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BRIEF RESEARCH REPORT

Enhancing adolescent parent interactions in communication through facilitative playgroups

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Abstract

Adolescent pregnancy can impact the educational attainment of adolescent mothers and language development of their children. However, support services and interventions can mitigate these risk factors. Adolescent mothers have shown success in implementing various language facilitation strategies (LFS) with their children when coached. We developed a triadic language intervention in a facilitated playgroup context to support adolescent mothers' use of language strategies when interacting with their children. The current pilot study utilized a pre-test, post-test descriptive approach to analyze differences in adolescent mothers' language use and parenting behaviors and their children's language use after participation in facilitated playgroups. All adolescent mothers demonstrated enhanced parenting practices. Changes in mothers' and children's language from pre- to post-test were variable across participants. While this pilot study shows promising evidence of the utility of a triadic intervention situated in playgroups with adolescent families, further research is required to address the limitations of this study.

Keywords: adolescent mothers; triadic interventions; language development

Introduction

Caregivers have an influential role on children's development in their earliest years, but adolescent mothers (AMs) may experience certain circumstances that inhibit their knowledge about how to interact with their children (Lanzi, Bert & Jacobs, 2009). Because the adolescent birth rate in the United States is one of the highest of all industrial countries (Martin, Hamilton, Osterman, Driscoll & Drake, 2019), early intervention practitioners will likely work with adolescent families. Thus, practitioners must implement evidence-based practices that support adolescent families holistically when providing services.

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Adolescent families in the United States

The adolescent birth rate in the United States in 2018 was estimated at 17.4 births per 1,000 females aged 15-19 years (Martin et al., 2019). Adolescent pregnancy has academic, financial, and health impacts on AMs, including low high school graduation rates and college completion and higher risk for living in poverty and developing mental health disorders (Hodgkinson, Beers, Southammakosane & Lewin, 2014; Planned Parenthood, 2014). AMs who experience such stressors are less likely to provide their children with contingent responsivity, verbal stimulation, and maternal warmth to facilitate language development (Keown, Woodward & Field, 2001; Lanzi et al., 2009). Toddlers of AMs have been found to perform lower on emerging literacy and language measures than children born to adult parents (Fagan & Lee, 2013), which puts them at risk of being identified as having a language delay and being retained a grade in school (Keown et al., 2001).

Providing social support systems has been shown to increase AMs' academic success, with the potential to impact their future financial attainment and mental health (Harding, Knab, Zief, Kelly & McCallum, 2020). Harding and colleagues (2020) found that six of 13 studies reviewed provided rigorous evidence of an education support program to positively impact AMs' educational progress. As most AMs are women of color and live in poverty (Martin et al., 2019), issues of systemic racism and equity limit their access to social supports and ultimate upward social mobility (Baugh, 2017; Ricks, 2016). AMs have reported viewing local and federal government support programs as inaccessible and complicated because of language and age barriers (Brosh, Weigel & Evans, 2007). Therefore, programs that occur in natural environments, provide social support from caring adults and peers, are strengths-based, and sustain the cultural background of AMs may be most effective in supporting adolescent families (Child Welfare Information Gateway, 2015).

Caregiver-implemented interventions

As a child's first communication partner, a caregiver's ability to facilitate opportunities for their child to engage in communicative experiences impacts children's early language development (Landry, Smith & Swank, 2006; McDuffie & Yoder, 2010). Given the evidence that AMs' children are more likely to experience language delays (Fagan & Lee, 2013; Keown et al., 2001), support programs for AMs to facilitate their children's language development must be enhanced. These programs should be founded on a strengths-based philosophy as AMs often foster a new identity upon motherhood with motivation to be a good mother (Baker, 2009; McDermott & Graham, 2005; Ricks, 2016).

Caregiver-implemented interventions, which encourage caregivers to directly facilitate their child's language skills while being guided by a professional, are a common and effective model for early intervening services (Heidlage, Cunningham, Kaiser, Trivette, Barton, Frey & Roberts, 2020). Researchers have examined the impact of caregiver-implemented interventions on AMs' maternal sensitivity, responsivity, and directiveness (Deutscher, Fewell & Gross, 2006; Firk, Dahmen, Dempfle, Niessen, Baumann, Schwarte, Koslowski, Kelberlau, Konrad & Herpertz-Dahlmann, 2021), use of labeling, contingent responsivity, and scaffolding (Neuman & Gallagher, 1994), use of facilitative reading behaviors (Scott, van Bysterveldt & McNeill, 2016) and quantity and quality of their language production (Christie, 2021). Studies have also shown positive influences on AMs' children's responsiveness (Firk et al., 2021), conversational turns, vocalizations, and vocabulary (Hoffman, Hersey, Tucker & Vohr, 2020; Neuman & Gallagher, 1994), and quantity and quality of language production (Scott, McNeill & van Bysterveldt, 2020) after their involvement in a caregiver-implemented intervention.

Triadic interventions

The triadic model is commonly used to incorporate caregivers into intervention and consists of three participants (i.e., caregiver, child, interventionist) with specific roles, as opposed to a traditional dyadic approach of the interventionist and child. The interventionist facilitates, coaches, and models evidenced-based strategies to support the caregiver in incorporating the strategies within the child's daily routines (Campbell & Sawyer, 2007). Interventionists should get to know the family's culture, values, parenting and communication styles to ensure the interventionist provides therapy and information in a culturally sustaining manner (Hanson, Poulsen & Lynch, 2013). The caregiver participates in the session, actively observes when appropriate, and practices the strategies for interventionist feedback. The caregiver also provides vital information about the child's interests, strengths, daily routines, and may also implement the strategies outside the intervention session.

Triadic interventions have evidence to support their effectiveness in increasing parent responsiveness, the use of adult modeling, and improving a child's communication skills (e.g., Brown & Woods, 2015; Campbell & Sawyer, 2007; Green, Towson, Head, Janowski & Smith, 2018). One context for triadic interventions is through facilitated playgroups in which families gather to participate in play and other activities with the aim to enhance children's early development learning and caregivers' positive behaviors, and to promote social capital across families (Williams, Berthelsen, Viviani & Nicholson, 2018). A systematic review on the effectiveness of facilitated playgroups as a context for triadic intervention indicated positive results of these interventions on various child and adult outcomes, including language development and caregivers' use of LFS (Williams et al., 2018). Green and colleagues (2018) investigated a triadic approach with small playgroups consisting of young children with speech and/or language impairments. The results revealed improved communication skills of the children, and social validity and feasibility according to the adult participants. We identified one study that tested a triadic intervention in a playgroup format specifically with AMs in which AMs increased use of responsive behaviors and LFS and decreased use of directive behaviors, and children demonstrated significantly improved early development skills (Deutscher et al., 2006). Yet, there is no known evidence of the impact of a triadic intervention that is focused specifically on enhancing LFS on AMs' and their children's quantity and quality of language production.

Dialogic reading

Dialogic reading (DR) is a specific type of shared interactive reading following a prescriptive approach (What Works Clearinghouse [WWC], 2010). Following the acronyms of PEER and CROWD, DR encourages caregivers to engage in a targeted dialogue to guide and scaffold children's language skills. Several literacy-focused interventions have shown improvements in AMs' production of child-directed speech (Christie, 2021), use of vocabulary and questioning (Scott et al., 2016), children's participation in literacy activities and vocabulary size (Neuman & Gallagher, 1994), and the quantity and quality of language production (Scott et al., 2020). Abarca, Towson, Ehren, and Taylor (2018) coached one AM on implementing DR strategies when reading to her sons and found a functional relationship between the intervention and the participants' use of DR strategies. While originally developed to be used within a shared book reading context, the strategies implemented in DR are applicable across children's daily routines, such as play

(Coogle, Parsons, La Croix & Ottley, 2020). Thus, the DR LFS were adopted for the current study, as AMs have shown success in implementing reading behaviors when coached by an interventionist.

Purpose

AMs have shown that, when provided with access to proper social support, they can successfully support their children's development (Seitz & Apfel, 1999). AMs may also benefit from programs in a group format, as it may provide them with motivation and peer support from individuals who understand their living situation (Ricks, 2016; Williams et al., 2018). Therefore, we adapted a triadic language intervention in a playgroup context (Green et al., 2018) using the principles of dialogic reading to facilitate AMs' use of language strategies when interacting with their children. To situate the intervention within familiar daily routines, we included activities that are similar to everyday activities, such as book reading, play time, and snack time, and completed the intervention in a playgroup format. Through a small, pilot investigation of the playgroup intervention, we addressed the following research questions:

Question 1: How did AMs' parenting practices, as measured by the PICCOLO, change after participation in a triadic intervention focused on LFS?

Question 2: How did (a) AMs' and (b) their children's mean length of utterance in words (MLU-w), type-token ration (TTR), and total number of utterances change after participation in a triadic intervention focused on LFS?

Materials and Methods

Study design

The current study used a pre-test, post-test descriptive approach to analyze changes in AMs' and their children's rates of MLU-w, TTR, and total number of utterances, and AMs' parenting practices, after participation in a language intervention during facilitated playgroups. The study was approved by the university's Institutional Review Board.

Participants

Four AMs and their young children participated in the study. Inclusionary criteria included that the AM: (a) birthed their first child prior to the age of 18, (b) was enrolled in the target alternative school; and that the child: (c) received childcare at the alternative school campus, and (d) was between 6 and 60 months old.

The median age for the AMs at the beginning of the study was 18 years (range = 17-19). Three mothers were in 12th grade, and one was in ninth. Of the two mothers who reported household income, one reported an annual income less than $24,999 and the other reported an annual income that ranged from $25,000 to $49,999. On the Core Language Score of the Clinical Evaluations of Language Fundamentals, Fifth Edition (CELF-5; Wiig, Semel, Secord & Pearson Education, Inc., 2013), the AMs typically scored below the average range based on the standardized sample. Two children were males and two were females. The children's chronological age ranged from 15 to 22 months, with a

median of 19.5 months. According to the Preschool Language Scales, Fifth Edition (PLS-5; Zimmerman, Steiner & Pond, 2011), the children fell within the average range of the standardized sample. Three mothers and children identified as Black, and one mother and child as Biracial. Two mother-child dyads spoke English and Spanish, while the remaining two spoke only English.

Setting

The study was conducted at an alternative school for AMs in a metropolitan city in the southeast US. The school was designed specifically to support pregnant or parenting adolescents by providing mothers with a traditional education along with parenting courses, playgroups, and free childcare. Data were collected during weekly playgroup sessions which took place in a multipurpose room within the school. Prior to this study, playgroups were typically run by a mental health counselor and consisted of unstructured playtime between AMs and their children.

Measures

Parenting Interactions with Children: Checklist of Observations Linked to Outcomes (PICCOLO; Roggman, Cook, Innocenti, Jump Norman & Christiansen, 2013a)

The PICCOLO is an observational tool used to measure positive parenting behaviors in interactions with their children and consists of four domains: Affection, Responsiveness, Encouragement, and Teaching. Three domains consist of seven items, and the Teaching domain consists of eight items. The items are scored on a three-point scale based on how present that item is during the parent-child interaction. The tool was developed using a sample of 2,043 European American, African American, and Latino American mother-child dyads, of which the children were 10 to 47 months. Interrater reliability correlations of the PICCOLO average $r = .77$. Construct validity for the PICCOLO was established with the Three Bag Mothering Scales (Fuligni & Brooks-Gunn, 2013).

Language analysis

We measured each mother's and child's MLU-w, TTR, and number of total utterances during (one pre-test and one post-test) observations of mother-child interactions using the Systematic Analysis of Language Transcripts (SALT) software. MLU-w describes the average number of meaningful words per utterance (Imeson, Lowe, Onslow, Munro, Heard, O'Brian & Arnott, 2018) and provides information about grammatical proficiency (Brown, 1973). MLU-w has been considered a robust measure of children's language development and as a method to diagnose language impairments in young children (Rice, Smolik, Perpich, Thompson, Rytting & Blossom, 2010). TTR is a ratio of the number of different words to the total number of words (i.e., Token; McKee, Malvern & Richards, 2000). TTR was used as a measure of lexical diversity (Heilmann, Nockerts & Miller, 2010). While TTR and number of total utterances have not been found to distinguish between typical or delayed language development (Watkins, Kelly, Harbers & Hollis, 1995), these measures were included to understand participants' change from pre- to post-test.

Procedures

Recruitment and pre-testing

Participants were recruited during an informational meeting held at their school, during which the first and third authors reviewed the study and explained the consent process. Upon providing consent, the AMs completed the demographic information questionnaires and then they and their children were assessed utilizing the respective standardized language assessments (i.e., PLS-5 or CELF-5) during the school day over a period of two weeks. Mother-child interactions were video recorded in a separate quiet room. Mothers were asked to "play/read as [they] normally would" to their children while being recorded for 5-8 minutes during play and for the duration of the book-reading interaction.

Intervention

The intervention was replicated from Green and colleagues' (2018) study with some adjustments, including the use of DR strategies and materials prepared with young mothers in mind. The intervention consisted of eight 30-minute playgroup sessions across eight weeks, in which four LFS were each targeted for two consecutive weeks. Playgroups consisted of consented and unconsented AMs and all the AMs present received coaching from the interventionists. Lesson plans were adapted from the Green et al. (2018) study and were developed weekly by the interventionists and revised by the third author. While the structure of the playgroups was the same as described in Green et al. (2018), the LFS that were targeted in this study were adopted from the dialogic reading framework (i.e., PEER: prompt, evaluate, expand, repeat).

DR follows the sequence of PEER; PROMPT a child with a question or phrase (e.g., "What did the caterpillar eat first?"), EVALUATE their response (e.g., "Strawberry, yes."), EXPAND on their response either semantically or syntactically (e.g., "[strawberry] It was a juicy strawberry."), and REPEAT the original prompt to allow the child an opportunity to practice the expanded language (e.g., ["What did the caterpillar eat first?"] Strawberry. ["That's right, it was a juicy strawberry. What was the first thing the caterpillar ate?"] (Arnold & Whitehurst, 1994; WWC, 2007, 2010).

Within the prompting portion, there is a recommendation for prompts that support language growth, represented by the CROWD acronym (i.e., completion, recall, open-ended, wh-questions, distancing). COMPLETION prompts allow space at the end of a repetitive or predictable phrase for the child to fill-in (e.g., "And the caterpillar was still…" [hungry]); RECALL prompts focus on events that have already transpired in a story (e.g., "Where was the little egg?" [on a leaf]); OPEN-ENDED prompts do not require a specific response and can be used for descriptions, inferencing or predicting (e.g., "I wonder what will happen to the caterpillar next."); WH-QUESTIONS focus on vocabulary and concepts (e.g., "What color is the caterpillar?" [green]); and DISTANCING prompts connect the current text or play events to the child's life (e.g., "The caterpillar likes to eat strawberries. What do you like to eat when you are hungry?") (Arnold & Whitehurst, 1994; WWC, 2007, 2010).

The dialogic reading framework requires that each strategy be built onto the one directly preceding it. Therefore, each strategy was defined and modeled by the interventionists (at least three times throughout the playgroup session) and practiced by the AMs throughout all aspects of the playgroup sessions. To aid in the AMs' use of the PROMPT strategy and continue with the implementation of the remaining dialogic reading strategies during the shared reading segment of the session, each provided storybook was

scripted with ten prompts, two for each prompt type. Scripts were written by two undergraduate research assistants (RAs) and were revised by the third author to verify that they met the operational definitions.

Interventionists

The interventionists who facilitated the playgroups were a master's student and an undergraduate student enrolled in the Communication Science and Disorders program of a university near the intervention site. They were supervised by a certified speech-language pathologist (i.e., the third author) in each session. To become trained on the intervention, the facilitators first reviewed information on the PIWI framework (which can be found at http://csefel.vanderbilt.edu/resources/training_piwi.html). Then, the facilitators attended a one-hour training session led by the third author to learn about the playgroup structure and the DR framework, as well as review materials and answer questions. The interventionists then practiced utilizing the DR framework with each other prior to the first intervention session.

Materials

The following materials were incorporated during the intervention sessions: Mr. Potato Head, toy cars, nesting cups, toy cash register, Mega Blocks, and play food and kitchen items. Other toys that were in the intervention site may have been utilized as necessary to cater to each child's unique interests. Four storybooks from the "Read Together, Talk Together" Kit A (Pearson Early Learning, 2006) were used during the story time portion of the intervention sessions.

Intervention fidelity

Intervention fidelity was calculated for all eight intervention sessions for the presence of: (a) greeting song, (b) topic introduction, (c) a definition of the communication strategy, (d) a period of play-time for mothers to implement the communication strategy, (e) a period of shared reading for mothers to implement the communication strategy, (f) at least one model of the communication strategy during the discussion, play, and reading periods, (g) snack time, and (h) a farewell song. Intervention fidelity was on average 98%, with a range of 82% to 100%.

Post-testing

After the final intervention session, mother-child interactions were videorecorded. Procedures for post-test video recordings were identical to those used during pre-test video recordings.

Data analysis

Coding framework

To become trained on the PICCOLO, the first two authors viewed a video-recorded instructional presentation and coded practice videos (Roggman, Cook, Innocenti,

Jump Norman & Christiansen, 2013b) to attain inter-rater reliability (IRR). 80% IRR was achieved on two of the four videos and coding for the current study commenced. Once the coders each coded a study video, they met to resolve coding disagreements before observing the next interaction. This structured process was repeated across all eight video-recorded interactions. Domain scores and total scores were calculated by first totaling scores per domain, and then across domains. Domain and total scores were graphed per individual AM across both time points (see Figure 1). As averages are sensitive to extreme values in a small sample, median scores were calculated to represent the participants of this study and are included on the figure.

Inter-rater Reliability (IRR) for Coding

IRR was calculated by the following formula: IRR = (# of disagreements – # of disagreements + agreements)/ (# of disagreement + agreements). Pre-test videorecorded interactions averaged 80.17% IRR. IRR by dyad was as follows: Dyad 1 = 72.41%, Dyad 2 = 93.1%, Dyad 3 = 72.41%, and Dyad 4 = 82.76%. For post-test videos, IRR was calculated as 85.35%. IRR by participant was as follows: Dyad 1 = 79.31%, Dyad 2 = 93.1%, Dyad 3 = 79.31%, and Dyad 4 = 89.66%. The most common disagreement was whether the behavior was scored as a 1 or 2. Disagreements were resolved between the two coders by discussing each discrepancy and deciding on a final rating.

Transcription framework

Two undergraduate students and one graduate student in the CSD program were trained to transcribe the mother-child play and reading interactions. Prior to transcribing, all RAs completed nine online training modules on the SALT software website (https://www.saltsoftware.com/training/self-paced-online-training). Then, the RAs practiced transcribing mother-child interactions from a previous study utilizing the SALT conventions which were checked for accuracy against the master key transcription (created by the first author and checked for accuracy by the third author). RAs received feedback on instances of discrepancies when compared to the master transcription and repeated the process with other sample videos until they received at least 80% accuracy on two consecutive videos.

After completion of the training, the two undergraduate RAs began transcribing the video recorded mother-child interactions for the present study. One RA completed the full transcriptions for the pre-test videos and the other completed inter-rater reliability (IRR) checks on a random 20% of each video's length. Roles were switched for the post-test videos. Then, the third graduate RA checked and corrected the transcriptions specifically for correct morpheme transcription as mandated by the SALT guidelines. Finally, the graduate RA converted each transcription file into the format required by the MLU-w, TTR, and Total Number of Utterances (Miller & Iglesias, 2012). Because the lengths of the mother-child recordings for each dyad were variable, the language measures were then calculated as rates. We divided each language measure (i.e., MLU-w, TTR, and Total Number of Utterances) by the total length of the video recordings. Participant data were graphed per linguistic measure (see Figure 2).
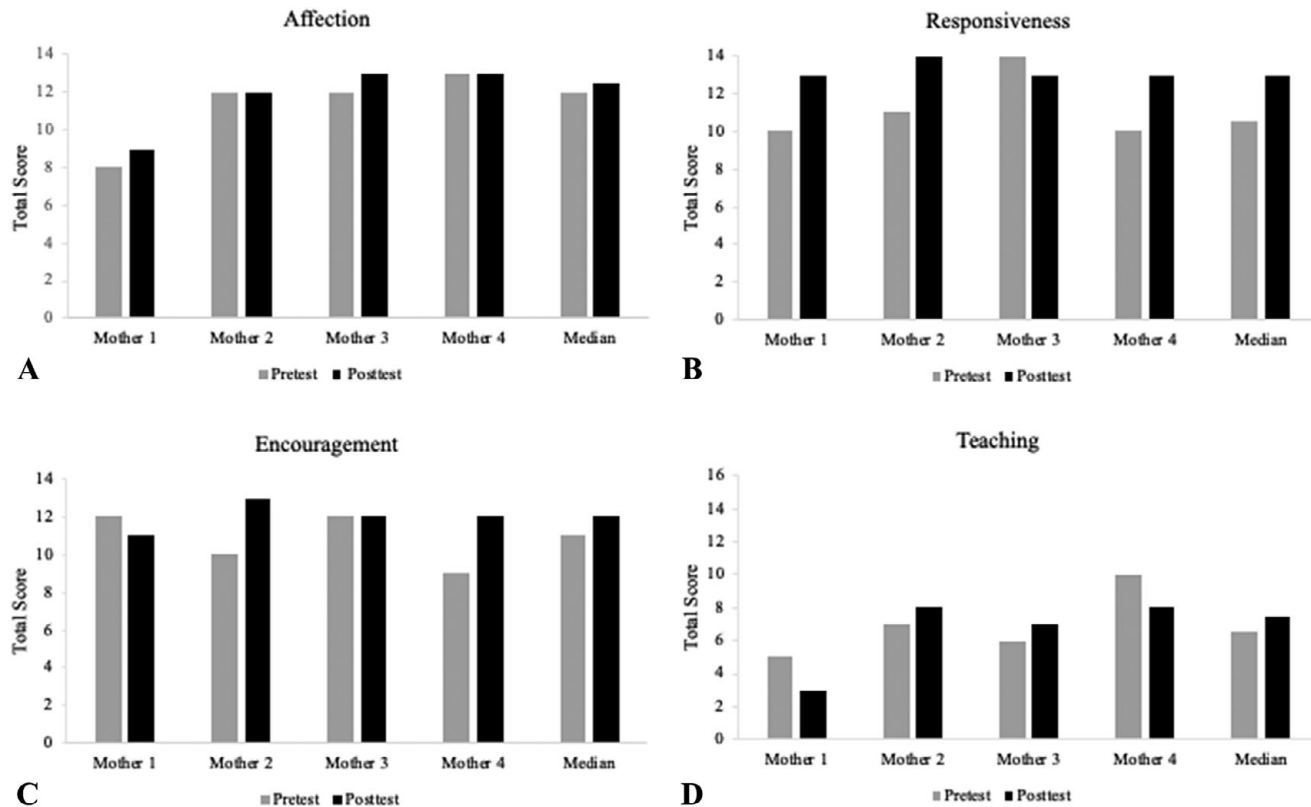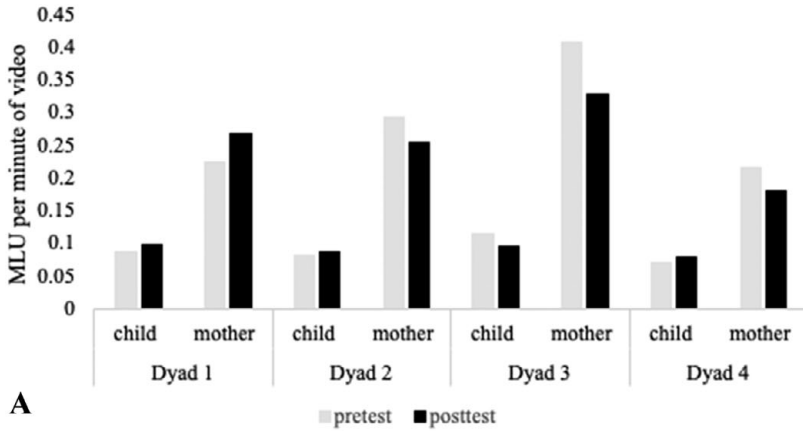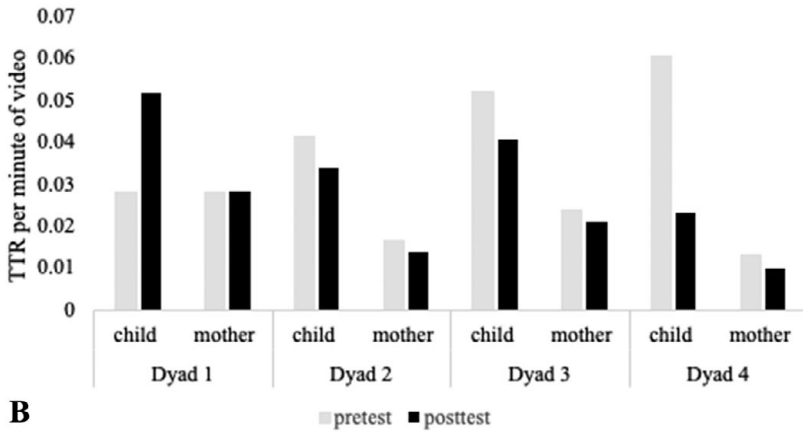
Figure 1. Changes in Parenting Practices from Pre to Posttest

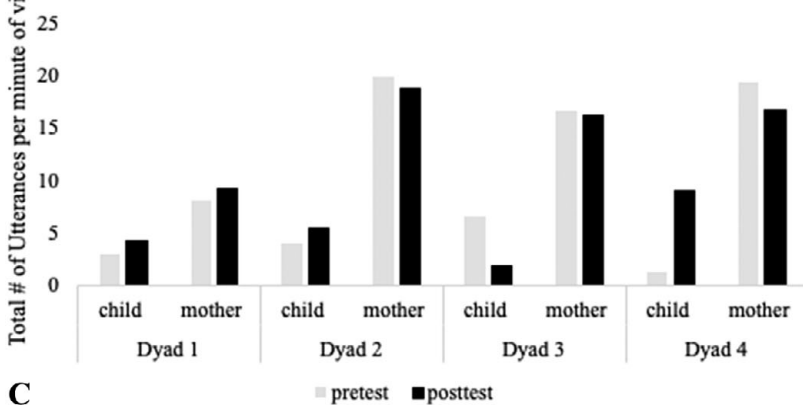## Changes in Rates of MLU from Pre to Posttest

A

Changes in Rates of TTR from Pre to Posttest

B

Changes in Rates of Total # of Utterances from Pre to Posttest

C

Figure 2. Changes in Rates of Linguistic Measures from Pre to Posttest

IRR for transcription

IRR was calculated on a global scale, in which all disagreements were removed from the total number of agreements within the 20% of the video's length that the secondary coder transcribed. To further analyze where the disagreements were occurring, we also calculated IRR on a word level, in which disagreements on the words transcribed were removed from the total number of words transcribed, and on the utterance level, in which disagreements on how utterances were segmented were removed from the total number of utterances transcribed. The average total IRR of the pre-test transcriptions was 87.83%, with an average of 84.33% (range = 71% - 97%) at the word level and an average of 91.33% (range = 90% - 92%) at the utterance level. The average total IRR of the post-test transcriptions was 87.38%, with an average IRR of 92.25% (range = 87% - 96%) on the word level and an average IRR of 82.50% (range = 76% - 92%) on the utterance level. For transcriptions in which the word or utterance level IRR fell below 80%, the graduate research assistant observed the full video recording and made corrections as necessary.

Results

We analyzed how AMs' parenting practices, as measured by the PICCOLO, changed from pre- to post-test to answer research question one. Figure 1 depicts changes in AMs' parenting practices. All mothers increased their total score on the PICCOLO from pre- to post-test and the median score in each category increased from pre- to post-test. Individual scores across categories were variable. Specifically, two mothers increased their score in the Affection domain by one point, while the remaining mothers' scores remained consistent (see Figure 1, Panel A). Three mothers increased their score in the Responsiveness domain by three points after intervention and Mother 3's score decreased by one point (see Figure 1, Panel B). In the Encouragement domain, two mothers' scores increased by two points from pre-test to post-test, Mother 3's score remained consistent at 12 out of 14 points, and Mother 1's score decreased by one point (see Figure 1, Panel C). Two mothers increased their scores in the Teaching domain by one point and the other two mothers decreased their scores by two points (see Figure 1, Panel D).

We then analyzed how AMs' and their children's rates of MLU-w, TTR, and total number of utterances changed from pre- to post-test to answer research question two (see Figure 2). One mother and three children demonstrated increases in MLU-w from pre- to post-test (see Figure 2, Panel A). Three mothers and one child decreased their rates of MLU-w after participation in the intervention. All mothers demonstrated a decrease in their rate of TTR following intervention. Child 1 showed an increased rate of TTR at post-test, and the remaining children demonstrated decreased rates. Regarding rates of total utterances, three mothers decreased from pre-test to post-test and one increased after the intervention. Three children (Child 1 and Child 4) increased the rate of utterances produced and Child 3 decreased at post-test.

Discussion

The purpose of the current study was to explore the utility of a triadic intervention in the context of facilitated playgroups with AMs and their children to enhance mothers' parenting practices and language outcomes for both AMs and their children. This pilot study provided preliminary results that support the use of a triadic intervention in a

facilitated playgroup model, which aligns with previous parent-implemented intervention research conducted with adolescent families (Deutscher et al., 2006; Hoffman et al., 2020; Neuman & Gallagher, 1994). We found that all mothers increased their total scores on the PICCOLO post-test, especially in the Responsiveness domain similar to other studies that have investigated responsiveness in AMs (Deutscher et al., 2006). This is an important finding as it is well understood that parental responsiveness is closely related to children's later language development (Tamis-LeMonda, Bornstein & Baumwell, 2001), including in families of cultural backgrounds outside of the majority population in the United States (Ramírez, 2021). However, the teaching domain presented a challenge for the mothers. It may be that AMs' ability to teach their child about language is influenced by their own linguistic skills. It may be possible that the low language skills of the AMs in this study sample, as seen in the CELF-5 results, impacted their ability to teach their children about language and literacy, even after the triadic intervention. Thus, interventions designed specifically for AMs must consider AMs' linguistic and literacy skills regarding the practices they will be implementing with their children (Scott et al., 2016).

In terms of language production, we found that changes in language use and lexical diversity were variable across AMs, with MLU-w decreasing for three mothers, TTR decreasing for all four, and total number of utterances decreasing for three mothers after participation in the intervention. Interestingly, two of the mothers whose MLU-w and total numbers of utterances decreased made gains in the Responsiveness domain of the PICCOLO after the intervention. This may indicate that these mothers were talking less to allow for a child-led play interaction and were trying to be more responsive to their child's actions, rather than initiating and controlling the interaction (see similar results in Neuman & Gallagher, 1994).

We also found that three children demonstrated increases in MLU-w and total number of utterances and one child demonstrated an increase in TTR. This aligns with one study which found that child vocalizations and conversational turns increased significantly for adolescent families who received a language intervention (Hoffman et al., 2020). However, there was great variability across participants in our small sample, indicating that this intervention alone may not have been sufficient for creating consistent change in participants' language measures in a short period of time.

Limitations and future directions

This study has several limitations, with many opportunities for future directions. We were limited by the small sample size and the lack of a comparison group which restricted our ability to conduct the statistical analyses that are required to understand the direct impact of the triadic intervention on the measured outcomes, as well as the relationships between changes in maternal and child language outcomes. As mentioned above, because we did not have a comparison group and did not collect data on the AMs' implementation of the strategies on which they were coached nor on how the interventionists coached the AMs aside from their adherence to the intervention protocol (as described in the Methods section), we could not establish a causal relationship between the intervention and mother and child outcomes. Further, we recruited participants from one school that was providing additional parenting support to the AMs involved in our study, so confounding variables may have impacted our results. A larger sample size from various sites and regions and use of a randomized control trial design will aid in the development of a triadic intervention that is appropriate and effective for AMs and their children. Recruitment and maintenance of AMs

proved to be difficult in this study, as well as others (Abarca et al., 2018), due to the lack of structured social programs for AMs through which to access them. It is recommended for researchers to develop creative ways to recruit and incentivize AMs to participate in future studies. Finally, services must be individualized to a family's ecology and culture, so the use of interviews or focus groups might allow researchers to investigate how AMs perceive this intervention and what modifications might be necessary to be more appropriate for young adolescent families.

Implications for research and practice

This pilot study aligns with previous research that providing social support to AMs can positively impact their future outcomes (Harding et al., 2020). As parents are their children's first teachers, it is important that AMs are supported to provide the necessary facilitation for their children's development. Clinicians and researchers alike should continue exploring the use of coaching through triadic interventions when working with AMs and their children.

Another aspect of this pilot study that may be important to consider is the playgroup context. The intervention was set with a group of young AMs who may have been experiencing similar social and societal circumstances. As such, the playgroup context may have also provided a type of support group for the young mothers in this study; they may have been able to relate to and support each other through this setting as they were navigating the stress and insecurities that being a parent can bring (Ricks, 2016; Williams et al., 2018). Also, observing mothers that they related to may have facilitated their learning of the intervention strategies. Further research could consider the importance of this social support context, especially for AMs, in their learning of language facilitating techniques.

Conclusion

This study presents promising, yet limited and variable, evidence towards the use of triadic interventions in a facilitated playgroup context to support AM's use of LFS with their young children. AMs showed increased responsive behaviors in their interactions with their children and children's language production largely increased, although results were variable. Future research is warranted to continue the exploration of the impact of playgroup interventions with adolescent families so to best support the success of young families.

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