

Evaluating Parent-Child Emotion Talk During Digital Application Use

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Abstract

The increasing use of new digital media, such as digital applications (apps), presents new opportunities for parent-child co-play. Active parent engagement during co-play can promote parent-child emotion talk, which benefits the emotional development of children. One method to prompt parent-child co-play with digital media is through *parent-directed nudges*, which are written suggestions that encourage specific behaviors in children and parents. There is limited research about the effectiveness of parent-directed nudges in digital applications on prompting emotion talk. To address this gap, the current study examined how parent-directed nudges in a digital co-play application affected total parent-child emotion talk in families with 4- and 5-year-old children. Parents and children were assigned a version of the app to interact with at home during a 2-week period. The experimental group received a version with parent-directed nudges that included short prompts to promote parent engagement. I hypothesized that experimental group families would experience a greater increase in total emotion words after the 2 weeks than the control group, whose version did not include nudges. However, I found no significant difference in the change in the total number of parent and child emotion words used between the experimental and control conditions. There was a positive correlation between total parent and child emotion words regardless of condition. This paper also discusses future directions for this type of research.

Evaluating Parent-Child Emotion Talk During Digital Application Use

Active parent engagement during shared activities can promote parent-child emotion talk, which benefits the emotional development of children (Garner et al., 2008; Ornaghi et al., 2011). As families interact with new forms of digital media, such as digital applications (apps), there are new opportunities for parent-child co-play. Despite this, there has been limited research on how to encourage parent-child emotion talk while interacting with apps. The current study investigated how parent-directed nudges (brief suggestions to encourage specific behaviors) in a digital co-play application (OK Play) affected parent-child emotion talk in families with 4- and 5-year-old children.

The Importance of Emotional Competence and Understanding in Children

Emotional competence is the ability to identify and manage one's emotions (Goleman, 1998). Around age 3, children begin recognizing specific emotions they experience (Denham, 1986). After this point, children begin developing a more complex understanding of how multiple emotions can be simultaneously experienced, such as how one may feel both sad and happy to move to a new house (Arsenio & Kramer, 1992). Past literature has demonstrated several benefits in promoting children's development of emotional competence (Garner & Estep, 2001; Di Fabio & Kenny, 2016), which is influenced by several variables, including cognitive, social, and biological factors.

One aspect of emotional competence is emotion regulation, which is the ability to regulate one's emotional reactions (Denham, 1986). A benefit of emotion regulation in children is that it may promote academic success (Graziano et al., 2007). For instance, Graziano and colleagues (2007) found that greater emotion regulation in 5-year-old children was positively correlated with higher literacy and math achievement scores, even after accounting for IQ

differences. The researchers suggest that this positive association may be because children with greater emotion regulation possess better social skills and exhibit fewer behavioral issues than their peers. Acquiring social-emotional competence skills at a young age not only influences short-term academic achievement but also builds a base for later academic achievement (Blair, 2002). These characteristics of children with greater emotion regulation may make teachers more likely to positively engage with them, contributing to the children's academic success. As there are many benefits for children developing emotional competence, researchers explore how to foster emotional competence among children.

The Role of Adults and Families in the Promotion of Emotional Competence

Adults play an integral role in promoting emotion talk with young children to facilitate emotional competence. Emotion terms, cognition terms, desire terms, and perception terms together comprise “mental state talk”; emotion terms include words such as “sad” and “frustrated”. In one study, researchers explored adults' use of mental terms to assess how often adults used words from different mental categories (King & La Paro, 2015). After analyzing transcriptions from classroom discussions between the teachers and their students, the researchers found that adults used emotion terms the least out of the four categories of mental state talk. This result suggests that adults may not adequately expose children to emotion terms in their daily interactions despite the benefits of using emotion-based language with children.

Even unknowingly, adults convey messages to children about which emotions are appropriate to display in various contexts through their emotional responses (Reese & Fivush, 1993). Parents influence the development of emotional competence of their children in various ways. One study explored the effects of sensitive maternal behavior on the development of emotion regulation in their children (Halligan et al., 2013). Researchers recruited families

experiencing high and low psychosocial adversity and observed the mothers' and childrens' emotion regulation over a few years. The researchers found that maternal sensitivity was directly related to emotion regulation in their children, suggesting that insensitive parenting can contribute to underdeveloped emotion regulation in children. These findings demonstrate that how parents regulate their emotions directly influences their children's emotion regulation. This further emphasizes parents' significant role in shaping their children's emotion regulation.

Another study explored how various factors influence toddler emotion regulation, including differences in maternal interactive styles (Calkins et al., 2001). The researchers found that physical affection and positive feedback from parents can positively influence child emotion regulation. They also found that maternal preemptive action, which involves a mother performing something for the child instead of allowing the child to, is correlated with lower emotion regulation in toddlers. This study displays that parent-child interactions influence emotion regulation in children at a young age. Parents can additionally affect their children's emotional competence by giving directive and critical comments (Mathis & Bierman, 2015). In addition to parents, interactions with siblings that include conflict, play, and sibling-parent interaction can influence emotional competence in children (Kramer, 2014).

What is Emotion Talk?

Emotion talk involves verbal interactions that directly reference emotion-related behaviors or an emotion; examples of emotion words include "happy", "mad", and "scared". Exposing children to more emotion talk increases child expression of various mental state terms and improves children's ability to identify someone's emotional state, which is related to emotional competence (Garner et al., 2008). Children of the prekindergarten age group are at a point in development where they expand their understanding of emotions (Denham et al., 1990).

As emotional development is rapidly occurring, facilitating the development of emotional competence at this age is critical in preparing children to navigate complex social situations in the future.

Media and the Promotion of Emotional Competence

Developmental psychologists have begun to explore how media can contribute to emotion regulation and understanding in children in recent decades. One study assessed the effects of exposing 3- and 4-year-olds to vocabulary that describe mental states through print media (Ornaghi et al., 2011). The researchers read books that contained lexicon about mental states to the children throughout a 2-month intervention and found that exposure to these enriched stories promoted the development of emotion understanding and the expansion of metacognitive vocabulary comprehension. This research supports that the content of stories from books that young children are exposed to can influence their ability to understand emotions. Further, this study points to the idea that children as young as 3 and 4 can comprehend and apply information regarding mental states.

In one study, Mares & Woodard (2005) investigated how exposure to prosocial and antisocial television would affect children's social interactions. Prosocial television is broadly characterized as television that depicts positive and or altruistic actions. In contrast, antisocial television is defined as television that displays individuals acting out of negative, selfish motives. After conducting a meta-analysis, the researchers found that exposure to prosocial television promoted the development of social and emotional skills in children. They also revealed that exposure to antisocial television negatively affected children's social. These results demonstrate that the content of media children are exposed to can impact how children express their emotions and interact with others. The types of characters used in media also can influence children's

ability to learn from the media, with some studies suggesting that children learn better from human characters than from animal characters (Larsen et al., 2017).

How media affects children's ability to learn from it can also depend on how the media is viewed (Hirsh-Pasek et al., 2015). Nathanson (2001) conducted a meta-analysis and found that parents can promote prosocial effects in children while watching television through parental active mediation and parent-child discussions about media content. Parental active mediation broadly refers to interacting with children about the television content, including discussing the TV program. As prosocial effects relate to emotional competence (Charbonneau & Nicol, 2002), this study demonstrates that co-viewing television and discussing television content between parents and children can influence emotional competence. These results also suggest that how adults mediate children's exposure to media can influence what the children can take away from it.

Besides television, there are a variety of newer forms of media, and researchers have begun to explore how these may affect learning in children. One study by Rasmussen et al. (2018) investigated how preschoolers' exposure to a specific television program (Daniel Tiger's Neighborhood) and its related mobile app affects the children's emotion regulation and emotion knowledge abilities. The researchers found that children who played with the app and those who played with both the app and watched the show began to use strategies to regulate emotions that were promoted through the show and app. These findings suggest that children can learn emotional regulation skills by interacting with a mobile app. Parent mediation was not controlled when children played with the mobile app, so it is unclear how parent mediation may have influenced the effects found. Some research has suggested that the interactive features of digital apps may require less parental mediation to still promote learning than television (Hirsh-Pasek et

al., 2015). Despite this, more research still needs to be conducted to explore how to utilize digital apps best to promote the development of emotional skills in children through facilitating parent-child emotion talk.

Addressing the Gap in Literature

To address this gap in literature, I sought to answer the question, “How does the prolonged use of a digital application (OK Play) with parent-directed nudges (brief suggestions to encourage specific behaviors) affect total parent and child emotion talk?” I hypothesized that parents and children who interact with the experimental version of the digital application with parent-directed nudges will experience a greater increase in emotion talk after using the digital application for a prolonged period of time compared to the control participants.

Methods

Participants

To assess if a digital co-play application could increase emotion talk between parents and children, researchers recruited parents and their children and collected data between June and December 2021. Participants were recruited from state birth records, social media posts, and the Child Studies Database at Vanderbilt University. There were 77 child participants aged 45 to 59 months old ($M = 52.57$ months, $SD = 3.96$ months, 37 females). This age group of children was chosen because this is a critical period for parent-child interaction (Biringen et al., 2014). Of the children, 58 were from the southern United States, 7 were from the Midwest United States, 7 were from the western United States, and 1 was from Canada. Most children were identified as European American by their parents (75%), followed by multiracial (17%), Asian (3%), Hispanic (1%), African American (1%), and belonging to a race not listed (1%). The children spoke English as their primary language and had no significant developmental delays. Most

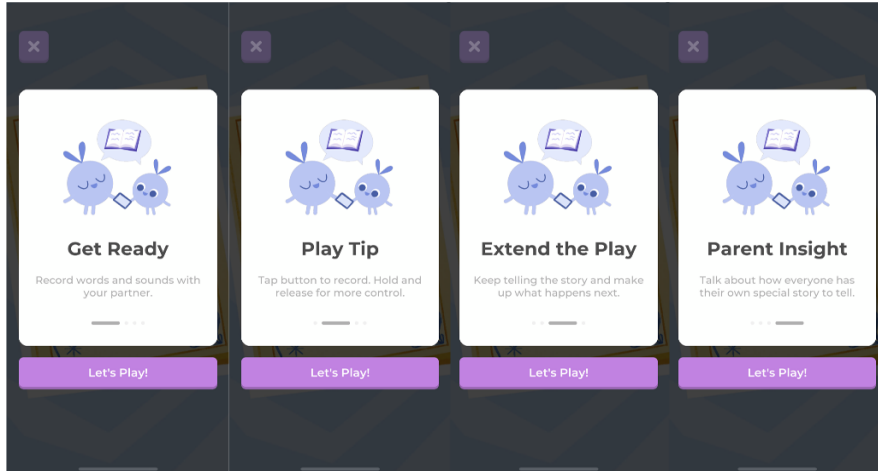
families (81%) had an annual household income of \$75,000 or more. Most parents in the study (90%) had a bachelor's degree or higher. Because the OK Play digital application was only available on the Apple App Store, families were required to own either an iPhone or iPad to participate. There were 38 families in the experimental group and 39 families in the control group. Vanderbilt University's Institutional Review Board approved the study, and parents provided written consent.

Materials

The OK Play digital app, which focuses on promoting socioemotional development through educational games, was the co-play app used in the study. The app has several games designed for co-play that involve activities such as drawing, taking pictures, and making music. Children could also play other app games solo. An experimental version of the commercial app was created specifically for our research purposes. The version of the app used in the experimental condition contained a digital "nudges" feature that gave parents suggestions on interacting with children while playing with the app. In contrast, the version in the control condition possessed no nudges. Parent nudges are short, written suggestions encouraging specific behaviors in children and parents (York et al., 2018). Before each game in the experimental version of the app, four nudges appeared and suggested actions to promote co-play during the game (see Figure 1). An example of a nudge in the app to promote emotion talk-related parent-child interactions is a character saying, "Talk with your child about times they have felt angry" (see Table 1).

Figure 1

Screenshot of Parent Nudges from the Experimental Version of OK Play App

**Table 1**

Descriptions and Examples of Nudges from Experimental Version of OK Play App

Nudge	Purpose	Examples
Get Ready	Gives parents a brief description of the activity; explicitly mentions playing with a partner	Record your words and sounds with your partner Take turns drawing with your partner Take a series of photos with your partner
Play Tip	Specific parent recommendations for ways to interact during the activity	Try making the different faces together Discuss what disappointed means to you Encourage your child to say the commands out loud
Extend the Play	Ways to connect between the activity and the child's own life	Throughout the day, name the shapes of objects you see Make up a story about your drawing Talk with your child about times they have felt angry
Parent Insight	Explains importance of the activity or provides ways for parents to extend the activity	Listening without judgment helps us learn about others Talk about how you created the drawing using teamwork Understanding facial expressions helps in perspective taking

Design

Participants were randomly assigned to either the control ($n = 39$) or experimental ($n = 38$) condition. Three families in the experimental condition received inconsistent nudges in the OK play app due to glitches in the experimental version: one family received no nudges in their

fifth and sixth play sessions, another family had no nudges in their first and second sessions, and a third family had no nudges on their first and third play sessions. Because including data from these families did not significantly alter the results, they remained in the experimental condition. An additional eight families in the experimental group did not receive any nudges and were reassigned to the control group; once the app had been fixed, researchers replaced these participants with eight more families assigned to the experimental group.

Procedures

Pre- and Post-Test Activities.

As data collection occurred during the COVID-19 pandemic, participants engaged in the study virtually and were instructed to interact with the OK Play app in a way that felt natural for them. Before participating, parents filled out a survey of demographic information. While on a recorded 20 minute Zoom video call with a researcher, parent and child participants played two OK Play games together without the nudge feature: “Silly Word Club” and “Drawing”. In Silly Word Club, a character provided audible suggestions for the child, such as to spin around after hearing a specific word. In Drawing, children and parents were prompted to pass the device back and forth to create a drawing. After this pre-test, some parent-child pairs were assigned to play with a version of the app with nudges (experimental) during the next two weeks to promote parent-child interaction, while the other parent-child pairs were assigned to continue using the no-nudge (control) version of the app during the two weeks. Participants were asked to play on the app for 10 minutes at least 10 times over the course of the study before the final post-test session, and were told to use the app in any way that felt natural for their family—either by co-playing or with the child playing solo. While participants only played two games during the recorded Zoom pre-test and post-test sessions, participants were able to play any game on the

OK Play app during these ten sessions. Participants recorded screen captures of their device screen during play, and audio recorded each play session. They shared the recordings with the research lab. After the two weeks, participants joined a recorded post-test Zoom call and played the same two games as during the pre-test.

Measures

Trained research assistants transcribed the audio recordings of pre-test and post-test game play sessions using CLAN, a program for transcription and transcription analysis in CHAT format. A second research assistant reviewed each completed transcript for accuracy. For the present study, the CHAT transcription format was used and the transcripts possessed a three character speak code (PAR, CHI, or TWI) to account for a parent, child, and app character (“Twiggle”) speaking in each transcript. Each line of the transcript included one of the character speak codes and an utterance; the end of an utterance was identified using syntax, terminal intonation contour, or silence for more than two seconds (Crookes, 1990).

To determine parent and child emotion word use, trained researchers selected 27 emotion words and phrases to identify emotion words in transcripts (Table 2). These words and phrases were adapted from a list of emotion-based words from a previously used coding system (The Mental State Talk System) to fit the current study (Bartsch & Wellman, 1995; Hutchins et al., 2009; Jenkins et al., 2003; King & LaParo, 2015; McElwain et al., 2011) A few other emotion words that were frequently used by the app character (Twiggle) were added to the list. Within CLAN, the KIDEVAL function was used to locate each use of an emotion word. As some of the emotion words could be used in non-emotion state contexts (e.g., “There was, *like*, this big dog”), researchers defined the mental-state and non-mental state uses of the words. The researchers achieved reliability in distinguishing uses that matched the emotion-state definitions

of the words on ~20% of the transcripts, and the remaining words were single-coded. Inter-rater reliability was assessed using a two-way mixed model with a single-measures intraclass correlation. The inter-rater reliability was 0.90.

The KIDEVAL function of CLAN was used to calculate the total number of emotion words uttered by parents and children. I used these calculations to analyze differences in changes in total emotion words for the parents and the children in the control and experimental conditions between the pre-test and post-test sessions.

Table 2

List of the Emotion Words and Phrases

1. Happy	10. Frustrated	19. Worry
2. Sad	11. Pleased	20. Afraid
3. Angry	12. Content	21. Nervous
4. Mad	13. Glad	22. Freaking out
5. Love	14. Cheerful	23. Calm
6. Like	15. Joyful	24. Silly
7. Scared	16. Sorry	25. Bored
8. Surprised	17. Appreciate	26. Excited
9. Miserable	18. Mind	27. Left Out

Analytic Plan

As I was interested in how nudges in the OK Play app affected emotion word use, Welch Two Sample t-tests were used to assess whether or not the mean change in total emotion words between the first and second session significantly differed between the control and experimental participants. In addition to determining how the OK Play app's nudges affected parent-child emotion talk, I investigated if parent and child emotion word use was correlated in the setting of playing with the OK Play application. A Pearson's correlation test was used to determine whether the total number of emotion words used by parents was correlated with the total number

of emotion words used by children throughout the sessions, regardless of experimental or control group status.

Results

Fidelity of Implementation

At the end of data collection, 77 parent-child dyads participated in sessions 1 and 2. During the two weeks of home play sessions, families submitted an average of approximately 8 audio recordings playing with the OK Play app ($M = 8.05$). There was no significant difference between the number of recordings that families in the experimental condition ($M = 8.43$) and families in the control condition submitted ($M = 7.66$).

Descriptives

The changes in the number of emotion words used by parents and children in the experimental and control groups across the two sessions are shown in Table 3. The experimental group parents' total emotion words decreased slightly more than the control group parents' total emotion words (experimental: $M = -1.72$; control group first session: $M = -1.13$). For both groups, children's total emotion words changed a similar amount after the second session (experimental: $M = 0$; control: $M = 0.23$), though the experimental group's use of emotion words increased slightly more.

Parent Emotion Words.

To determine if the change in parents' mean total use of emotion words differed between the control and experimental groups, I employed a Welch two-sample t-test. There was no significant difference in the change in the total number of parent emotion words used between the two conditions (experimental: $M = -1.72$, $SD = 4.89$; control: $M = -1.13$, $SD = 3.31$, $p = 0.25$).

Child Emotion Words.

As shown in Table 3, an additional t-test revealed no significant difference in the change in the total number of child emotion words used between the control and experimental group (experimental: $M = 0$, $SD = 1.92$; control: $M = 0.23$, $SD = 1.42$, $p = 0.36$) (see Table 3).

Table 3

Results of an Analysis Examining Mean Parent and Child Total Emotion Word Changes

Variable	Control		Experimental		<i>p</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
Total Parent Emotion Words	-1.13	3.31	-1.72	4.89	0.25
Total Children Emotion Words	0.23	1.42	0	1.92	0.36

Correlations

To examine if the parent total emotion words and child total emotion words were correlated with each other regardless of condition, I utilized a Pearson's correlation test. There was a positive correlation between the total number of emotion words used by parents and children ($r = 0.57$, $p < 0.01$) (see Table 4).

Table 4

Correlation Between Parent and Child Total Emotion Words

Variable	<i>n</i>	<i>M</i>	<i>SD</i>	1	2
1. Parent total emotion words	75	6.07	5.44	—	
2. Child total emotion words	75	1.91	2.32	.57*	—

*Note. *p < .01*

Discussion

This study examined how parent-directed nudges in the OK Play digital application would affect parents' and children's total use of emotion words. I hypothesized that parent-focused nudges in the OK Play digital application would positively influence the total use of emotion words in parents and children. I found no significant difference in the change in the total number of parent and child emotion words used between the experimental and control conditions. To further investigate the relationship between parent emotion talk and child emotion talk while playing with a digital application, I utilized a Pearson's correlation test to determine if total parent emotion words and child emotion words were correlated for parent-child dyads regardless of condition. This test revealed a positive correlation between total parent and child emotion words in parent-child dyads.

Differences in Total Emotion Word Changes Between Conditions

Past research has revealed that interacting with a digital application can help promote the emotional development of children (Rasmussen et al., 2018). Further, parent-directed nudges in digital media (such as e-books) have been found to promote joint media engagement, which can support children's learning (Griffith & Arnold, 2017; Strouse et al., 2013). However, contrary to my hypothesis, the parent-directed nudges in the OK Play digital app were ineffective at increasing parent-child emotion talk in families. There are multiple possible explanations for this, including an ineffective delivery of the nudges, a lack of parent-child interactions while playing, and the use of nudges unrelated to emotion talk. Differences between the OK Play app and previous effective interventions may suggest implications for promoting parent-child engagement.

Many past studies investigating the effects of parent-directed nudges in digital media formatted the nudges as either notifications sent to parents' smartphones or compulsory messages within the medium, such as on the pages of an e-book (Smythe-Leistico & Page, 2018; Stuckelman et al., 2021; Troseth et al., 2020). These methods of delivering nudges to parents effectively gained participants' attention and increased parent-child talk in families. The nudges in the present study were delivered to participants as a pop-up on the app that could be skipped through by clicking a "Next" button. As parents could pass through the nudges without reading them, parents may not have read and implemented the tips from the nudges. Therefore, the ineffectiveness of the current intervention may have been partly because the skippable nudges were inadequately designed to gain parents' attention.

Previous digital media interventions designed to promote parent-child play have required parents and children to play together for every play session (Troseth et al., 2019). In the present study, participants were given the following instructions for playing with OK Play in the two weeks between the in-lab play sessions: "Use it as you typically would use a play app—either playing with your child or your child playing alone. Whatever makes sense for your family and this app." As parents and children had the freedom to play with the app in any way they desired, the children may have played with it alone and skipped through the parent-directed nudges. This would have reduced the effectiveness of the intervention at increasing emotion talk because parents were not present to understand and implement the tips of the nudges. Additionally, participants were able to play all games on the OK Play app during the two weeks between in-lab sessions. As some of the games on the app could be played alone, children may have chosen these solo games, resulting in less co-play and less opportunity for parents to use emotion talk with their children.

The content of the nudges may have also contributed to the lack of significant change in total emotion words between the experimental and control groups. Previous digital app games intended to improve the emotional knowledge of children (such as Daniel Tiger’s Neighborhood) were solely designed to teach children to understand and recognize emotions (Rasmussen et al., 2018). The parent-directed nudges in the experimental version of OK Play contained suggestions for parent-child interactions related to emotions, such as “Discuss what *disappointed* means to you” and “Talk with your child about times they have felt *angry*” but families also received nudges unrelated to emotions, such as “Take turns drawing with your partner”. These unrelated nudges were created to encourage co-play between parents and children but did not focus specifically on teaching children to understand and recognize emotions. The nudges unrelated to emotions may have promoted other types of conversation, but did not contribute to the present study’s focus on emotion words. Additionally, some of the emotion-related nudges contained prompts that may have contributed to children’s emotional understanding, but did not result in the use of additional emotion words. For example, one nudge stated, “Try making the different faces together.” This prompt may have increased emotion-based co-play, but it did not change my dependent measure of total emotion words.

Correlation Between Parent and Child Total Emotion Words

Previous studies have demonstrated that parents play an essential role in encouraging the emotional development of their children (Calkins et al., 2001; Halligan et al., 2013; Mathis & Bierman, 2015; Racine et al., 2007). Past research has revealed a positive correlation between parent emotion talk and child emotion talk in families in various contexts, such as during storytelling or book reading (Aznar & Tenenbaum, 2013; Martin & Green, 2005). With the relatively recent emergence of digital apps, little research has been conducted about the

relationship between parent-child emotion talk in the context of playing with a digital app. In the present study, the positive correlation between parent and child total emotion words supports the findings of past studies that parent and child emotion talk is correlated. Further, my findings suggest that playing with a digital app sustains similar parent-child shared emotion talk as interacting with other forms of media.

Limitations

One limitation of the present study is that the participants were primarily European Americans. As cultural background influences parent-child interactions and outcomes (Dearing, 2004), the limited representation of cultural backgrounds in this study limits the external validity. Additionally, participants were required to own an Apple product to participate in the study because the OK Play digital application is only available on the Apple App Store. As Apple products are expensive, the study restrictions may have excluded families with lower socioeconomic backgrounds from participating. Future research should include more diverse participants to better understand the effects of using digital applications on parent-child interactions.

To determine total emotion words, trained researchers searched for a list of common emotion words and phrases in the transcripts used in prior research. While this list of 27 emotion words was made to capture most emotion words that parent-child dyads including children of this age would use, the list was not fully exhaustive. Therefore parent-child pairs may have used certain emotion words and phrases that researchers did not find due to the limitations of our list. Families with diverse backgrounds may have used emotion words or phrases that our researchers were not searching for. Future research should capture a more extensive list of emotion words and include terms that may be specific to diverse populations participating in the study.

As data collection occurred during the COVID-19 pandemic, parents' engagement with OK Play may have been limited compared to pre-pandemic times. To have a break during stressful times, some parents give their children more access to digital technology (Guernsey, 2007). Therefore, during this time of working-from-home and school shutdowns, some parents may not have been present to read the parent-directed nudges during the two weeks between the in-lab play sessions, or may have participated inconsistently. Additionally, as families knew they were being watched and recorded by research assistants while playing with OK Play during the pre-test and post-test sessions, they may have acted differently than when interacting with other apps at home.

Conclusion

In the present study, the presence of parent-directed nudges in the OK Play digital app did not significantly increase total parent-child emotion talk in families. Possible reasons for this may have included an ineffective delivery of the nudges, a lack of parent-child interactions while playing, and the fact that the nudges were not all related to emotion talk. Future research should further investigate how the presentation and content of parent-directed nudges affects parent-child talk about emotions. Additionally, more research should be conducted to determine how to design digital apps to encourage parent-child interactions, as this contributes to parent-child discussion of emotions. This research should also involve a more diverse sample of the population, if the aim is to design apps that are effective and accessible to a broader audience.

In the research, there was a positive correlation between total parent and total child emotion words in parent-child dyads. This result with a digital play application builds upon past research that has found similar results in other shared contexts. This finding highlights that digital apps serve as an appropriate context for parents and children to engage in emotion talk.

As parents play an integral role in promoting their children's emotional competence, supporting parent-child interactions that foster this development is essential. The growing use of digital applications presents an opportunity to design interventions that promote parent involvement in supporting their child's emotional competence. By investigating how to design educational co-play apps to promote emotion-related parent-child interactions, effective educational tools can become more accessible to families.

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