How Connected Is Parenting Stress and Child Adaptability Through Child Prosocial Talk?

Lindsey Powell
Western Kentucky University, lindsey.powell376@topper.wku.edu

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HOW CONNECTED IS PARENTING STRESS AND CHILD ADAPTABILITY THROUGH CHILD PROSOCIAL TALK?

A Capstone Experience/Thesis Project Presented in Partial Fulfillment of the Requirements for the Degree Bachelor of Arts with Mahurin Honors College Graduate Distinction at Western Kentucky University

By
Lindsey B. Powell
August 2021

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CE/T Committee:
Dr. Timothy Thornberry, Chair
Dr. Sarah Ochs
Dr. Lisa Duffin-Rexroat
ABSTRACT

Previous research demonstrates parenting stress can affect mental health outcomes of children who are exposed to a traumatic event. Child adaptability can significantly affect how a child responds to traumatic events. Thus, it is important to identify factors associated with child adaptability, since such factors could serve as important targets in trauma treatment. Interventions (e.g., Parent-Child Interaction Therapy [PCIT]) have been created for families to learn skills to treat children with disruptive behavior problems. These behavior problems contribute to child maltreatment and trauma. The current study seeks to examine whether parenting stress predicts child adaptability and if this relationship is mediated by observed child prosocial talk as measured by the Dyadic Parent-Child Interaction Coding System (DPICS), an analog behavior observation used to assess parent and child behaviors during PCIT. Parent-child dyads (n = 53) completed a DPICS observation, the Parenting Stress Index (PSI), and the Behavior Assessment System for Children (BASC-2). Linear regression analyses revealed parenting stress predicted a significant amount of variance in child adaptability, \( t(1, 47) = -2.431, p < .019 \), but this relationship was not mediated by child prosocial talk, \( t(2,37) = .049, p < .961 \). Implications, limitations, and directions for future research are discussed.
I dedicate this CE/T to my mamaw, Alice Lindsey, who has always been a voice of wisdom and inspiration in my life.
ACKNOWLEDGEMENTS

I would like to express my gratitude to my supervisor, Dr. Timothy Thornberry, for introducing me to the world of research in psychology. Most importantly, I would like to thank Dr. Thornberry for his patient guidance, encouragement, and advice while working through the CE/T process. Without his guidance and advice, this capstone research experience would not have been possible. I would also like to thank the rest of my committee, Dr. Sarah Ochs and Dr. Lisa Duffin-Rexroat, for taking the time to be a part of this project, as well as my wonderful friends and family who supported me along the way.
VITA

EDUCATION

Western Kentucky University, Bowling Green, KY          August 2021
B.A. in Psychology – Mahurin Honors College Graduate
Honors CE/T: How Connected Is Parenting Stress and Child Adaptability
Through Child Prosocial Talk?

PROFESSIONAL EXPERIENCE

Parent-Child Research Lab, WKU         February 2020-
Research Assistant                 May 2021

Barren River Area Child Advocacy Center     Aug. 2020-
Intern                          December 2020

Associates in Counseling & Psychology           January 2021-
Intern                       May 2021

AWARDS & HONORS

Magna Cum Laude, WKU, August 2021
President’s List, 2020-2021
Academic Merit Scholarship, WKU, 2017-2021

PROFESSIONAL MEMBERSHIPS

American Psychological Association
Psi Chi
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SECTION ONE

Parenting stress affects many domains in the upbringing of a child, and parenting stress is a topic of concern in many communities (McBride et al., 2004). Research concerning the relationship of parenting stress and child language development has shown that parenting stress is related to children’s temperament and oral language skills (Noel, et al. 2008). Higher parenting stress has been shown to lead to fewer child temperament characteristics that would aid in social interaction, along with poorer receptive and expressive vocabulary skills in children (Noel, et al. 2008). Multiple studies suggest that coming from a stressful background and upbringing affects childhood adaptability (El-Sheikh & Meckhalt, 2003; Sanders et al., 2020). More specifically, previous research suggests parenting stress is negatively associated with child adaptability (Ando et al., 2006; Bendell et al., 1986). Providing support to parents to minimize their parenting stress scores has been shown to improve the child’s mental health outcomes and result in less severe health problems overall (Whitson & Kaufman, 2017). Thus, the importance of understanding parenting stress and how it affects child adaptability is a current issue that must be explored.

Defined as “the experience of distress or discomfort that results from demands associated with the role of parenting,” parenting stress could be considered a natural part of the parenting experience (Deater-Deckard, 1998, p. 315). However, this stress becomes an issue when it negatively affects the relationship between a parent and their child. Assessments have been created to explore parenting stress to decrease negative
parent-child outcomes; The Parenting Stress Index (PSI) was developed as a diagnostic or screening tool to evaluate the parenting system and parental stress (Abidin, 2012). The PSI is commonly used to help identify at-risk or problem areas in a parent’s or child’s behavior. Parents whose mental health has declined due to high levels of stress have a more significant potential for child neglect or abuse (Chen & Chan, 2015; Holden & Banez, 1996; Warren & Font, 2015). The assessment of parenting stress can help mental health clinicians better understand at-risk populations to treat and prevent these negative outcomes by increasing parental acceptance (Kochanova et al., 2021).

However, the investigation of child adaptability is an important area of research because children will inevitably face many changes and stressors throughout their lifetime (Devi et al., 2019; Xie et al., 2018). Adaptability is defined as “an individual’s ability, skill, disposition, willingness, and/or motivation to change or fit different task, social, or environmental features” (Ployhart, & Bliese, 2006, p. 13). Child adaptability can be measured through analyzing The Adaptive Skills score of the Behavior Assessment System for Children (BASC-2; Reynolds & Kamphaus, 2004). Previous research has shown that adaptability tends to be positively associated with life satisfaction (Zhou & Weipeng, 2016). Conversely, children with low adaptability tend toward poor behavioral and academic adjustment at school (DiStefano et al., 2003).

One assessment modality to explore child adjustment in parent-child interactions is through observing these interactions in a research and clinical setting. One effective method used to explore parent-child interactions is through analog behavior observations. Analog behavior observations are defined as “the measurement of client behavior in contrived situations designed to be analogous to those encountered in the client’s natural
environment” (Haynes, 2001, p. 74). One method used for treating parent-child interactions is Parent-Child Interaction Therapy (PCIT; Eyberg et al., 2005). Parent-Child Interaction Therapy, or PCIT, is an intervention to help decrease child behavior problems and increase child social skills and cooperation, positively affecting the parent-child interaction (Eyberg et al., 2005). Eyberg et al. (2005) explains the following multifaceted goals of PCIT:

“(A) to provide an observational measure of parent and child behaviors during dyadic interactions as one component of the psychological evaluation of childhood disorders and/or parenting skills; (b) to measure baseline or pre-treatment behaviors occurring in dyadic family interactions; (c) to provide a measure of ongoing progress during therapy that focuses on changing general parent-child interaction patterns; and (d) to serve as a behavioral observation measure of treatment outcome.”

In PCIT, a trained clinician uses a standardized behavioral coding method called the Dyadic Parent Child Interaction Coding System (DPICS; Eyberg et al., 2005). PCIT and the DPICS have undergone rigorous psychometric scrutiny and refinement which have produced a reliable, valid, and effective treatment for parent-child dyads (Eyberg et al., 2005). Originally created to assess children with behavioral disorders and disruptive issues, the adaptability of PCIT and the DPICS as a system can now extend to both clinical and research settings (Eyberg et al., 2005). Due to the extention of PCIT and the DPICS to clinical and research settings, these systems have been used by researchers and clinicians to serve populations around the world (Eyberg et al., 2005).
During the course of PCIT, the therapist may coach the parent through a headset and/or code the analog behavior observation using the Dyadic Parent-Child Interaction Coding system (DPICS; Robinson & Eyberg, 2014). DPICS codes are divided between parent codes and child codes, quantifying vocalizations such as negative talk or praise in the parent-child interaction (Robinson & Eyberg, 2014). An example of the table of codes used in the Dyadic Parent-Child Interaction Coding System is shown in the Appendix.

During a DPICS analog behavior observation, the parent and child interact during 4 separate 5-minute segments: Warm-Up Child Led Play, Child-Led Play, Parent-Led Play, and Clean-Up (Robinson & Eyberg, 2014). The parent-child dyads interact in a playroom setting while they are observed by a trained clinician via video or a one-way mirror (Robinson & Eyberg, 2014). While observing the parent-child dyads, the clinician codes each verbalization of the parent and child, including child prosocial talk codes.

Child prosocial talk is defined as “categories of verbalization that contribute positively to the parent-child interaction” (Eyberg et al., 2005, p. 153). These verbalizations promote socialization between the parent and the child, but these verbalizations do not include specific statements such as commands or questions (Robinson & Eyberg, 2014). Child prosocial talk is more general or nonspecific in nature and helps quantify how talkative or quiet the child is (Robinson & Eyberg, 2014). There is a gap in the literature regarding what mediates the relationship between parenting stress and child adaptability. The current study seeks to investigate this relationship by exploring child prosocial talk as a mediating variable between parenting stress and child adaptability. First, we hypothesize that Parenting Stress Index total scores and the BASC-2 Adaptive Skills composite scores will be negatively associated with each other. Second,
we hypothesize that mediation analysis will reveal child prosocial talk as a mediator between parenting stress and child adaptability.
SECTION TWO

The current study used archival data from a sample of dyadic parent-child community participants from Eastern Kentucky. Each parent-child dyad participated in an analog DPICS behavior observation which was coded using the DPICS-defined codes. After the behavior observation, parents completed several assessments, including the BASC-2, PSI, and a demographics questionnaire.

Participants

Data analyzed for this project were previously collected from 53 dyadic community participants from Eastern Kentucky. Parents/guardians were 77.36% female; 22.64% were male. Their ages ranged from 23-56 years old, $M = 33.15$, $SD = 7.37$. Child participants were 33.96% female and 66.04% male. Their ages ranged from 2-10 years old, $M = 5.15$, $SD = 2.56$. The racial composition of the sample was 98.1% Caucasian and 1.9% African American. Participants were compensated with a $50 Walmart gift card for their time upon completion of this study. Two participants who did not fill out the entirety of the assessments were excluded from the analysis.

Procedure

Participants took part in a standard PCIT behavior observation which was coded using the DPICS (Eyberg et al., 2005; Robinson & Eyberg, 2014). Immediately following the behavior observation, parents were given several assessments to complete, including the BASC-2, the PSI, and a demographics questionnaire. Archival data from these behavior observations and assessments were used to run linear regression mediational analyses through the Statistical Package for the Social Sciences (SPSS).
Mediational analysis uses three paths for analysis: Path c, Path a, and Path b & c’ (Barron & Kenny, 1986). As shown in Figure 1, path c is a bivariate linear regression predicting PSI total T scores from BASC-2 Adaptive Skills composite scores. Path a is a bivariate linear regression predicting child prosocial talk (cPRO) total scores from PSI total T scores. Path b and c’ is a multiple regression analysis predicting BASC-2 Adaptive Skills composite scores from cPRO total scores and PSI total T scores.

Figure 1. Mediational Analysis Using Linear Regression

Measures

The first variable, parenting stress, was measured using the Parenting Stress Index, 4th Edition. This assessment is a self-report measure developed to assess parent and child characteristics, stressful life events, and family contexts (Abidin, 2012). The PSI is a 101-item inventory used to assess the magnitude of stress in the parent and child (Abidin, 2012). It uses a 4-point Likert scale to assess domains of parental distress, parent-child dysfunctional interaction, along with how difficult or easy the parent
perceives the child to be. These domains are combined to form the Total Stress Scale, which has a Cronbach’s Alpha of .90, indicating good internal consistency (Abidin, 2012). Total Stress scores are an indication of stresses in personal parenting distress, stresses resulting from parent-child interactions, and stresses originating from the child’s behavior. PSI validation studies have been conducted within many populations showing that the PSI is a reliable measure that maintains its validity when used in many different languages and cultures (Abidin, 2012).

Second, the Behavior Assessment System for Children (BASC-2) was used to assess child adaptability. The BASC-2 is multidimensional behavior rating system that assesses clinical and adaptive features of behavior and emotional functioning of children and young adults age 2 through 25 (Reynolds & Kamphaus, 2004). The BASC-2 is a Likert-style screening assessment designed to evaluate many aspects of a person, such as functional communication, conduct problems, hyperactivity, and adaptability (Reynolds & Kamphaus, 2004). It contains two rating scales, the Parent Rating Scales (PRS) and Teacher Rating Scales (TRS; Reynolds & Kamphaus, 2004). The tool yields scores in 16 primary areas, 7 optional scales, and 5 composite scales, including the Adaptive Skills Composite. Evidence supports the use of the BASC-2 to measure internalizing, externalizing, and adaptive behavior problems that occur in the child’s home and community. The BASC-2 Parent Rating Scales include four validity indexes that evaluate consistency and bias in caregiver results, while the Teacher Rating Scales include three validity indexes. The BASC-2 is a reliable, valid assessment, with internal consistency scores of the Adaptive Skills Composite in the mid .90s. Median test-retest reliability was
found to be .75, along with a median inter-rater reliability of .61 (Reynolds & Kamphaus, 2004).

To measure child prosocial talk, parent-child dyads completed a standard PCIT behavioral observation which was coded using the DPICS (Eyberg et al. 2005; Robinson & Eyberg, 2014). During the observation, each dyad participates in four, five-minute situations, lasting 20 minutes in total. The situations differ in level of parental control. First is Warm-Up Child-Led Play (WCLP), then Child-Led Play (CLP), Parent-Led Play (PLP), and Clean-Up (CU; Eyberg et al., 2005). For the current study, child prosocial talk total scores from the full 20-minute behavior observation were used, then statistical analyses were run in SPSS. Inter-coder reliability for child prosocial talk has a Cohen’s Kappa of .64 (Eyberg et al. 2005). The DPICS is a reliable and valid tool for clinicians and researchers alike. Previous research shows the DPICS correctly classifies over 90% of home behavior problems (Robinson & Eyberg, 2014).
SECTION THREE

Bivariate and multiple regressions between the variables of interest are presented in Table 1. Path c, $t(1, 47) = -2.431, p < .019$, is a bivariate regression from PSI scores ($M = 48.49, SD = 7.57, SEM = 1.08$) to BASC-2 Adaptive Skills scores ($M = 46.59, SD = 8.79, SEM = 1.26$); Path c indicates a significant bivariate regression from parenting stress to child adaptive skills. Path a, $t(1, 40) = -.446, p < .658$, is a bivariate regression from PSI scores to child prosocial talk ($M = 76.33, SD = 16.36, SEM = 2.52$); Path a did not reveal a significant bivariate regression from parenting stress to child prosocial talk. Path c' and b is a multiple regression, $t(2,37) = .049, p < .961$, from PSI scores and child prosocial talk total scores to BASC-2 adaptive skills scores; Path c' and b did not indicate a significant multiple regression from parenting stress and child prosocial talk scores to child adaptive skills.

Table 1. Results for the Mediating Effect

<table>
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<th>$F$</th>
<th>$P$</th>
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<td>8.79</td>
<td>2.93</td>
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</table>

*p < .05. ** p < .01
The purpose of the present study was to examine if the number of child prosocial verbalizations explains part of the relationship between parenting stress and child adaptive skills. Through examining a community sample of archival data collected from standardized PCIT behavior observations, measures of child adaptive skills, measures of parental stress symptoms, significant evidence of child prosocial talk as a mediating variable was not found. However, findings from the present study demonstrated that increased parenting stress was significantly and negatively associated with child adaptability. This finding is consistent with previous research showing a connection between parenting stress and child adaptability in both clinical and community samples (Deater-Deckart, 1998; El-Sheikh & Meckhalt, 2003; Sanders et al., 2020).

The significance of parenting stress being connected to lowered child adaptive skills produces practical applications. Interventions which help parents who experience high levels of stress to decrease their stress may benefit child development and adaptive skills. Both group and individual PCIT has been shown to improve childhood adaptive functioning and lower parenting stress (Niec et al., 2016). Niec and colleagues (2016) show group PCIT treatment gains are not inferior to the gains demonstrated by families in individual PCIT. Group PCIT could help increase treatment availability for community families in need of services, help lower extreme parenting stress levels, and increase child adaptive skills.

The present study did not find prosocial talk as a significant mediating variable between parenting stress and child adaptive skills among a community sample. These
results suggest that the number of child verbalizations in a standardized PCIT behavior observation does not always imply the child is more or less adaptive or indicate the stress levels of their parent. This finding is notable for clinicians because the amount a child talks during a behavior observation does not appear to have a linear relationship with either variable. Future studies may investigate non-linear relationships between these variables. If a child is quiet (or overly talkative), it does not always mean the parent-child dyad needs intervention related to parenting stress or child adaptability. Community interventions may need to prioritize lowering parenting stress levels rather than focusing on how talkative a child is.

Limitations of the present study include reactivity, as previous research has found behavioral differences in children depending on the observation setting (Thornberry, 2013). In other words, parent-child dyads may not behave in the same manner when they know they are being observed at a PCIT session, so they may speak more or less than they do at home. The present study also utilized convenience sampling from Eastern Kentucky community dyads, and due to the nature of convenience sampling, the population of interest is not always represented within the data or representative of a clinical sample (Etikan et al., 2016). At only 53 dyadic participants, the sample size of the present study was small and lacked diversity. The COVID-19 pandemic prevented the collection of additional data, so future studies should aim to have a larger sample size with more diverse participants from a more diverse geographic area. A larger sample size may yield significance in future studies. While the present study did not find a linear relationship between child prosocial talk, parenting stress, and child adaptive skills, there may be a nonlinear relationship to be considered, such as a significant mediating variable
that presents itself above clinical levels of parenting stress. Further exploration of possible mediating variables between parenting stress and child adaptive skills is an important area for future research because adaptability is significant in daily functioning and resilience to stressors in an everchanging world.


APPENDIX: DPICS CODING SHEET

DPICS Coding Sheet

<table>
<thead>
<tr>
<th>Tape #:</th>
<th>Coder:</th>
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<td>DPICS Segment:</td>
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