


ARTICLE

Popular post-separation parenting smartphone apps: An evaluation

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Abstract

In recent years a bewildering array of smartphone applications (“apps”) has emerged to support separated parents’ communication. Post-separation parenting apps vary in cost and features; they typically comprise a messaging tool, shared calendar, expense tracker and a means to export records for legal purposes. A key challenge for separated parents and family law practitioners alike is knowing which apps or app feature(s) can work well for different family contexts, needs and budgets. The present study sought to evaluate nine popular post-separation parenting apps and their features using small-*n* Human–Computer Interaction methods. Mediators role-played high conflict ex-couples while completing a set of five common post-separation communication or organizational tasks. A cross-case analysis of ratings was conducted. We found that (a) many of the mediators changed their apparent enthusiasm for co-parenting apps once they had used the apps themselves; (b) all nine apps were rated somewhere between “Poor” to Fair; and (c) features of some of the best-known apps were not rated as highly as some of the features of more recent, lesser-known apps.

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KEYWORDS

communication technology; digital technology; divorce; information communication technology (ICT); mobile apps; parental separation; safety by design; smartphone [Correction added on 22 June 2023, after first online publication: The Keywords were corrected in this version.]

Key points for the family court community

- A key challenge for separated parents and family law practitioners alike is knowing which post-separation parenting apps or app feature(s) can work well for different family contexts, needs and budgets.
- The efficacy and safety of these apps in everyday settings is yet to be demonstrated. Specifically, little is known about when, how, for whom, and under what circumstances post-separation parenting apps are likely to be most effective.
- It is important that family law professionals have a working knowledge of a range of apps, and at least some hands-on experience with the apps they are recommending.
- The mandating and recommending of apps by family law professionals raise interesting and complex questions about duty of care and responsibility.
- What matters is that an app's features match a user's needs (especially safety needs), budget and circumstances.
- Courts need to be careful about regarding co-parenting apps as a cheap, quick technological fix for managing highly conflicted and/or complex relationship problems.

INTRODUCTION

In recent years a bewildering array of smartphone applications (“apps”) has emerged to support separated parents' communication and post-separation parenting arrangements (Smyth & Fehlberg, 2019). Post-separation parenting apps vary in cost and features and typically comprise a messaging tool, shared calendar, expense tracker, a means to share photos and information about children, and the ability to export records for legal purposes. Potential benefits include keeping all information in one place, setting clear boundaries for communication, and the ability to collect evidence (i.e., convenience, containment, and accountability) (Heard et al., 2023) even if only for an interim period. In the presence of enduring interparental high conflict, post-separation parenting can help restrict the volume and nature of communication; keep negative feelings to a minimum through the removal of tone, body language, and emotional cues; help parents keep track of their children's overnight stays, activities, and needs (e.g., dietary, health, academic); and allow third parties (e.g., courts, parenting coordinators, and lawyers) to access records directly if needed (Quehl, 2017). There are suggestions, however, that some apps or app features might inadvertently do more

harm than good by fueling conflict and/or fostering litigiousness—or worse, might become technologies of power, control, and abuse (Markwick et al., 2019; Woodlock et al., 2019).

The ubiquitous nature of smartphones, rapid improvements in their features, pressure on governments to cut costs and reduce litigation rates, perceived commercial opportunities by developers and investors, and forced lockdowns due to COVID-19, have stimulated the proliferation of apps for separated families. In a burgeoning app market, family lawyers, mediators, and mental health professionals are increasingly being asked about or asked to suggest co-parenting apps for clients (Payne et al., 2022). Many family law professionals in Australia have recently reported recommending these apps to their clients, despite having little knowledge of or personal experience using them (Payne et al., 2022). There is also an emerging trend for judges to mandate—at the request of parents in some instances—the use of post-separation parenting apps as the sole or primary communication tool in high-conflict cases.¹ Notwithstanding these developments, the efficacy and safety of these apps in everyday settings are still to be demonstrated. Specifically, little is known about when, how, for whom, and under what circumstances these apps are likely to be most effective. A clear risk here is that rather than relying on personal experience or independent evaluation and review, well-intentioned family law professionals are making decisions based on word-of-mouth or promises made by product developers.

A key challenge for separated parents and family law practitioners alike is knowing which apps or app features work well for different family contexts, needs, and budgets. Articles touting “the Top 10 Co-Parenting Apps” or “Best Apps” (e.g., Jackson & Calloway, 2018) are often outdated soon after they are published. More broadly, the sheer number of apps and accompanying app reviews can be overwhelming (Genc-Nayebi & Abran, 2017), and star ratings are given to apps in their entirety while offering few insights into the individual features of an app (Guzman & Maalej, 2014). Knowing which app is the “right one” in such a complex and rapidly evolving digital landscape can thus be intimidating, expensive, and time-consuming (Heyman, 2020).

PRIOR STUDIES

Only a handful of studies—all from North America—have begun to explore digitally mediated communication among separated or divorced parents.² Odom, Zimmerman, and Forlizzi (2010), for example, conducted interviews with 13 families (13 parents, 46 children aged 10–17 years). At that time, they found (a) divorced parents primarily used text and email to communicate; (b) some children used Facebook to keep parents updated on their movements and as a gateway for family communication; and (c) digital technology “both complicated and supported” post-separation parenting (Odom et al., 2010, p. 159). Digital calendars, for instance, can help to build consensus and the parental alliance but can complicate co-parenting if private information is inadvertently shared (e.g., the other parent's date with a new partner). Odom et al.'s (2010) study is unusual in that it highlights the potential role of children as go-betweens in this complex digital space.

Ganong et al.' (2012) study remains the most widely cited research in the field. They interviewed 49 divorced parents (39 mothers, 10 fathers) about which technologies (e.g., cell phones, text messages, email) they used to communicate about their parenting, how they used these technologies, and their motives for doing so. They found that most parents used digitally mediated technology to set clear personal and household boundaries and to keep a record of decisions and agreements. They noted that parents' relationship quality shaped communication use. Divorced parents who were cooperative and child-focused tended to use digital technology to make it easier to manage their parenting arrangements whereas those in conflicted or emotionally distant co-parental relationships typically used digital technology for more strategic ends:

¹In Australia, see for example, Lenkov and Serada (2021) *FamCA* 192; Koyroyshs and Koyroyshs (2020) *FamCA* 626.

²An Australian study by Hughes and Funston (2006) is an exception.

as tools for controlling interactions with the other parent, ... to (a) reduce conflicts, (b) withhold information, (c) convey information in a way that limited the ability of the coparent to have input into child-rearing decisions, and (d) influence the behavior of the coparent (Ganong et al., 2012, p. 402).

Ganong and colleagues concluded that communication technologies could be used to manage the post-separation parenting relationship in both positive and negative ways.

Markham et al. (2015) sought to explore when, how, and in what ways separated parents communicated with each other, and established and maintained personal boundaries. They interviewed 30 men and women with shared-time arrangements. They found that separated parents who made their own parenting arrangements or who had an informal and flexible arrangement ultimately had “more frequent and positive communication ... than those with strict formal arrangements dictated by the court” (Markham et al., 2015, p. 1436).

In another frequently cited study, Dworkin, McCann and McGuire (2016) surveyed 178 divorced parents (155 female, 23 male) to explore how and why separated parents used digitally mediated communication with their co-parent. They found that (a) parents were selective about which tools they use for different tasks; (b) text messaging and e-mail (with near equal usage) were the most common communication tools (see also Markham et al., 2015; Smyth et al., 2020), (c) technology use is contingent on a match between issue and users; and (d) technology “can both improve coparent communication and the coparent relationship, but ... also make it worse” (p. 291).

For her dissertation, Quehl (2017) sought to investigate the ways in which families with shared-time arrangements used digital technologies (including a popular co-parenting app) to manage their post-separation parenting arrangements. She interviewed 12 separated/divorced parents (6 female, 6 male), recruited largely through personal networks. Consistent with earlier studies, she found that the quality of the co-parental relationship typically shapes the mode(s) and nature of co-parental communication. Separated parents in high conflict, for instance, often use technology to restrict inter-parental communication; to reduce the potential for conflict to escalate; and to keep a detailed record of events (Quehl, 2017). Digital tools were thus both “necessary” and “problematic” for parents in high conflict. By contrast, cooperative parents were more likely to prefer to use a wider range of digital tools and synchronous methods (e.g., phone, face-to-face communication).

Most recently, Russell et al. (2021) sought to develop a typology of post-divorce digital communication patterns and explore whether these varied by socio-demographic characteristics and wellbeing. They surveyed 491 divorced parents from an online non-probability panel and identified four distinct communication groupings: (a) multi-media communicators, (b) phone communicators, (c) text/email communicators, and (d) “limited communication texters”. Groups (a) and (b) comprised mainly cooperative parents, whereas groups (c) and (d) comprised parents with more emotionally distant and acrimonious relationships with their former partners. Russell et al. (2021) concluded that:

[p]olicy makers, judges, and mediators should be knowledgeable of the potential benefits and harms associated with use of certain ICTs [information and communication technologies] across contexts when assisting in the development of parenting plans, making final judgments, or shaping state mandates surrounding divorce education....

They rightly argue that a “one-size-fits-all recommendation” for divorced families is likely to be inappropriate in this complex relational space (p. 3772) (see also Smyth et al., 2020).

To sum up: prior studies have largely focused on the impact of relationship quality on technology choice and use; the potential upsides and downsides of digitally mediated technologies; the potential role of children as go-betweens in this complex digital space; and the importance of a good fit between users' needs and digital technologies.

Apps or app features?

Family law professionals and separated parents generally seem to be interested in only one question: which app is *the best*?³ Unfortunately, the only balanced answer to this question is “*it depends*.” Because each family and their circumstances are unique, a one-size-fits-all approach is the least optimal solution. Instead, the ‘best’ app for each coparenting situation is likely to depend on what communication resources are needed and which combination of features best meet those needs. In any case, post-separation parenting apps vary in the number and nature of their features and so are not always comparable. A small number of apps focus solely on messaging or scheduling, whereas most other apps comprise a suite of features bordering on post-separation life management systems. Further, in these more complex apps, usability can vary considerably from feature to feature. So, while an app might “do everything” it might not do all things equally well. For these and other reasons, the present study’s unit of analysis is an app *feature*—not an app.

We favor a goodness-of-fit model between user needs and app features. Some users may only be interested in one or two features. One app might have a good messaging function, but its shared calendar may be hard to use. Another app might have an easy-to-use calendar, but the messaging notifications may be poor or unreliable. Focusing on individual app features is thus more likely to be of interest to potential users than comparing one app with another.

Aims and research questions

The aim of the present study was to evaluate the usability of nine⁴ popular post-separation parenting apps and their various functions using a rigorous, multiple-methods, independent evaluation framework. To our knowledge, this is the first study to do so using Human–Computer Interaction (HCI) methods as part of a larger mixed methods approach to evaluate these apps. Three research questions guided the present study:

RQ₁. How easily can users carry out common post-separation parenting tasks using popular post-separation parenting apps available in Australia?

RQ₂. Which apps and app features are the easiest to use?

RQ₃. How likely are experienced family mediators to recommend any of these apps to a family experiencing or with a history of domestic violence?

METHODS

The present study draws on lab-based usability testing in which a set of tasks were defined, with the user then observed performing these tasks while usability metrics are collected (Jake-Schoffman et al., 2017; Kortum, 2015). Specifically, HCI methods (i.e., detailed qualitative, small *n* user studies), and usability evaluation methods (“Can you do x?” “How easy was that to do?”) in tandem with traditional multiple methods were used. Although there is a voluminous literature on app evaluation frameworks, to our knowledge no method for the assessment of post-separation parenting apps has been developed.

³This paper has been presented at several conferences, and this question is always the first we are asked by judicial officers, lawyers, mediators and mental health professionals. Several separated parents who participated in another part of our study subsequently contacted Smyth to ask this question.

⁴We tested 10 apps but encountered technical difficulties with one of them. This app was subsequently removed from the study to ensure equivalent data and comparisons.

Participants

Family Dispute Resolution Practitioners (FDRPs)⁵ were recruited to act as raters because: (a) they have a deep understanding of family dynamics, especially entrenched high conflict and coercive control; (b) they can be paired with a colleague for a standard 90-minute Family Dispute Resolution (FDR) session; (c) they are often asked about apps and their organizations often offer lists of apps to clients⁶; and (d) research with FDRPs carries negligible ethical risks because of their professional training and experience.

Specifically, 30 FDRPs (23 women, 7 men) from Relationships Australia participated in the study. The majority (58%) had been working in the family law system for more than 5 years. There was a relatively even spread of FDRPs across various age groups.⁷ Most FDRPs reported being comfortable using technology.

Relationships Australia Victoria provided 14 FDRPs for three app rating sessions. Relationships Australia Canberra and Regions provided 14 FDRPs for one rating session, and two FDRPs for two rating sessions. Where possible, FDRPs were paired with a colleague from the same organization. None of the FDRPs had previously used any of the apps in the study.

Materials

Apps

To determine the most appropriate apps for inclusion in this evaluation, a search was undertaken in May 2021 replicating elements of Smyth and Fehlberg's (2019) app mapping exercise in Australia. Their inclusion and exclusion criteria were expanded for the present study. Specifically, searches were undertaken in the Australian Google Play (Android) and iTunes (Apple) App Stores in tandem with the internet. The 2019 search terms were again used: "divorce", "separation", "custody", "parenting", "coparent", "relationship breakdown" and 'app'. Four additional terms were added: "family", "children", "stepfamily", and "blended family". To ensure comprehensive coverage, within the app stores, each app that was clicked on also provided links to additional "similar" apps which were explored and reviewed for suitability. Each app underwent initial screening based on the descriptions and associated screenshot images provided by the stores.⁸

To be included, apps needed to: (a) be in English; (b) be available on the Australian app stores; (c) be working or have been updated in the last 2 years; (d) be specifically designed for the needs of separated families (i.e., not generic communication apps); (e) be native to mobile phones via IOS or Android operating systems⁹; and (f) have at least a messaging tool, a shared calendar, or an expense tracker. Once the inclusion criteria were applied, the final usable sample comprised nine apps.¹⁰

Table 1 summarizes the nine apps we tested, and their cost and key features at the time of testing (March 1 to May 20, 2022).

All apps were developed in the US context, apart from *2houses* (Belgium), *Amicable* (England), and *Divvito* (Australia). Two apps were free (*AppClose* and *Divvito*); the other apps ranged in cost from ~\$AUD160 to \$AUD396

⁵In Australia, many specialist family law mediators are known as Family Dispute Resolution Practitioners (FDRPs) and need to be accredited under the Family Law (Family Dispute Resolution Practitioners) Regulations 2008. This accreditation requires competency in being able to screen and assess families for family violence and child abuse.

⁶We surveyed Family Relationship Centres in Australia and obtained 11 such lists.

⁷25–34 years: $n = 5$; 35–44 years: $n = 8$; 45–54 years: $n = 10$; 55–65 years: $n = 5$; over 65 of years: $n = 2$; did not say: $n = 1$.

⁸It is not possible to provide a finite number of results from this search. Both Apple and Android app stores use "infinite scrolling", whereby new search results are infinitely loaded at the bottom of the search screen. As such, results are essentially unlimited and uncountable regardless of the decreasing connection of the results with the search terms.

⁹PC-only and web-based apps were excluded on the basis that on-the-run communication needed to be facilitated on a smartphone.

¹⁰Detailed exclusion criteria set out in Excel are available on request: 21 apps had not been updated in the last 2 years or did not work once downloaded; 26 apps did not meet the inclusion criteria; and 15 apps were not available in the Australian App stores.

TABLE 1 Basic descriptors of the rated apps (N = 9).

Descriptor	2forKids	2houses	Amicable	AppClose	Divvito	Fayr	OFW	Peaceful parent	Talking parents	No. apps	Mean
Price											
Free trial of full version	-	✓	✓	✓	-	-	-	-	-	5	N/A
Free Limited version	✓	-	-	✓	✓	-	-	✓	✓	5	N/A
Full app Free	-	-	-	✓	✓	-	-	-	-	2	N/A
Annual cost ^a (2 parents, full version, all features) (AUD)	\$180	\$160	\$165	\$0	\$0	\$290	\$240	\$196	\$396	N/A	\$232 ^b
Multiple languages (as indicated in the app store)											
Multiple languages (as indicated in the app store)	✓	✓	-	-	-	✓	-	-	-	3	N/A
Web version available											
Web version available	✓	✓	-	-	-	-	✓	-	✓	4	N/A
Nuisance factors											
In app ads	0	0	0	0	0	0	0	0	0	0	N/A
Features in app not available in AU	-	-	✓	✓	-	-	-	-	✓	-	N/A
Overt bugs	✓	-	✓	-	✓	-	-	-	-	-	N/A
Average file size (MB)	71.1 MB	75.3 MB	25.2 MB	218.2 MB	24.3 MB	68.6 MB	67.3 MB	30.8 MB	188.5 MB	N/A	82.3 MB
Guidance to navigate app											
Tutorial or user guide available on web	-	✓	✓	✓	-	✓	✓	✓	✓	8	N/A
Quality ratings (AU app store) ^c											
If rated, average number of stars (1-5)	-	4.3	-	4.6	2.9	3.9	2	4.3	4.1	N/A	3.7
Written reviews available	-	✓	-	✓	✓	✓	✓	-	✓	7	N/A
No. of ratings	-	n = 40	-	n = 369	n = 15	n = 7	n = 31	n = 12	n = 244	-	n = 96
Who can use the app											
2 separated parents	✓	✓	✓	✓	✓	✓	✓	✓	✓	10	N/A
1 separated parent (alone)	-	-	-	✓	-	-	-	-	-	1	N/A
Third party (children)	✓	✓	-	-	-	-	✓	-	-	4	N/A
Third party (other family etc.)	✓	✓	-	✓	-	-	✓	✓	-	6	N/A
Third party (professionals – if diff/sep to above)	-	-	-	-	-	-	✓	-	-	1	N/A

(Continues)

TABLE 1 (Continued)

Descriptor	2forKids	2houses	Amicable	AppClose	Divvito	Fayr	OFW	Peaceful parent	Talking parents	No. apps	Mean
Functions											
Messaging	✓	✓	✓	✓	✓	✓	✓	✓	✓	10	N/A
Language filter/ Tone monitors	-	-	-	-	✓	-	✓	✓	-	3	N/A
Shared calendar	✓	✓	✓	✓	-	✓	✓	-	✓	8	N/A
Expense sharing	✓	✓	-	✓	-	✓	✓	-	✓	6	N/A
File store/vault/share (separate to Messaging)	✓	✓	-	✓	-	✓	✓	-	✓	7	N/A
Data extraction for legal purposes	-	PC only	✓	✓	✓	✓	PC only	✓	✓	8	N/A
Other features	✓	✓	✓	✓	✓	✓	✓	✓	✓	10	N/A

^aCosts for Apple store subscriptions, current at 23 August 2022. Rounded to nearest dollar.

^bExcludes free apps.

^cApple Store reviews current at 23 August 2022.

(mean = \$AUD232, SD = \$AUD86, median = \$AUD188) per family per annum—though some apps offer free trial periods and tiered payment plans. Some paid apps (e.g., *Our Family Wizard*) also offer a heavily discounted rate under certain conditions for those unable to afford the full cost.

The star ratings (recorded in August 2022) and number of reviews on the Australian Apple app store varied markedly, with only two apps (*AppClose* and *Talking Parents*) receiving a substantial number of reviews ($n = 369$ and 244 , respectively); both were rated at least 4 stars (4.6 and 4.1, respectively). Current app rankings and review systems, however, are subjective, piecemeal, and likely biased in complex ways and thus need to be interpreted with caution (Guzman & Maalej, 2014).

Phone and app registrations

To protect the privacy of each rater's personal phone, 12 smartphones (seven iPhones; five Android phones) were purchased for use in the rating sessions and email aliases were created and matched to each phone. Phones and app subscriptions were paired to simulate six ex-couple dyads, and then distributed to raters.

Evaluation software

We used a specialist Melbourne-based tech company, Portable, to program and design the user-friendly interface for the bespoke rating tool. The video conferencing tool, Zoom, was used to record all rating sessions and mini-focus groups (see below).

Preparation materials

To improve inter-rater reliability, all participants were provided with a one-hour pre-recorded training video developed by the research team. FDRPs were also provided with a booklet with log-on details and instructions for using the rating tool and accessing the apps on the phones. The booklet also included brief descriptions of each app from the AppStore, and an overview of the evaluation tasks.

PROCEDURES

Our rating protocol required that: (a) each app be manually evaluated three times; (b) each rater pair rate each app no more than once; (c) each session be completed within 90 minutes; (d) each app feature have its own time limit (see Appendix Table A1)—each set of tasks was limited to 8–20 min to fit within the overall session time but also because there is much evidence to suggest that if a task cannot be completed relatively easily and quickly, users typically abandon an app (Fehnert & Kosagowsky, 2008)¹¹; (e) if an app did not work, the evaluation session would be canceled or another app substituted; (f) FDRPs were to be paired with a colleague they knew from their own organization; and (g) where possible, FDRPs were provided with the type of phone (Apple/Android) they were most comfortable using.¹² These parameters were made for practical reasons, and to reduce burden on the participating organizations and FDRPs.

¹¹The calendar function was moved to the latter part of the trials because it was one of the most time-consuming and challenging aspects of testing. It was the second function tested during piloting by the research team but this was changed to avoid reducing rater confidence and experience early in each trial. This was a methodological and ethical decision.

¹²Around three quarters of FDRPs received their preferred phone type.

App rating sessions

Each rating session comprised four components: (i) a brief introduction and reiteration of the project's aims and method; (ii) the interactive, timed role-play tasks; (iii) a non-interactive rating of the app overall; and (iv) a three-way open discussion for the final 15 minutes. Different research team members facilitated the sessions.

Introduction and instructions

This component included a re-iteration of the project's aims and the nature of the role play and tasks to come. It was only at this point—and not earlier—that raters were told which app they would be rating and which parent they would play in the tasks: 'Parent A' or 'Parent B' (Parent A often initiated a task). Apps and parent roles were randomly allocated.¹³

Role play and rating tasks

At the heart of the study is a timed, structured role play of common co-parenting tasks followed by a series of rating questions. Numerous app evaluation frameworks were considered.¹⁴ From these, a set of tasks was constructed for each app function: messaging, expense sharing, calendar/scheduling, and data extraction tasks (see Appendix Table A1).

On completion of each set of tasks a series of rating questions followed. Although each module of the rating tool varied for each app feature available, the basic question format was: (a) Were you able to do x? Response options: "Yes", "No", "Partially", "Not Applicable", "I did not have time to do this"; (b) How easy was it to do? (0–10 scale: anchored by 0 = "Very difficult", 10 = "Very easy"); and (c) Is there anything in particular you liked or disliked about using this app to do x? (Open ended). Most closed responses also allowed space for detailed comments to be added.

Overall app rating

The final component contained six questions about "the app overall" including some usability questions. Usability is a critical quality factor in digitally mediated communication for the obvious reason that if an app is hard to use, it will not get used. FDRPs were instructed to undertake this part of the evaluation in silence so as not to influence each other. Questions included: "Would you recommend this app to other separated parents?" "Would you recommend this app to a family experiencing, or with a history of, domestic violence?" "Overall, how would you rate the user-friendliness of this app?" "What is your overall star rating of the app?"

RESULTS

Results are provided in six parts. The first four parts present FDRP ratings for each key function: (i) messaging; (ii) shared calendar; (iii) expense tracking; and (iv) downloading reports for legal purposes. Although our focus is on

¹³Since the role of Parent A was (typically) to initiate key activities (such as sending the first message), we later investigated whether the mediator ratings varied systematically between Parent A and Parent B. The data are small in number, but the modeling of covariance adjusted ratings indicated no difference between the two roles.

¹⁴For example, The System Usability Scale [SUS, Brooke, 1996], the Mobile Application Rating Scale [MARS, Stoyanov et al. 2015, 2016], the Usefulness, Satisfaction, and Ease of Use Questionnaire [USE, Lund, 2001].

TABLE 2 Messaging: Mediator rating scores and overall descriptive statistics.

Dyad number – Rater number	2forkids	2houses	Amicable	AppClose	Divvito	Fayr	OFW	Peaceful parent	Talking parent
How easy was it to send a message?									
Rating 1–1 ^a	4	^b	10	7	10	9	7	9	9
Rating 1–2	8	3	8	9	7	10	7	9	8
Rating 2–1	7	2	1	10	10	10	5	9	9
Rating 2–2	^b	8	4	10	10	10	7	9	9
Rating 3–1	10	8	9	9	10	10	5	10	10
Rating 3–2	9	9	10	9	10	10	5	10	10
Descriptive statistics									
Min	4	2	1	7	7	9	5	9	8
Max	10	9	10	10	10	10	7	10	10
Mean (SD)	7.6 (2.3)	6 (3.2)	7 (3.7)	9 (1.1)	9.5 (1.2)	9.8 (0.4)	6 (1.1)	9.3 (0.5)	9.2 (0.8)
Adj mean ^c	7.1	5.0	6.2	8.6	9.5	9.6	5.1	9.4	8.8
Median	8	8	8.5	9	10	10	6	9	9

Note: $N = 6$ rater observations per app.

Source: Post-Separation Parenting Smartphone Apps study (2022).

^a“Rating 1–1” denotes randomly allocated Dyad 1–Person 1; “Rating 1–2” denotes randomly allocated Dyad 1–Person 2; etc.

^bRater could not send a message in allocated time.

^cAdj mean = covariance-adjusted mean to address non-independent observations due to 6 of the rater dyads doing multiple trials across the 27 trial sessions.

app features, for completeness we also present the overall ratings for each app (v) along with some qualitative data (vi).

Tables 2–6 contain the raw ratings for each app trial along with basic descriptive statistics. When viewing the following tables, it is important to remember that FDRP pairs (depicted in the table as “Rating 1–1”, “Rating 1–2”, for example) were randomly allocated up to three app trials, and no app was rated more than once by any FDRP pair. We report median ratings for simplicity but have derived covariance-adjusted means to take account of the non-independence of observations in the context of multiple trials for roughly half the mediator pairs.¹⁵

Messaging

Communication is one of the most prevalent problems in interpersonal relationships and a common reason that men and women give for their relationship ending (Amato & Previti, 2003; Hawkins, Willoughby, & Doherty, 2012). On separation, parenting disputes often emanate from one or both parents not providing timely, accurate, and full information to the other parent (Arizona AFCC, 2011). At the more extreme end of the conflict spectrum, even if parents are ordered by a court to restrict their interaction, they still need to exchange information about children consistent with those orders (Arizona AFCC, 2011). Table 2 presents the ratings ascribed by FDRPs to each app's messaging function.

Table 2 shows that almost all of the apps were rated highly (“8”–“10”) by FDRPs on the messaging feature.

¹⁵Ratings drop mostly for those apps where only women were the raters. This is because women tended to ascribe higher ratings than men. The resultant fall in adjusted means takes account of the gender imbalance in ratings.

TABLE 3 Shared calendar: Mediator rating scores and overall descriptive statistics.

Dyad number – Rater number	2forkids	2houses	Amicable	AppClose	Divvito	Fayr	OFW	Peaceful parent	Talking parent
Messaging: How easy was it to set-up parenting arrangements in the calendar?									
Rating 1–1 ^a	4	0	4	2	N/A	^b	^b	N/A	7
Rating 1–2	6	2	7	3	N/A	3	1	N/A	4
Rating 2–1	^b	5	0	1	N/A	5	2	N/A	^b
Rating 2–2	6	2	1	^b	N/A	6	3	N/A	2
Rating 3–1	2	8	3	^b	N/A	^b	^b	N/A	9
Rating 3–2	6	7	5	4	N/A	6	1	N/A	8
Descriptive statistics									
Min	2	0	0	1	N/A	3	1	N/A	2
Max	6	8	7	4	N/A	6	3	N/A	8
Mean (SD)	4.8 (1.8)	4 (3.2)	3.3 (2.6)	2.5 (1.3)	N/A	5 (1.4)	1.8 (1.0)	N/A	6 (2.9)
Adj mean ^c	4.4	4.5	4.4	2.7	N/A	5.1	1.8	N/A	5.4
Median	6	3.5	3.5	2.5	N/A	5.5	1.5	N/A	7

Note: N = 6 rater observations per app.

Source: Post-Separation Parenting Smartphone Apps study (2022).

^a‘Rating 1–1’ denotes randomly allocated Dyad 1–Person 1; ‘Rating 1–2’ denotes randomly allocated Dyad 1–Person 2; etc.

^bRater could not set up parenting schedule in allocated time.

^cAdj mean = covariance-adjusted mean to address non-independent observations due to 6 of the rater dyads doing multiple trials across the 27 trial sessions.

Shared calendar

Modern family life involves a plethora of activities that need to be planned and coordinated (Neustaedter et al., 2009). Parental separation typically adds additional layers of complexity insofar as children are increasingly likely to move between two homes, which can involve complex logistics (Smyth et al., 2012). A shared family calendar can “play a pivotal role in the everyday coordination of family activities” (Neustaedter et al., 2009, p. 45), especially if children have complex living arrangements and complex needs. Table 3 presents the ratings ascribed by FDRPs to the eight apps with a calendar function. The first task required a customized schedule involving an every-other-weekend arrangement and incorporating a regular Tuesday overnight stay with the minority-time parent. Drop-off and pick-up times were also required to be specified (see Appendix Table A1).

FDRPs found the calendar function the most challenging and time-consuming function to use. Only three apps had calendars that had median ratings above 5 out of 10: *Talking Parents* (“7”), *2forkids* (“6”), and *Fayr* (“5.5”).

Expense tracking

Money can act as a lightning rod for other issues, and as a wedge between otherwise caring and competent parents (Moloney et al., 2010). Keeping track of child-related expenses (outside of, or including, child support) after separation is especially important for many families on the breadline. While apps can play a useful role here, detailed specification of who owes what to whom can run the risk of fueling conflict and turning parents into petty accountants.

TABLE 4 Expense tracking: Mediator rating scores and overall descriptive statistics.

Dyad number – Rater number	2forkids	2houses	Amicable	AppClose	Divvito	Fayr	OFW	Peaceful parent	Talking parent
How easy was it to send a receipt?									
Rating 1–1 ^a	8	c	c	N/A	N/A	NA	c	N/A	N/A
Rating 1–2	6	3	c	N/A	N/A	6	c	N/A	N/A
Rating 2–1	5	2	c	N/A	N/A	9	c	N/A	N/A
Rating 2–2	5	10	c	N/A	N/A	8	c	N/A	N/A
Rating 3–1	c	8	5	N/A	N/A	10	5	N/A	N/A
Rating 3–2	c	8	10	N/A	N/A	10	8	N/A	N/A
Descriptive statistics									
Min	5	2	b	N/A	N/A	6	b	N/A	N/A
Max	8	10	b	N/A	N/A	10	b	N/A	N/A
Mean (SD)	6 (1.4)	6.2 (3.5)	b	N/A	N/A	8.6 (1.7)	b	N/A	N/A
Adj mean ^d	6.0	6.2	b	N/A	N/A	8.6	b	N/A	N/A
Median	5.5	8	b	N/A	N/A	9	b	N/A	N/A
How easy was it to request reimbursement?									
Rating 1–1 ^a	6	c	c	N/A	N/A	9	c	N/A	N/A
Rating 1–2	8	2	c	N/A	N/A	7	c	N/A	N/A
Rating 2–1	c	1	c	N/A	N/A	9	c	N/A	N/A
Rating 2–2	5	10	c	N/A	N/A	8	c	N/A	N/A
Rating 3–1	6	8	6	N/A	N/A	10	2	N/A	N/A
Rating 3–2	7	10	8	N/A	N/A	10	5	N/A	N/A
Descriptive statistics ^e									
Min	5	1	b	N/A	N/A	7	b	N/A	N/A
Max	8	10	b	N/A	N/A	10	b	N/A	N/A
Mean (SD)	6.4 (1.1)	6.2 (4.4)	b	N/A	N/A	8.8 (1.2)	b	N/A	N/A
Median	6	8	b	N/A	N/A	9	b	N/A	N/A

Note: $N = 6$ rater observations per app.

Source: Post-Separation Parenting Smartphone Apps study (2022).

^a‘Rating 1–1’ denotes randomly allocated Dyad 1–Person 1; ‘Rating 1–2’ denotes randomly allocated Dyad 1–Person 2; etc.

^bRater could not send a record of a message exchange or calendar / schedule change in allocated time.

^cToo few trials to estimate.

^dAdj mean = covariance-adjusted mean to address non-independent observations due to 6 of the rater dyads doing multiple trials across the 27 trial sessions.

^eCovariance-adjusted means not shown because there is no other covariance structure given the sparseness of the data—i.e., the models simply reproduce the raw means.

Table 4 presents the ratings ascribed by FDRPs to three apps they were able to use to track child-related expenses. Some apps had provision for tracking child-related expenses, but the FDRPs were unable to complete the set tasks in the allotted time.

Of the seven apps that had an expense tracker, three were successfully evaluated: *Fayr* (median rating = ‘9’), *2houses* (median rating = ‘8’), and *2forkids* (median rating = ‘6’).¹⁶

¹⁶Some of the American apps with expense tracking/sharing functions could only work with access to American banks, and thus could not be readily tested in Australia. Since our evaluation, some apps (e.g., Our Family Wizard) have released new expense management functions.

TABLE 5 Downloading reports: Mediator rating scores and overall descriptive statistics.

Dyad number – Rater number	2forkids	2houses	Amicable	AppClose	Divvito	Fayr	OFW	Peaceful parent	Talking parent
How easy was it to send a record of a message exchange?									
Rating 1–1 ^a	N/A	PC only	3	9	3	^c	PC only	9	8
Rating 1–2	N/A	PC only	7	^c	0	7	PC only	10	8
Rating 2–1	N/A	PC only	5	7	8	10	PC only	6	6
Rating 2–2	N/A	PC only	^c	8	7	9	PC only	9	8
Rating 3–1	N/A	PC only	^c	8	4	^c	PC only	6	6
Rating 3–2	N/A	PC only	^c	7	2	^c	PC only	^c	9
Descriptive statistics									
Min	N/A	PC only	^c	7	0	^c	PC only	6	6
Max	N/A	PC only	^c	9	4	^c	PC only	10	9
Mean (SD)	N/A	PC only	^c	7.8 (0.8)	4.0 (3.0)	^c	PC only	8.0 (1.9)	7.5 (1.2)
Adj mean ^d	N/A	PC only	^c	7.6	4.0	^c	PC only	7.7	7.5
Median	N/A	PC only	^c	8	3.5	^c	PC only	9	8
How easy was it to send a record of a calendar/schedule change?									
Rating 1–1 ^a	N/A	PC only	^b	^b	N/A	^b	PC only	N/A	6
Rating 1–2	N/A	PC only	^b	^b	N/A	5	PC only	N/A	8
Rating 2–1	N/A	PC only	2	7	N/A	10	PC only	N/A	6
Rating 2–2	N/A	PC only	^b	^b	N/A	^b	PC only	N/A	8
Rating 3–1	N/A	PC only	^b	^b	N/A	8	PC only	N/A	6
Rating 3–2	N/A	PC only	^b	^b	N/A	8	PC only	N/A	9
Descriptive statistics ^e									
Min	N/A	PC only	^c	^c	N/A	5	PC only	N/A	6
Max	N/A	PC only	^c	^c	N/A	8	PC only	N/A	9
Mean (SD)	N/A	PC only	^c	^c	N/A	7.8 (2.1)	PC only	N/A	7.2 (1.3)
Median	N/A	PC only	^c	^c	N/A	8	PC only	N/A	7

Note: $n = 6$ rater observations per app.

Source: Post-Separation Parenting Smartphone Apps study (2022).

^a‘Rating 1–1’ denotes randomly allocated Dyad 1–Person 1; ‘Rating 1–2’ denotes randomly allocated Dyad 1–Person 2; etc.

^bRater could not send a record of a message exchange or calendar / schedule change in allocated time.

^cToo few trials to estimate.

^dAdj mean = covariance-adjusted mean to address non-independent observations due to 6 of the rater dyads doing multiple trials across the 27 trial sessions.

^eCovariance-adjusted means not shown because there is no other covariance structure given the sparseness of the data—that is, the models simply reproduce the raw means.

Downloading reports for legal purposes

One of the key selling points for a post-separation parenting app is the ability to download reports of communications or events as evidence for courts. For some parents, this function might be needed in the short- to medium-term. In other instances, where there is ongoing high conflict, entrenched interparental hatred, and /or ongoing coercive control and safety concerns, the ability to provide evidence of menacing communication or breaches of court orders is likely needed in the long term. Table 5 presents the ratings ascribed by FDRPs to the three apps they were

TABLE 6 App overall usability rating (1–7^a): Mediator rating scores and overall descriptive statistics.

Dyad number – Rater number	2forkids	2houses	Amicable	AppClose	Divvito	Fayr	OFW	Peaceful parent	Talking parent
Overall, how would you rate the user-friendliness of this app?									
Rating 1–1 ^b	4	1	3	4	4	4	3	3	4
Rating 1–2	4	3	4	4	3	3	2	5	4
Rating 2–1	4	2	1	4	5	5	3	4	2
Rating 2–2	5	3	2	4	6	5	3	5	3
Rating 3–1	4	5	3	3	3	5	3	5	6
Rating 3–2	3	5	3	3	4	4	2	5	5
Descriptive statistics									
Min	3	1	1	3	3	3	2	3	2
Max	5	5	3	4	6	5	3	5	6
Mean (SD)	4 (0.6)	3.2 (1.6)	2.7 (1.0)	3.7 (0.5)	4.2 (1.2)	4.3 (0.8)	2.7 (0.5)	4.5 (0.8)	4 (1.4)
Adj mean ^c	3.6	3.2	3.0	3.8	4.0	4.1	2.4	4.6	3.5
Median	4	3	3	4	4	4.5	3	5	4

Note: $N = 6$ rater observations per app.

Source: Post-Separation Parenting Smartphone Apps study (2022).

^a1 = “Worst imaginable”, 2 = “Awful”, 3 = “Poor”, 4 = “Fair”, 5 = “Good”, 6 = “Excellent”, 7 = “Best imaginable”.

^b‘Rating 1–1’ denotes randomly allocated Dyad 1–Person 1; ‘Rating 1–2’ denotes randomly allocated Dyad 1–Person 2; etc.

^cAdj mean = covariance-adjusted mean to address non-independent observations due to 6 of the rater dyads doing multiple trials across the 27 trial sessions.

ultimately able to use to download messages, etc. *Our Family Wizard* and *2Houses* were not rated on this task because messages and other information must be exported on a PC or Mac desktop; *2forKids* was also not rated as it did not appear to have this feature on either phone or desktop.

Three apps were rated highly by FDRPs with respect to the ability to download messages: *Peaceful Parent* (median rating = ‘9’), *Talking Parents*, and *AppClose* (median rating = ‘8’). With respect to downloading parenting-time schedules and children’s activities, two apps were also rated highly: *Fayr* (median rating = ‘8’) and *Talking Parents* (median rating = ‘7’). FDRPs found some of the downloading document functions to be difficult to navigate within the allocated time. There was also much variability in whether certain types of messages (e.g., abusive messages, threats etc.) could be downloaded separately, and whether precise time periods could be specified to avoid getting years of detailed communication or regular activities. There was no capacity within each trial to examine the format and content of what was exported, only the process of the export function.

Overall app ratings

To recap: we focused on app features because, as we have shown, post-separation parenting apps vary in the number, nature, and usability of their features. Comparing one app with another is to compare an apple with an orange. Moreover, some separated parents may be more interested in an app that has one highly-rated feature (be that messaging, a shared calendar, or the ability to download evidence) than an app that has a suite of not-so-good features. Two apps in tandem may be better than one for this reason.

Table 6 presents the overall ratings for each app to join the dots of the detailed app feature ratings presented above. At the end of rating trials, FDRPs were asked: “Overall, how would you rate the user-friendliness of this app? Response options included: 1 = ‘Worst possible’, 2 = ‘Awful’, 3 = ‘Poor’, 4 = ‘Fair’, 5 = ‘Good’, 6 = ‘Excellent’,

7 = ‘Best imaginable.’ In no way should the following results be treated as either an endorsement or dis-endorsement of an individual app or app feature. It is crucial that an app's feature(s) match a user's needs (especially safety needs), budget, and circumstances.

Table 6 shows that none of the apps was rated by FDRPs as ‘Excellent’ or ‘Best imaginable’. Only one app (*Peaceful Parent*) was rated as ‘Good’ (median rating = ‘5’); *Fayr* was rated ‘Fair’ to ‘Good’ (median rating = ‘4.5’). Four other apps were rated as ‘Fair’: *Divvito*, *Talking Parents*, *2forkids*, and *AppClose* (median rating = ‘4’). Star ratings ranging from one to five stars told a similar story. All 10 apps received a rating of between 2 and 3.5 stars. No app received an extreme rating of 1 star or 5 stars. Our ratings varied markedly from many of those on the Apple app store (see Table 1).

The most surprising—and arguably the most important—result was the low level of support by FDRPs for recommending an app to a family experiencing or with a history of domestic violence (discussed below).

In mediators' own words

Finally, we offer some of the FDRPs' reflections on their overall experience of the rating trials. For several FDRPs, the experience of being able to test some of the apps changed their generally positive attitude toward co-parenting apps. One female FDRP, for example, commented: “I feel like I have quite a high expectation about what these apps should be like, and it's [the study] burst my bubble about that”. In another app trial she reported:

I thought that we were going to find some really excellent resources to share with clients. So I'm left feeling like at the end of this I've got nothing new to share with them. But I know now that I would not recommend to them [those apps] that I have in the past.

Her male counterpart in the same session immediately responded:

I feel a little bit the same. I was a little underwhelmed as well. I had built an app in my mind ... as to what it could, should and would be able to do. It was a bit of a reality test to say “OK they're not quite as flash as I thought they were going to be.” And they're a bit clunky—like they're all, even this one, which I think is probably the best of them—is just a bit clunky to use.

One of the more tech-savvy FDRPs in the study commented: “I probably won't mention any apps [in future] until I can test it and make sure that it works.”

The above set of views captured the flavor of many of the FDRPs' comments during the trials. By contrast, another FDRP found one app that she really liked because of its ability to control the number of messages received each day, and the time of day they would be received:

I think I'm a pretty “app skeptical” person. But I was really surprised at how helpful I could anticipate the app would be. I was thinking about these clients that I had yesterday, where the lady was saying that as part of her parenting agreement, she wanted to limit the number of times that she gets communication from the other parent. She wanted just a whole lot of restrictions like that. And he was saying “No, I don't think that I can limit the number of times in the way that you want me to because I think there's a lot of stuff that we need to share, and a lot of questions that we need to ask of each other”.

I think that some of those functions could really help her to self-manage the problems that she faces. They wouldn't all solve *his* problems, which is he wants to get a response back within a certain time frame. So, they'd still have a conversation about that, and what's a reasonable time frame to respond.

But at least it could help shield her from a sense of harassment, and she wanted an app. ... I think also in cases where people really feel like they need a paper trail—a record of communication; where people feel like they've been “gaslighted”—they think they've heard one thing but it gets denied by the other person. If they have their communication restricted to use of that app, they'll be that record—it can't be deleted. So that could be helpful. I could definitely see it could be really useful.

This FDRP's experience with an app was in stark contrast to other FDRPs' comments.

DISCUSSION

There is a proliferation of commercial post-separation parenting apps but little evidence to support their use as an alternative to traditional communication strategies and generic digital communication tools. In this complex and rapidly evolving digital landscape, family law professionals are increasingly being asked about, and/or to suggest apps. In the present study, we sought to collect independent data using small-*n* HCI methods along with more traditional multiple methods. In doing so, we take a small first step in the development of an evidence base on the usability of popular post-separation co-parenting apps.

Limitations

Before summarizing our key findings, six study limitations warrant mention. First, we only appraised apps available in the Australian app stores that met our inclusion criteria. There may well be other apps—including web-only apps¹⁷—available in other countries with features superior to those examined in our study. Second, our rating data are drawn from a small non-probability purposive sample of FDRPs. That said, we believe that their experience working with high-conflict couples has strengthened the study, as it has made them more aware of the potential negative consequences of using a co-parenting app in challenging post-separation situations. Nonetheless, no claim is made that our results generalize to the broader population of family mediators in Australia or elsewhere. To what extent FDRPs' ratings might reflect those provided by separated parents is also unclear. With no efficacy studies, testing the apps with separated parents would be unethical. Third, FDRPs did the trials “cold”—that is, they were using the app for the first time under timed conditions with no training or tutorials. We adopted this approach in the belief that many separated parents are likely to simply download the application and try it rather than do any of the available in-app or YouTube tutorials. The trials also assumed buy-in from both parents. Fourth, apps come and go, and frequently update.¹⁸ Our results are already outdated for some features in some apps. Fifth, each app was rated three times by different FDRP pairs, with each session limited to 90 minutes. More trials would have improved the reliability of measurement and provided greater statistical power, thereby allowing the use of more powerful hierarchical statistical models. Finally, the presence of coercive control or more lethal dynamics was not a focus of the present study. Empirical data on technology-fueled abuse warrants its own study.¹⁹ Our data nonetheless offer valuable insights into the useability of different apps and app features and provide a useful evaluation framework for future studies. To our knowledge this is the first study of its kind.

¹⁷Once such app in Australia is *Amica*: <https://amica.gov.au/> While *Amica* is primarily a tool “for couples to agree on parenting, property and money issues when they separate”, and currently contains a shared calendar only, there are plans for the parenting module to be expanded to include other parenting functions. *Our Children Australia* is also a web-only app.

¹⁸We found that over a period of 4 years, 50% of all apps identified came on to the market, while 28% were no longer available or supported ($N = 42$ apps, unpublished data). Churn is a big part of the app story.

¹⁹One of our team (Irving) is currently conducting such a study.

Key findings

Four clear findings emerged. First, many FDRPs changed their apparent enthusiasm for post-separation parenting apps once they had used the apps themselves. This was a consistent theme through most of the 30 trials. Second, of the 9 apps evaluated, all were rated by FDRPs, on average, somewhere between “Poor” to “Fair”. In other words, none was rated “Worst imaginable” or “Awful” or, at the other end of the spectrum, “Excellent” or “Best imaginable”. Contrary to techno-optimism, there is no cheap, quick and easy fix for strained or menacing post-separation communication. Third, the features of some of the best-known apps were not rated as highly as those of some of the lesser-known apps. Finally, the messaging function in almost all the apps was rated relatively highly by FDRPs. By contrast, FDRPs found the shared calendar function to be the most challenging function to use. The expense tracking function, as well as the downloading function, also involved challenges for FDRPs.

Where next?

First-generation studies—as represented by the studies outlined earlier—sought to identify which digital technologies, in the broadest sense, were most commonly used by divorced families, as well as how and why they were used. Second generation studies—of which ours may be an early example—extend prior work by introducing new methods to improve understanding of the benefits and challenges of co-parenting apps according to the architecture of apps and the needs of separated parents.

The obvious next step for future research is for commonly used post-separation parenting smartphone apps to be rigorously evaluated for efficacy and safety. In addition, post-separation parenting apps can—and often do—access large amounts of highly personal and sensitive information (e.g., children’s names, ages, health information). Because these data can potentially be sold off or misused, a detailed investigation into the security and privacy risks associated with popular co-parenting apps is needed. An understanding of these issues is generally beyond the expertise of most users. Third, the ability to directly monitor communication between parents by a neutral independent third party (e.g., a Parenting Coordinator) and for that person to be able to intervene, if necessary, may be a powerful intervention strategy that warrants its own study. Further, an important study in its own right—as alluded to by Odom et al. (2010)—is the involvement of children in digitally mediated communication between parents, and between parents and children. Do children play the role of tech support or “technology brokers” by helping parents to install and use co-parenting apps (Correa, 2015, p. 105)? What effects—if any—does this, or parents’ use of co-parenting apps after separation more broadly, have on children? Is there value in children having access to a shared calendar but not to the messaging function?²⁰ These are important questions to be explored. Finally, the use of creative methods involving HCI methods in tandem with more traditional mixed or multiple methods—such as the one developed for the present study—hold much promise for assessing new and emerging post-separation parenting apps.

In many ways, we see this research as making an important contribution to the future refinement and development of post-separation parenting apps, ideally guided by the principles of “Safety by Design.” Safety by Design is a recent Australian initiative by the Office of the eSafety Commissioner (no date, web p. 1) which seeks to “make digital spaces safer and more inclusive to protect those most at risk.” Unlike the frequently adopted “Release early–Fix later” approach (Ruiz et al., 2015), Safety by Design aims to protect vulnerable groups by encouraging tech companies to anticipate, detect, and eliminate potential online harms very early in the design process (Office of the eSafety Commissioner, n.d.).

Safety by Design is important in the family law context because poor app design can facilitate a range of potential harms—especially where parents have complex needs (e.g., substance abuse, mental health issues), where there is

²⁰See, e.g., *2homes* and the *2homes kids* app: <https://www.2homes.com/en/>.

entrenched interparental conflict or deep hatred, and/or where one parent uses or has a history of using violence. The extent to which Safety by Design principles have been incorporated into popular post-separation co-parenting apps remains unclear, aside from the collection-of-evidence function.

CONCLUSION

Elsewhere (Payne et al., 2022) we have argued that it is important that family law professionals have a working knowledge of a range of apps, and at least some hands-on experience with apps they are recommending. Of concern is that some judicial officers are mandating the use of specific apps in high-conflict cases, at times without a sunset clause. These orders potentially lock parents into something that may not be fit for purpose—or worse, that may be unsafe—in the short- to longer-term. We argue that such orders are inappropriate given that (a) post-separation parenting apps have not been evaluated to demonstrate efficacy or safety, and (b) little is known about when, how, for whom, and under what circumstances these apps are likely to be most effective. If individuals are required by courts to use a specific app, we contend that governments should provide a free or inexpensive app that has been found to be effective—or at least safe—to use.

The mandating and recommending of apps raise interesting and complex questions about duty of care and responsibility. The break-neck speed at which digital technology moves may have blinded us to our ongoing responsibilities to end users and the extent to which technology can solve complex human relationship problems (Morozov, 2014).

Finally, in no way should our data be treated as an endorsement of, or warning against the use of, any particular app or app feature. It is crucial that an app's feature(s) match a user's needs (especially safety needs), budget, and circumstances. Most apps could work well or badly depending on the situation. Keeping all information in one place, setting clear boundaries for communication, and the ability to collect evidence are three clear potential benefits of co-parenting app use—even if only as an interim measure. At the same time, some apps or app features might inadvertently fuel conflict, foster litigiousness, or become technologies of power, control, and abuse.

Our hope is that the present study encourages family law professionals to think carefully about whether a post-separation parenting app, or set of apps with certain features, can help maximize positive communication, help keep family members safe, and improve the lives of children and their parents following separation.

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TABLE A1 Structured role-play tasks.

1. MESSAGING FUNCTION (3 tasks: 8 min)	
Context: Parent A has found out through a mutual friend that their co-parent has a new partner. Use the app's messaging functions to play out this situation for a few minutes	
Task 1	Parent A: Start a conversation with your co-parent about their new partner. Initially include some offensive language in your messages for the purpose of testing any language controls in the app.
	Parent B: Respond to your co-parent to keep the conversation going for several brief exchanges. Include offensive language in your replies to test the app's language controls.
	Both parents: Check when your messages were sent (time, date) & whether your messages were seen and opened by the other parent.
Task 2	Both parents: Try to edit a message that you have sent. (This should not be possible.)
Task 3	Both parents: Try to delete a message that you have sent. (This should not be possible.)
2. SHARING CHILD-RELATED EXPENSES (2 tasks: 10 min)	
Context: Parents A and B agree to split expenses for soccer and piano (see the receipts in the phone's photo gallery.)	
Task 1	Parent A: Use the app to upload & send the other parent a receipt for a new piano book for Arti (\$60), requesting 50/50 cost share
	Parent B: Use the app to upload & send the other parent a receipt for new soccer boots for Eli (\$200), requesting full reimbursement as you paid for the last set.
Task 2	Parent A: Use the app to upload & send the other parent a receipt from the school for trumpet hire for Eli (\$100), requesting full reimbursement as you paid for the last term.
	Parent B: Use the app to upload and send the other a receipt for new school shoes for Arti (\$100), requesting they pay 60% of the cost (for example, \$60).
3. SHARING INFORMATION (2 tasks: 10 min)	
Context: You have agreed to use this app to share & store important documents related to the children's education, health and more.	
Task 1	Parent A: While in your care Arti has a fever and goes to the Doctor who decides Arti needs to be tested for COVID-19 (see the photos in the phone's gallery). Use the app to share the relevant health information, such as the test results.
	Parent B: You took Eli to the school assembly where they received a certificate for completing a spelling bee (see the photo in the phone's photo gallery). Use the app to share this moment with Parent A. Upload a photo of Eli getting their certificate and share it in the app.
	Both parents: Check that the communication and documentation have been received.
Task 2	You agree that you do not want this data to be shared on the app. Both parents: delete the photo that you shared.
4. CALENDAR FUNCTION (3 tasks: 20 min)	
Task 1	Parent A: Use the app's calendar to add the agreed parenting arrangements for overnight stays. Parent A has Eli and Arti 60% of the time: every Tuesday overnight from 3 pm, and alternating Thursday from 3 pm until Sunday 10 am.
	Parent B: Use the app's calendar function to schedule an extracurricular activity. Enroll Eli in weekly soccer practice starting on Saturday mornings from 10 to 11 am, starting in a fortnight and going weekly for 8 weeks.
	Both parents: Let each other know when you have finished your activity and check that you can see what the other parent has done.
Task 2	Parent A: Use the app's calendar function to schedule an extracurricular activity. Enroll Arti in piano lessons on Tuesday evenings from 5 to 6 pm on an ongoing basis.
	Parent B: Your work arrangements have changed. Update the calendar to reflect a new parenting arrangement. Change the schedule to a 50/50 split starting on Sunday at 6 pm and ending on following Sunday at 5.30 pm.

TABLE A1 (Continued)

4. CALENDAR FUNCTION (3 tasks: 20 min)	
	Both parents: Let each other know when you have finished your activity and check that you can see what the other parent has done.
<i>Task 3</i>	Please only attempt this task if one parent was successfully able to enter a parenting schedule into the calendar, if not—skip this task.
	Parent A: Arrange to swap a weekend so that you can go on holiday with Eli and Arti.
	Parent B: Arrange to swap a weekend so that you can take Eli and Arti to the circus.
	Both parents: Let each other know when you have finished your activity and check that you can see what the other parent has done.
5. DOWNLOADING DOCUMENTS (2 tasks: 10 min)	
Context: Both parents are each pursuing some legal action and would like proof of the interactions to take with them to their respective lawyers.	
<i>Task 1</i>	Both parents: Download one of each of the following from the app (Time period: 1 November 2021 to today). It does not matter if you download all together (if the app allows) or separately. A message exchange; A calendar change; An expense claim; A shared file (e.g., the spelling bee certificate or COVID-19 result).
<i>Task 2</i>	Both parents: Send these documents to your lawyer ([xxx]@anu.edu.au). Feel free to use the app's share function (if available) or the phone's Gmail account to do this task.
6. OTHER FUNCTIONS (1 task: 5 min)	
Context: There may or may not be other functions in this app that were not part of the previous situations you just went through.	
<i>Task 1</i>	Both parents: Please take the next 5 minutes to explore the app for other features, and experiment with any you find. Think about how this app might be used in high-conflict relationships.