in October 2021, shortly after the extended pandemic lockdowns in most Australian states had either just ended or were about to end. This survey explored how parents of children aged 7–13 perceived the overall impacts of the pandemic, specifically the lockdowns, on their children's reading habits and screen time, as well as the way they implemented parental mediation strategies. The second survey (Survey 2) was conducted in November 2022, one year later, to investigate whether and how the pandemic continued to affect children's media usage and parental mediation strategies.

For both surveys, we engaged Qualtrics to recruit survey participants. The sample for each survey was drawn from Qualtrics' online panel of adults who identified themselves as parents or primary caregivers of children aged 7–13 (Survey 1) and 7–14 (Survey 2). In Survey 2, we included the extra year (14) accounting for the time between surveys, with the aim of providing further granularity and capturing the age increase and any changes in multimedia use it might convey. A total of 513 primary caregivers for Survey 1 and 500 for Study 2 completed the corresponding surveys. For the present comparative study, we created a repeated cross-sectional dataset (Rafferty, Walthery, & King-Hele, 2015) by excluding 66 respondents from Survey 2 whose children were aged 14, to ensure we were able to assess changes within the same group of parents (i.e. those with children aged 7–13) independent of the increased year. As a result, our final dataset for the current study comprised 947 parents with children aged 7–13, consisting of 513 from Survey 1 and 434 from Survey 2. The respondents for the two surveys were comparable in terms of the key demographic characteristics, as displayed in [Table 1](#).

Before answering questions about children's reading and screen media use and parental mediation, respondents were given our definitions of books and screen media. We also provided definitions of different time periods as follows:

- 'Before the lockdowns' refers to the period before 23 March 2020. On that day, the state Premiers and the Prime Minister announced the closure of non-essential businesses including bars, cinemas, gyms and food outlets (except for takeaway). Social distancing was enforced, and local travel was restricted. Places of worship were closed, and large weddings, funerals and gatherings were banned. Most states

Table 1. Demographic profiles of survey participants (%).

	Survey 1 (N = 513)	Survey 2 (N = 434)*
Child's age		
7	11.7	15.0
8	15.4	17.7
9	12.5	13.6
10	14.4	13.8
11	13.6	13.8
12	16.4	11.3
13	16.0	14.7
Child's gender		
Male	54.8	53.0
Female	45.2	46.5
Non-binary	0.0	0.5
Annual household income		
Under \$25,000	4.7	6.0
\$25,001–\$49,999	8.4	14.1
\$50,000–\$74,999	12.3	15.0
\$75,000–\$99,999	15.0	15.4
\$100,000–\$149,999	30.6	24.2
\$150,000 and above	22.2	21.0
Prefer not to answer	6.8	4.4
States		
New South Wales	30.4	34.8
Victoria	30.8	25.6
Queensland	19.3	20.3
South Australia	8.2	7.4
Western Australia	7.4	7.6
Tasmania	2.5	3.0
Northern Territory	0.4	0.2
Australian Capital Territory	1.0	1.2

* The sample of parents responding about their children aged 7–13 only.

encouraged parents to take their children out of school for an extended Easter break, with school returning online after Easter, or reopening conditionally.

- ‘During the lockdowns’ refers to any lockdowns parents recalled experiencing since 23 March 2020. This means periods when non-essential businesses were closed except for takeaway food and online sales; most employees in normal workplaces were working from home, and public gatherings and travel were restricted. Most importantly for this study, school was conducted online, and most children were at home.
- ‘Since the lockdowns ended’ refers to the period from 21 October 2021 to the present, when all states in Australia discontinued all lockdowns.

The first section of both surveys asked about children’s ownership of various types of media. The second section focused specifically on children’s book reading habits and parents’ involvement in book-related activities. The third section centred on children’s screen media use and parental mediation. The survey concluded by collecting basic background information on participants.

Ethics approvals were obtained from the authors’ institutional ethics review board (Project number: 22696). Participants were provided with a plain language statement detailing the nature and purpose of the survey, along with a consent form that they needed to sign before proceeding to the survey questionnaire.

Results

Children's ownership and consumption of books and screen media (RQ1)

In both surveys, we asked parents to identify the media items (books and screen devices) their children possessed personally (Figure 1a) and those located in children's bedrooms (Figure 1b). In Survey 1, staged as lockdown regimes were ending, books were most owned (66.5%), followed by tablets (59.1%), smartphones (48.5%), game consoles (44.6%) and computers (39.8%). However, when we asked the same question in Survey 2, one year after the lockdowns had ended, we observed a shift in the children's mediascape towards digital. Tablets were the most owned item (67.1%), followed by books (58.5%), game consoles (56.9%), smartphones (45.6%) and computers (32.5%).

To compare the changes in media usage across the two survey periods, we conducted a series of two-proportion z -tests. Book ownership, while still substantial, significantly decreased from 66.5% in Survey 1 to 58.5% in Survey 2 ($z = 2.33$, $p < .05$). This decline contrasts with significant increases in ownership of most digital devices, including game consoles (+12.3%), tablets (+8.0%) and TV sets (+6.1%), all at $p < .05$. The decrease in children's book ownership appeared to extend to digital reading devices (e-readers, -7.8%: $z = 4.07$, $p < .05$), although it should be noted that e-readers are not the only means of accessing books digitally. Previous studies have suggested that while children

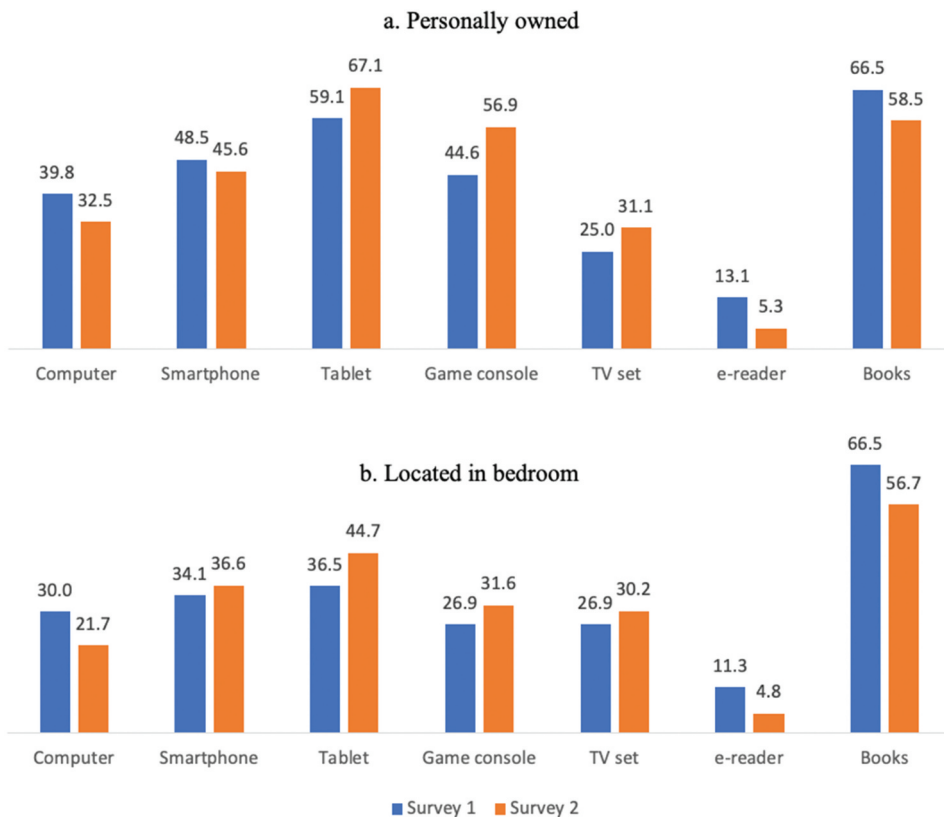


Figure 1. Media ownership. Survey 1 $N = 513$; Survey 2 $N = 434$.

can and do read books for enjoyment on digital devices, e.g. e-readers, iPads and tablets, digital reading tools are not the preferred format for narrative-driven texts (Strouse & Ganea, 2017), and children's books generally remain as having the least successful transition to digital (Bus, Neuman, & Roskos, 2020).

The shift to increased screen media ownership also created an increase in screen media in private spaces, as presented in Figure 1b. While books still made up a substantial proportion of items in children's bedrooms in Survey 1, two-proportion *z*-tests comparing Study 1 and Study 2 indicated a significant increase in tablets (+8.2%: $z = 2.56$, $p < .05$), with significant decreases in books (-9.8%) and e-readers (-6.5%) in bedrooms, both at $p < .05$. The decrease in both ownership and private use of books and e-readers raised a question of whether there had been a general decrease in children's reading activities.

Hence, the two surveys also examined children's engagement in different media activities over time. In Survey 1, 6 out of 10 respondents (58.9%) reported noticing changes in children's media usage habits during the lockdowns, and those primary caregivers were more likely to notice increases in time spent on screens. Specifically, 43.0% of this group indicated that their children spent more time on screen media and less on book reading, while 18.2% reported more screen time but about the same book-reading time. A minority (14.2%) noticed more book reading and less screen use during the lockdowns. In Survey 2, 31.1% of respondents indicated that their children spent more time on screens since the start of the lockdowns, with the majority (48.8%) stating that their children now spent more time on screens than playing outside.

Additionally, 80.6% of parents reported in Survey 2 that their children used gaming consoles. Regarding the content children used on their digital devices, 65.7% used gaming apps such as Minecraft, Roblox and Clash of the Clans. Eight in ten children (79.7%) used YouTube. By comparison, reading of digital chapter books and/or young adult fiction languished at between 12% and 20%.

Focusing specifically on children's screen media use, Survey 1 examined the impact of the pandemic on children's screen media usage by asking parents to indicate whether their child's engagement with screen media had increased or decreased since the COVID-19 outbreak. Survey 2 delved into children's screen media usage in the period after the pandemic, focusing on what parents had observed in their children's screen media activities since lockdowns ended. As presented in Table 2, more parents witnessed increases than decreases in their children's screen media

Table 2. Changes in children's screen media use (%).

	Decreased		No change		Increased		DK/NA	
	S1	S2	S1	S2	S1	S2	S1	S2
Using a computer	4.1	17.3	32.2	42.9	58.1	31.8	5.7	8.1
Using a smartphone	7.2	10.6	46.4	42.9	43.0	35.7	3.3	10.8
Using a video game console	5.5	12.7	36.6	38.9	52.2	39.6	5.7	8.8
Using a tablet	6.1	11.1	32.7	40.1	57.1	43.5	4.1	5.3
Watching live broadcast TV	4.9	16.3	35.7	52.1	51.2	24.7	8.8	6.9
Watching shows on streaming services	5.0	10.4	32.9	48.2	57.2	37.5	4.9	3.9

S1 refers to changes observed by parents between the onset of the pandemic and the end of lockdowns (Survey 1). S2 refers to changes observed by parents since the lockdowns finished (Survey 2). DK/NA denotes 'Don't Know' and 'Not Applicable'.

usage during the lockdowns (Survey 1). Over half had noticed increases in computer usage (58.1%), streaming services (57.2%), tablets (57.1%), game consoles (52.2%) and broadcast TV (51.2%) since the onset of the pandemic. While there was also an overall increase in children's screen media use after the lockdowns ended (Survey 2), the number of responses reporting 'no change' tended to be greater than those reporting an 'increase' during the post-pandemic period. Overall, our data indicate that while children's screen media use increased over this time, the prolonged lockdowns heightened children's reliance on screen media to compensate for the lost opportunities for other activities.

Parental involvement in children's book reading and screen media use (RQ2)

The surveys revealed that the pandemic influenced parents' book-buying and library borrowing for their children. During the lockdowns, the top sources for book purchases for children were discount department stores (DDS) (59.3%) and online bookstores (54.9%). Only 22.3% of respondents bought books for their children from brick-and-mortar bookstores using click-and-collect. While the high number of DDS sales could be attributed to those stores' heavily discounted popular titles, our results also indicate that some parents did not know that they could buy books from their local bookstores. Specifically, of the 127 respondents who did not purchase books for their children during the lockdowns, 27.0% mentioned that it was because the bookshops were closed. In Survey 2, after the lockdowns had ended, more people reported buying books for their children from local brick-and-mortar bookstores (41.6%), while the share of purchases from online bookstores decreased to 24.9%. The DDS sector further increased its dominance with its share of children's book purchases growing to 70.7%.

Access to libraries was limited during the lockdowns. Survey 1 demonstrated that while 60.3% of respondents borrowed children's books from the library before the lockdowns, this number dropped to 34.3% during the lockdowns due to library closures. After the lockdowns ended, libraries emerged as the second most popular source in Survey 2 for children's print books (62.0%), after the DDS (70.7%). For children's digital book and audiobook borrowing, libraries remained one of the top sources in Survey 2, indicating parents' growing reliance on libraries to promote and provide reading materials for their children post-pandemic.

As for parents' reading to/for their children, Survey 1 showed that 87.4% of parents regularly read stories to their children during the lockdowns. Since the lockdowns ended, however, the number has decreased to 59.7% (Survey 2). Those who did not read to their child cited reasons such as the child being too old, or that reading to their child was no longer required after the child could read independently.

In terms of the roles played by parents in children's screen media use, the surveys assessed how parents engaged in parental mediation regarding their children's screen media use in general, by explaining to and discussing with their child about screen media (i.e. active mediation), limiting the child's access to screen media (i.e. restrictive mediation), monitoring the child's use of screen media (i.e. monitoring) and using screen media with the child (i.e. co-use) before, during and after the lockdowns. [Figure 2](#) presents the percentage of parents who reported 'often' or 'all the time' when engaging in each of these parental mediation approaches.

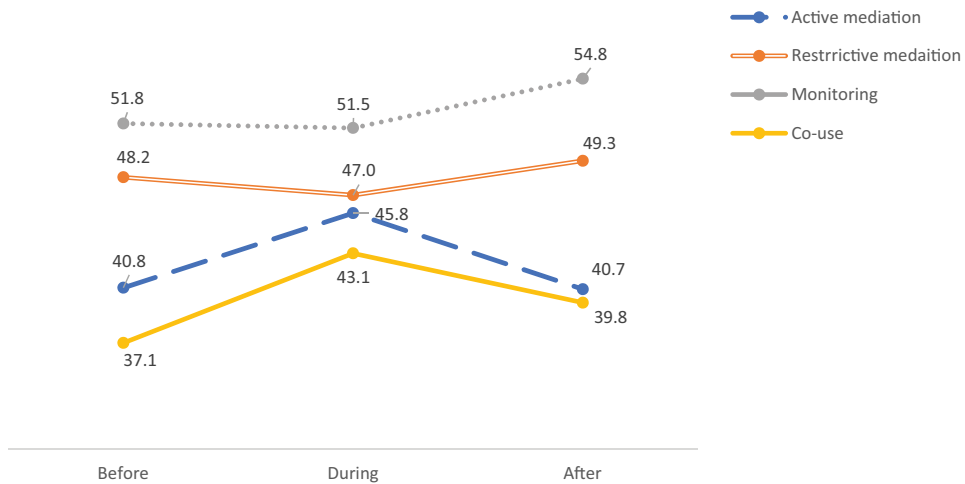


Figure 2. Parental mediation of screen media before, during and after lockdowns (%). Each number (%) represents the sum of those who reported engaging in corresponding parental mediation ‘often’ and ‘all the time’. Data for ‘Before’ and ‘During’ were from Survey 1, and ‘After’ from Survey 2.

Monitoring (51.8, 51.5, 54.8) is the most frequently used parental mediation strategy for children aged 7–13, followed by restrictive mediation (48.2, 47.0, 49.3), active mediation (40.8, 45.8, 40.7) and co-use (37.1, 43.1, 39.8), regardless of the time. However, during the pandemic, parents increased their involvement in active mediation and co-use, indicating a greater effort to communicate with their children about screen media and to share screen media experiences with them. While the lockdowns deprived children of social opportunities, parents were able to spend more time with children at home. This encouraged parents to adopt more hands-on and interactive approaches to parental mediation, highlighting one of the positive outcomes of the pandemic within the family mediascape.

In Survey 2, intending to gain a general understanding of parental supervision across differing media, we added a question asking which devices and/or books children used unsupervised since the lockdowns ended. Book reading (66.6%) and tablet use (53.9%) were most likely to be unsupervised, followed by game consoles (47.7%), smartphones (39.2%) and computers (27.9%). This signifies that parents are more actively supervising children’s use of computers and smartphones in the post-pandemic era, as compared with books and other media platforms.

Discussion

The COVID-19 pandemic, along with its protracted lockdowns, substantially influenced how children interacted with various forms of media. While there is a growing body of research on children’s media habits and the role of parental guidance during the pandemic, there remains a gap in our understanding of how children engaged with a range of media, including books, television and digital devices, in the post-pandemic period. Moreover, research on how parents adjusted their parenting practices at different stages – before, during and after the pandemic – is scant. To address

this research gap, we conducted two national surveys of parents in Australia, one in October 2021 (Survey 1) and the other in November 2022 (Survey 2), to investigate the short- and long-term impacts of the COVID-19 pandemic and lockdowns on children's access to and consumption of books and screen media, as well as parenting approaches over time.

Although our data indicate that books comprise a significant proportion of children's media ownership and that books were the most owned media item during the lockdowns and the second most owned after the lockdowns, the data also revealed that book ownership declined over time while ownership of most screen media devices increased. The fact that e-reader ownership also declined may imply a potential decrease in children's reading activities. That inference, however, needs to be treated cautiously, as we should also consider the capabilities of tablets for e-book reading and audiobook listening. Additionally, data published by Public Libraries Victoria in Australia (2019; 2022), which represents most of the community libraries in that state, reveals a substantial increase in general e-book borrowing in the financial year 2019–2020, the first six months of the pandemic, with digital downloads of e-books rising from 4.9 million to 6.8 million. The data also show a growth of the same magnitude in the financial year 2020–2021 as well as sustained borrowing in 2021–2022. While these data encompass borrowing of all age groups, they likely include a substantial value of children's books (Nolan, Bliss, & Wang, 2023).

Altogether, our data showed a clear trajectory towards more digital and screen media use among children, as seen in the rapid growth in gaming consoles during and after the pandemic, a particularly notable development in children's digital media habits. It appears that the pandemic lockdowns marked a crucial watershed in the children's mediascape. During the pandemic lockdowns, most parents in this study noticed that their children were more engaged with screen media than with books compared to the pre-pandemic time, confirming what other studies have found (Eyimaya & Irmak, 2021; Jennings & Caplovitz, 2022). In terms of individual types of screen media, more than half of the respondents reported that their children's use of most screen media increased during the lockdowns. This trend seems to persist even after the lockdowns ended, as parents noted that their children continued to spend more time on screen media as compared to other activities. Since the lockdowns concluded, only a small number of parents noticed a decrease in their children's screen media consumption, as shown in Table 2. Overall, our finding suggests that the increased screen time during the pandemic has persisted, indicating a lasting impact on children's media usage patterns and habits.

Our results also show that the pandemic brought about significant changes in how parents have managed their children's access to and use of both books and screen media. When it comes to children's access to and reading of books, our survey revealed that parents adapted to the pandemic by increasing their engagement in activities – reading more stories to or with their children and sourcing more books through online bookstores and discount department stores (DDS). This finding aligns with industry data collected by Nielsen Bookscan, which showed a surge in the popularity of children's book titles at the beginning of the pandemic, with the Bluey Australian children's book series accounting for 50% of the top ten fiction books that year, including adult titles (Books +Publishing, 2023). Overall, our study's findings, as well as the industry data, underscore the active role played by parents in promoting children's access to books and reading during the pandemic.

Regarding parental guidance of children's screen media use, our findings indicate that parents adjusted their approaches during lockdowns by increasing their involvement in active mediation and co-use. This finding corroborates prior studies demonstrating an uptick in active mediation and co-use during the pandemic (Baxter, Budinski, Carroll, & Hand, 2020; Sciacca, Laffan, Norman, & Milosevic, 2022). However, in contrast to other research (McClain, 2022; Ofcom, 2021; Rhodes, 2020), our study revealed that parents did not substantially decrease their use of restrictive mediation during the pandemic, with only a marginal 1.2% difference between the pre-pandemic and pandemic periods. It appears that Australian parents adopted a more balanced approach during the pandemic lockdowns. Instead of relying solely on restrictive measures, they engaged in conversations with their children and spent more shared media time with them. This shift suggests that parents recognised the limitations of restrictions, especially when children had to rely on screens for daily activities. Additionally, as parents spent more time with their children at home, observing their children's media consumption more closely, they may have seized opportunities to discuss responsible media use with them.

Research on parental mediation has consistently underscored the positive impact of such parent-child interactions (Shin & Lwin, 2019). Furthermore, research on parenting styles has documented that an 'authoritative parenting style' marked by high responsiveness and demandingness is associated with positive child development outcomes (Eastin, Greenberg, & Hofschire, 2006). Therefore, a combination of active mediation reflecting responsiveness and restrictive mediation reflecting demandingness is considered an ideal parenting approach, particularly in challenging media situations. This positive parenting practice observed during the pandemic, however, did not persist post-pandemic. Differing levels and types of parental mediation implemented after the pandemic closely resemble those observed before the pandemic. Parents reverted to their pre-pandemic approaches, despite ongoing changes in children's consumption patterns, including a continuous increase in screen time.

Implications

Our findings hold substantial implications for youth and media scholars as well as practitioners. First, this large-scale repeated cross-sectional study, conducted at two critical junctures, provides novel and much-needed insights into the immediate and enduring effects of the global crisis of the pandemic upon children's media landscapes. It offers empirical evidence on how the pandemic reshaped children's interactions with various media, encompassing books and screen media. The extreme circumstances brought by the pandemic led to a noticeable shift towards increased engagement with digital devices among children. This shift continued after the pandemic lockdowns ended, with a high level of digital media ownership and children spending more time using these devices in their personal spaces. Nevertheless, the extent to which these devices were being used for reading books after the pandemic remains uncertain. A follow-up investigation is required to gain a thorough understanding of children's post-pandemic reading habits in conjunction with their use of various media devices in 2022 and beyond.

Furthermore, our examination of parental involvement in children's book reading and screen media use before, during and after the pandemic lockdowns sheds light on the role of parents in children's media socialisation in times of crisis. Research on parental mediation over time is scarce albeit significant. Our findings reveal that, despite the sustained increase in attachment to digital devices among children, parental involvement in discussion-based active mediation and co-use ended after the pandemic lockdowns. Caregivers reverted to their pre-lockdown levels of restrictive mediation and monitoring. The prominence and growing popularity of online reading platforms, coupled with the outsourcing of reading activities to teachers and librarians, also suggest a reduced level of interaction between parents and children in the context of reading. This shift may have contributed to the perceived need for more restrictive mediation regarding digital devices.

Limitations and future research

Despite its contributions, this study has several limitations. First is its approach, wherein two cross-sectional surveys were conducted with different samples of a population over time (Rafferty, Walthery, & King-Hele, 2015). While repeated cross-sectional data enable researchers to evaluate aggregate changes in a population segment (i.e. parents in Australia), they do not allow us to assess how individual parents and their children have changed over time (Lebo & Weber, 2015). Although we made efforts to ensure that the two surveys were comparable by recruiting similar cohorts of parents in Australia, our data do not allow inferring individual-level changes. Future research utilising true longitudinal studies employing panel or cohort surveys will offer valuable and more nuanced insights. Second, as the primary aim of this study was to offer a broad understanding of how the pandemic has impacted family mediascape over time, our analysis did not separate or compare different subgroups. We encourage future research to delve into specific groups, such as disadvantaged families (e.g. those with low socioeconomic status and limited media access). Finally, while this study provides analyses of children's use of specific types of media over time, ranging from books to tablets, our examination of parental mediation assessed overall screen use only. Future research should consider examining detailed parental mediation strategies applied to various types of media use, including different types of books and screen devices, and how these strategies interact with each other.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Funding

The work was supported by the University of Melbourne .

ORCID

Katherine Day  <http://orcid.org/0000-0003-3297-0098>

Wonsun Shin  <http://orcid.org/0000-0002-1636-8171>

Sybil Nolan  <http://orcid.org/0000-0003-3850-2746>

References

- Ahn, R. J., & Nelson, M. R. (2019). How caregivers perceive and mediate children's books featuring media characters in the United States. *Journal of Children and Media*, 13(2), 201–218. doi:10.1080/17482798.2019.1576532
- Bai, J., Zhang, H., Chen, Q., Cheng, X., & Zhou, Y. (2022). Technical supports and emotional design in digital picture books for children: A review. *Procedia Computer Science*, 201, 174–180. doi:10.1016/j.procs.2022.03.025
- Baxter, J., Budinski, M., Carroll, M., & Hand, K. (2020). *Life during COVID-19: Dads spend more quality time with kids*. Retrieved from https://aifs.gov.au/sites/default/files/publication-documents/covid-19-survey-report_4_dads_spend_more_quality_time_with_kids_0.pdf
- Bergmann, C., Dimitrova, N., Alaslani, K., Almohammadi, A., Alroqi, H. . . . Mani, N. (2022). Young children's screen time during the first COVID-19 lockdown in 12 countries. *Scientific Reports*, 12(1), 2015. doi:10.1038/s41598-022-05840-5
- Books+Publishing. (2023). *Nielsen: Australia book sales up 7.2% in 2022*. Retrieved from <https://www.booksandpublishing.com.au/articles/2023/01/17/225222/nielsen-australian-book-sales-up-7-2-in-2022/>
- Bus, A. G., Neuman, S. B., & Roskos, K. (2020). Screens, apps, and digital books for young children: The promise of multimedia. *American Educational Research Association Open*, 6(1), 1–6. doi:10.1177/2332858420901494
- Chen, L., & Shi, J. (2019). Reducing harm from media: A meta-analysis of parental mediation. *Journalism & Mass Communication Quarterly*, 96(1), 173–193. doi:10.1177/1077699018754908
- Eastin, M. S., Greenberg, B. S., & Hofschire, L. (2006). Parenting the Internet. *Journal of Communication*, 56(3), 486–504. doi:10.1111/j.1460-2466.2006.00297.x
- Eyimaya, A. O., & Irmak, A. Y. (2021). Relationship between parenting practices and children's screen time during the COVID-19 pandemic in Turkey. *Journal of Pediatric Nursing*, 56, 24–29. doi:10.1016/j.pedn.2020.10.002
- Jennings, N. A., & Caplovitz, A. G. (2022). Parenting and tweens' media use during the COVID-19 pandemic. *Psychology of Popular Media*, 11(3), 311–315. doi:10.1037/ppm0000376
- Lebo, M. J., & Weber, C. (2015). An effective approach to the repeated cross-sectional design. *American Journal of Political Science*, 59(1), 242–258. doi:10.1111/ajps.12095
- Livingstone, S., & Helsper, E. J. (2008). Parental mediation of children's Internet use. *Journal of Broadcasting & Electronic Media*, 52(4), 581–599. doi:10.1080/08838150802437396
- Madigan, S., Eirich, R., Pador, P., McArthur, B. A., & Neville, R. D. (2022). Assessment of changes in child and adolescent screen time during the COVID-19 pandemic: A systematic review and meta-analysis. *JAMA Pediatrics*, 176(12), 1188–1198. doi:10.1001/jamapediatrics.2022.4116
- McClain, C. (2022). *How parents' views of their kids' screen time, social media use changed during COVID-19*. Pew Research Center. <https://www.pewresearch.org/short-reads/2022/04/28/how-parents-views-of-their-kids-screen-time-social-media-use-changed-during-covid-19/>
- National Children's Book Literacy Alliance. (2023). *Why do kids need books?* Retrieved from <https://thencbla.org/advocacy/why-do-kids-need-books/>
- Nolan, S., Bliss, L., & Wang, W. (2023). Story time must go on: Interviews with children's librarians about the impact of COVID lockdowns on children's reading practices. *Society for the History of Authorship, Reading and Publishing (SHARP)*, 2023. University of Otago, Dunedin, New Zealand.

- Nolan, S., Day, K., Shin, W., & Wang, W. (2022). Books versus screens: A study of Australian children's media use during the COVID pandemic. *Publishing Research Quarterly*, 38(4), 749–759. doi:10.1007/s12109-022-09899-w
- Ofcom. (2021). *Children and parents: Media use and attitudes report 2020/2021*. Retrieved from https://www.ofcom.org.uk/__data/assets/pdf_file/0025/217825/children-and-parents-media-use-and-attitudes-report-2020-21.pdf
- Plunkett, L. (2019). Kids' data is a form of currency — and parents often decide how to spend it. *Business Insider*. Retrieved from <https://www.businessinsider.com/kids-data-form-of-currency-parents-decide-how-to-spend-2019-9>
- Public Libraries Victoria. (2019). *2018-19 PLV annual statistical survey*. Retrieved from <https://www.plv.org.au/wp-content/uploads/2020/04/2018-19-PLV-Annual-Statistics.xlsx>
- Public Libraries Victoria. (2022). *2021-22 PLV annual statistical survey, summary report*. Retrieved from <https://www.plv.org.au/wp-content/uploads/2022/11/01.-2021-22-PLV-Annual-Statistical-Survey-Summary-Report.docx>
- Rafferty, A., Walthery, P., & King-Hele, S. (2015). *Analysing change over time: Repeated cross sectional and longitudinal survey data*. U. D. Service. <https://dam.ukdataservice.ac.uk/media/455362/changevertime.pdf>
- Rhodes, A. (2020). *COVID-19 pandemic: Effects on the lives of Australian children and families*. Retrieved from <https://rchipoll.org.au/wp-content/uploads/2020/07/nchp-poll18-report-covid.pdf>
- Sciacca, B., Laffan, D. A., Norman, J. O., & Milosevic, T. (2022). Parental mediation in pandemic: Predictors and relationship with children's digital skills and time spent online in Ireland. *Computers in Human Behavior*, 127, 107081. doi:10.1016/j.chb.2021.107081
- Shin, W., & Lwin, M. O. (2019). *Screen obsessed: Parenting in the digital age*. Singapore: World Scientific.
- Soldatova, G., Chigarkova, S., & Dreneva, A. (2019). Features of media multitasking in school-age children. *Behavioral Sciences*, 9(12), 130. doi:10.3390/bs9120130
- Stanica, I., Moldoveanu, A., Dascalu, M., Moldoveanu, F., Radoi, M., & Nemoianu, I. V. (2019). Emergent technologies to enrich reading outcomes through augmented reality. *Revue Roumaine des Sciences Techniques Serie Electrotechnique et Energetique*, 64(1), 95–100.
- Strouse, G. A., & Ganea, P. A. (2017). A print book preference: Caregivers report higher child enjoyment and more adult-child interactions when reading print than electronic books. *International Journal of Child-Computer Interaction*, 12, 8–15. doi:10.1016/j.ijcci.2017.02.001
- Strouse, G. A., Newland, L. A., & Mourlam, D. J. (2019). Educational and fun? Parent versus preschooler perceptions and co-use of digital and print media. *American Educational Research Association Open*, 5(3), 233285841986108. doi:10.1177/2332858419861085
- Trott, M., Driscoll, R., Irlado, E., & Pardhan, S. (2022). Changes and correlates of screen time in adults and children during the COVID-19 pandemic: A systematic review and meta-analysis. *EClinicalMedicine*, 48, 101452. doi:10.1016/j.eclinm.2022.101452
- Wheeler, D. L., & Hill, J. C. (2021). The impact of COVID-19 on early childhood reading practices. *Journal of Early Childhood Literacy*, 146879842110441. doi:10.1177/14687984211044187