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PATERNAL DEPRESSIVE SYMPTOMS AND CHILD ADJUSTMENT

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ABSTRACT

This study explored the relation between paternal depressive symptoms and child adjustment across the domains of children's depressive symptoms, risky behavior, and academic achievement. Participants included 201 families made up of married mothers and fathers and their first-born child from the first two waves of a longitudinal study of family relationships and gender dynamics. OLS regression analyses demonstrated links between paternal depressive symptoms and children's levels of risky behavior and academic achievement, controlling for maternal depressive symptoms. No relation was found between paternal depressive symptoms and children's depressive symptoms. Findings were consistent with Belsky's (1984) process model of parenting, which asserts that parenting is shaped by the interplay between child characteristics, contextual stressors and supports, and parents' individual characteristics, including parents' personality and psychological resources, all of which impact child development.

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Chapter 1

Background

Approximately 350 million people worldwide suffer from depression, an experience that has many implications for an individual (World Health Organization, 2012). Clinical depression is a mood disorder in which feelings of sadness, loss, anger, or frustrations interfere with everyday life for weeks or longer (National Library of Medicine, 2012). Many individuals experience milder forms of depressive symptoms, such as feeling unhappy, a loss of interest and enjoyment, and reduced energy and activity (World Health Organization, 2012). Although not as serious as clinical depression, depressive symptoms also may interfere with day-to-day activities and interpersonal relationships. Importantly, the individuals experiencing depressive symptoms themselves are not the only people who are affected by the episodes. Everyone that is connected to the individual, especially his or her partner and children, has to face certain consequences of the depressive symptoms. It is estimated that 1 in 5 children in the United States live in a household with at least one parent who experiences depressive symptoms (Child Trends Data Bank, 2011). Given the sheer number of individuals who experience depressive symptoms and the number of children living with parents who experience depressive symptoms, research on the consequences of parental depression for child adjustment is essential.

When examining the relation between paternal depressive symptoms and child adjustment, it is important to consider the processes underlying the association. Belsky's

(1984) process model of parenting suggests that parenting is shaped by the interplay between child characteristics, contextual stressors and supports, and parents' individual characteristics, including their personality and psychological resources, all of which impact child development. This paper focuses on one aspect of the model – parental depressive symptoms. If parents experience emotional difficulties like depressive symptoms, they may create a home environment in which the negativity they experience in their own lives is projected onto their children through behaviors like rejection, anger, and decreased monitoring. This type of negative environment may, in turn, contribute to child adjustment problems like depressive symptoms, increased levels of risky behavior, and difficulties with academics. Belsky's model is supported by empirical research findings. For example, studies have found that mothers presenting depressive symptoms tend to exhibit more negative parenting practices, such as rejection and hostility, which, in turn, lead to negative child adjustment (Orraschel, Weissman, & Kidd, 1980; Weissman & Paykel, 1974). Using Belsky's model as a framework, the present study assumes hypothesizes a positive link between paternal depressive symptoms and child adjustment problems.

Much of the current research in this area focuses on maternal depression and child adjustment, as the mother is typically the primary caregiver of the child in most families, and thus, has the potential to greatly affect her child (Welch, 2010). The present study expands on this research by examining the effect of paternal depression on child adjustment. Child adjustment was measured within three domains: internalizing behavior, externalizing behavior, and academic performance. The present study also aims to examine the role of child gender in this association. The following paragraphs will

function as the foundation of this study: first, the theoretical background about the link between parent depression and child adjustment and the empirical research on mothers will be summarized; next, the modest amount of research that exists on paternal depression and child adjustment will be outlined; gender and its role in the parent-child relationship will then be examined; and finally, the limitations of the current paternal depression and child adjustment research will be highlighted to illustrate how the present study addresses these limitations.

More women than men are diagnosed with depression, and between eight and ten percent of mothers are diagnosed with clinical depression at any given time (Cummings & Kouros, 2009; Downey & Coyne, 1989). Therefore, there is cause for concern as many children are raised in a home with a depressed mother. Given the number of children who are exposed to maternal depression, the effects of this experience have been investigated thoroughly in the last several decades. The major finding that has emerged from this research is that maternal depression is linked with less healthy outcomes for children, leaving children of depressed mothers at risk for social, behavioral, and academic problems (Cummings & Davies, 1994; Hammen, Gordon, Burge, Adrian, Jaenick, & Hiroto, 1987).

Hammen and Brennan (2001) found that children of depressed mothers were more likely to have “dysfunctional cognitions” about their social world and highly conflictual relationships with family and peers. They are also at higher risk for higher levels of anti-social and risky behavior compared to children of non-depressed mothers (Kim-Cohen, Moffitt, Taylor, Pawlby, & Caspi, 2005). Finally, relevant to academic impairment, it has been found that children of depressed mothers are almost twice as

likely to have academic problems, such as academic deficiencies and discipline problems in school, than children of nondepressed mothers (roughly 35% of the sample vs. about 17% of the sample, respectively; Billings & Moos, 1983). From these findings, it can be seen why depression in mothers is of major concern, especially when considering potential implications it may have on their children.

Mothers are not the only parental figure in approximately 61% of children's lives (U.S. Census Bureau, 2008); however, very little consideration has been given to the role of paternal depression in children's adjustment. The few available studies that include two parents have found that depression in one parent is significantly positively correlated with depression in the other parent (Goodman, 2003; Paulson & Bazemore, 2010). Also, there is some evidence that being raised in a household with a depressed father has implications for children (Ramchandani, Stein, Evans, & O'Conner, 2005). McCombs and Forehand (1991) found that father's depressive mood was related to internalizing behavior and cognitive impairment in sons, as well as teacher-reported conduct problems in daughters. While these studies represent an important first step to studying paternal depression, they are not entirely satisfying and are limited in a number of ways.

A major limitation of the available research is that paternal depression is rarely considered in conjunction with maternal depression (Kim-Cohen et al., 2005; Hammen and Brennan, 2001). Instead, most studies examine either maternal or paternal depression, without controlling for the other parent's depressive symptoms or recognizing that each may explain unique variation in child adjustment. The present study addresses this limitation by examining the links between both maternal and paternal

depressive symptoms and child adjustment and testing whether each has unique implications.

A second limitation of paternal depression-child adjustment research is that few studies have explored multiple domains of child adjustment. This study aims to address this by measuring child adjustment within three major areas: internalizing behavior, externalizing behavior, and academic performance. These domains have been shown to be associated with maternal depression, and here we will explore whether the same is true for paternal depression. Specifically, this study will examine child depressive symptoms, risky behavior, and grade point average (GPA) as indicators of child adjustment.

Although it is uncommonly diagnosed, it is estimated that between five and eight percent of adolescents experience internalizing behavior or depressive symptoms (Son & Kirchner, 2000). The experience of depressive symptoms (i.e., feeling unhappy, loss of interest/enjoyment, reduced energy, etc.) is often a negative one, and it can be especially detrimental in adolescence when individuals are developing both physically and mentally. Because of its potentially damaging effects, it is important to understand the factors that put adolescents at risk for experiencing depressive symptoms. It has been found that one such predicting factor is family history of depression or depressive symptoms (Son & Kirchner, 2000). Compared with control children, children of mothers with depression are much more likely to experience depressive symptoms and other psychopathologies (Hammen et al., 1987; Klein, Dansky, Clark, & Margolis, 1988). Given this finding in relation to maternal depressive symptoms, this study examines adolescent *internalizing behavior* as the first domain of child adjustment, and hypothesizes that paternal depressive symptoms will be positively associated with

adolescent depressive symptoms, above and beyond the effects of maternal depressive symptoms.

The domain, *risky behavior*, refers to behaviors that tend to cause concern for parents, researchers, and society at large, such as substance use, vandalism, and skipping school. Throughout empirical literature, several factors have been found to influence risky behavior, with parent adjustment to be one such factor (Patterson, DeBaryshe, & Ramsey, 1989). Several studies have further examined this relation and have found that children of depressed parents are at greater risk for delinquency, behavioral problems, and substance use (Hammen et al., 1987; Patterson et al., 1989; Weissman et al., 1997). Given this finding, I hypothesize that paternal depression will be positively associated with adolescent risky behavior.

Social scientists have been examining parental influence on children's academic achievement for many years (Christenson, Rounds, & Gorney, 1992; Mau, 1997). A study by Wright, George, Burke, Gelfand, and Teti (2000) found a negative relation between maternal depression and academic achievement, such that students whose mothers were depressed had poorer academic achievement than children whose mothers were not depressed. Based upon these findings, *GPA* was examined in the present study as the third measure of child adjustment. I hypothesize that higher levels of paternal depressive symptoms will be associated with lower *GPA*.

A final limitation of the current research is that the gender of the child is rarely considered when discussing paternal depression. The present study aims to determine whether the links between paternal depression and child adjustment are different for boys and girls. Gender is a socially constructed concept that provides individuals with a

framework that guides how they react or do not react to certain situations (West & Zimmerman, 1987). For example, research consistently shows that males are more likely to engage in externalizing behaviors in the presence of stress, while females are more likely to engage in internalizing behaviors (Leadbeater, Blatt, & Quinlan, 1995; Leadbeater, Kuperminc, Blatt, & Hertzog, 1999). In the same regard, it has been found that in the presence of maternal depression, boys tend to have more behavioral problems than girls (Johnson, Su, Gerstein, & Hoffmann, 1995). The study by McCombs and Forehand (1991) is inconsistent with the work on maternal depression and suggests that paternal depression was linked with behavioral problems for girls, and internalizing problems for boys. Clearly, more research is needed on this topic, and the present study aims to build upon these findings by testing for gender differences in the link between paternal depressive symptoms and child adjustment.

Using Belsky's (1984) process model of parenting as a framework, the primary goal of this study was to examine the links between paternal depressive symptoms and child adjustment within three domains: child depression, risky behavior, and GPA. The overarching hypothesis is that children whose fathers report higher levels of depressive symptoms will show higher levels of depressive symptoms and risky behavior, and lower GPA scores, compared to children whose fathers report fewer depressive symptoms. Importantly, we included maternal depressive symptoms as a control to test for the *unique* contribution of paternal depressive symptoms. We also examined these associations in a longitudinal framework, with parental depressive symptoms measured one year prior to child adjustment, and controlled for child adjustment scores from the previous year. Finally, child gender was tested as a moderator, but the present study did

not have specific hypotheses given the mixed findings and lack of previous research on this topic.

Chapter 2

Methods

Sample

The data were drawn from the first two waves of a longitudinal study of family relationships and gender dynamics. Participants included 203 families in the first wave of data collection, and 201 families in the second wave of data collection. Families in the study were recruited by sending letters home with fourth and fifth grade students in rural and small urban areas in a northeastern state. Letters explained the study and detailed criteria for participation. Eligibility requirements included having always-married parents and the fourth or fifth grader had to be the firstborn child in the family with a second-born sibling one to four years younger. Families who met these criteria and were interested in participation in the study returned a self-addressed postcard to the project staff who contacted the families with additional information regarding participation. In the current analyses, we used data from the firstborn siblings.

Generally, the demographics of the participating families reflected that of the region: nearly all were European American and either working or middle class. The average age for children at Time 1 of the study was 10.87 years ($SD = 0.54$ years), and 11.83 years ($SD = 0.55$ years) at Time 2. The sample of children was evenly split by gender: there were 105 girls and 98 boys. The average education level for mothers was 14.58 years ($SD = 2.15$), and for fathers was 14.67 years ($SD = 2.43$), where 12 corresponded to a high school degree and 16 corresponded to a bachelor's degree (four

year college degree). Given this information, it can be concluded that most parents participating in the present study achieved at least an associate's degree (two year college degree), on average.

Procedures

Data were collected through two home interviews spaced one year apart. Interviews lasted approximately two to three hours, on average, and were conducted separately with each family member. Each family member was asked questions regarding psychological well-being and the relationships they had with other family members. Participants completed the same measures at Times 1 and 2, with the exception of children's risky behavior, which was assessed only at Time 2 because of children's young age at Time 1. Families were given an honorarium upon completing the interviews at each wave.

Measures

Parent depressive symptoms. Mothers and fathers responded to 12 items from The Center for Epidemiological Studies Depression Scale (Radloff, 1977). Within this index, respondents reported feelings or behaviors of depressive symptoms in the past week on a four-point scale ranging from 1 (rarely) to 4 (most of the time). Example items included "I had trouble keeping my mind on what I was doing," "I thought my life had been a failure," and "I could not 'get going'." Scores on the 12 items were summed, with higher scores indicating more feelings of depression. The alpha for mothers' depressive symptoms was .84, and the alpha for fathers' depression was .71. Due to positive skew, log-transformed data were used in the analyses.

Child depressive symptoms. Children's depressive symptoms were measured with the Children's Depression Inventory (Kovacs, 1981). For each of the 26 items (the item on suicide was deleted), children were asked to choose one of three statements that best described them in the past week (e.g., "I am sad once in a while," "I am sad many times," or "I am sad all the time"). Items were scored on a scale of 0 to 2 and summed; higher scores represented more feelings of depression. The alpha for child depressive symptoms was .75. A log-transformation was applied to correct for positive skew.

Child risky behavior. Risky behavior was measured using child self-reports on an 18-item index (Eccles & Barber, 1990). Children reported the extent of their involvement in activities such as "damaging public or private property," "getting drunk," "selling drugs," and "getting sent to the principal or assistant principal's office for misbehavior." Children were asked to rate the frequency of these behaviors in the past year on a 4-point scale ranging from 1 (never) to 4 (more than ten times in the past year). Scores were summed, with higher scores indicating more deviant behavior. The alpha for children's risky behavior was .72. A log-transformation was applied to correct for positive skew.

Child academic performance (GPA). Mothers reported on children's most recent grades in four major subjects: math, science, language arts (reading, grammar, etc.), and social studies. The children's grades were recorded on a five-point scale ranging from A to F, with 4 representing an A and 0 representing an F. The four subject grades were then averaged together to determine the child's GPA. To correct for negative skew, scores were first reflected, then a log-transformation was applied, and finally the logged scores were reflected again so that high scores indicated higher grades.

Control variables. Parent education at Time 1 (average of mother and father) was included as a control variable for family socioeconomic status. Parent's education was assessed to ensure that variability in depressive symptoms and child adjustment was not due to income. This measure was self-reported on a numeric scale. Parents also reported on child gender, which was included as a covariate in all models.

Chapter 3

Results

Analysis Plan

Analyses were conducted using SAS 9.3. In order to test the association between paternal depressive symptoms and child adjustment, OLS regression analysis was performed on each of the outcome variables (i.e., child depressive symptoms, risky behavior, and GPA), for a total of three models. Parent depressive symptoms were measured at Time 1 and child adjustment was measured at Time 2. Control variables included parent education, maternal depression, and Time 1 child adjustment scores. Because we included the Time 1 child adjustment score as an independent variable, the results should be interpreted as the association between parental depressive symptoms and *relative change in* child adjustment between Times 1 and 2. It should be noted that the Time 1 score for relative risky behavior was omitted from the risky behavior regression model because data on this domain were not gathered at Time 1 of the study. In order to test for the moderation of paternal depressive symptoms by child gender, an interaction variable was created (Gender X Paternal depressive symptoms). All non-significant interactions were then removed from the final models (Aiken & West, 1991).

Preliminary Analysis

Means, standard deviations, and ranges for the study variables are displayed in Table 1. Inspection of the means revealed that the sample was fairly well adjusted. In regard to both maternal and paternal depressive symptoms, most mothers and fathers had

relatively low to intermediate levels of depressive symptoms. In addition, children's depressive symptoms and risky behavior were also very low. Children's GPA scores were relatively high, with little variability.

Table 2 presents the correlations between all study variables. All significant correlations were in the expected direction. Results of this procedure indicated positive correlations between maternal depressive symptoms and children's depressive symptoms (Time 1 and Time 2), and a trend-level association between paternal depressive symptoms and children's risky behavior.

Links between Fathers' Depression Symptoms and Youth Adjustment

Child depressive symptoms. We expected that a positive association between paternal depressive symptoms and child depressive symptoms would exist. Results for OLS regression analysis revealed, however, that paternal depressive symptoms were not predictive of child depressive symptoms (see Table 3). There was a trend-level effect indicating that maternal depressive symptoms were positively associated with child depressive symptoms. There were no main effects for child gender, and it did not emerge as a significant moderator.

Child risky behavior. We hypothesized that a positive relation would exist between paternal depressive symptoms and children's levels of risky behavior. In support of this hypothesis, results for the OLS regression analysis indicated a significant positive association between paternal depressive symptoms and children's levels of risky behavior. There was also a main effect for child gender, such that boys reported higher levels of risky behavior than girls. The effect for paternal depressive symptoms was not

moderated by child gender, and the effect for maternal depressive symptoms was not significant.

Child GPA. We predicted a negative association between paternal depressive symptoms and children's academic performance. OLS regression analysis revealed no main effects, but a significant interaction between paternal depression and child gender (see Table 3). Follow-up analysis of this interaction revealed that there was a significant negative effect for boys, $B = -0.23$, $SE = 0.12$, $p = 0.05$, indicating that as paternal depressive symptoms increased, boys' GPA decreased. This effect was not significant for girls, $B = 0.07$, $SE = 0.13$, $p = 0.60$. The effect for maternal depressive symptoms was not significant.

Table 1
Means, (Standard Deviations), and Ranges for Study Variables (N = 201)

	Time 1				Time 2			
	<i>M</i>	<i>(SD)</i>	Observed Range	Possible Range	<i>M</i>	<i>(SD)</i>	Observed Range	Possible Range
Maternal depressive symptoms	18.07	5.44	12-41	12-48	---	---	---	12-48
Paternal depressive symptoms	17.42	4.07	12-34	12-48	---	---	---	12-48
Child depressive symptoms	4.93	4.05	0-17	0-52	5.00	4.17	0-21	0-52
Child risky behavior	---	---	---	18-72	21.32	3.23	18-34	18-72
Child GPA	3.57	0.56	1-4	1-4	3.54	0.63	0.75-4	1-4

Note. Risky behavior was not measured at Time 2.

Table 2
Correlations Between Parent Depressive Symptoms, Demographic Variables, and Child Adjustment

Variables	1.	2.	3.	4.	5.	6.	7.	8.	9.
1. M depressive symptoms T1	1.00								
2. P depressive symptoms T1	0.03	1.00							
3. C depressive symptoms T1	0.17*	0.02	1.00						
4. C depressive symptoms T2	0.22**	0.04	0.61**	1.00					
5. C risky behavior T2	0.05	0.12†	0.24**	0.28**	1.00				
6. C GPA T1	-0.11	-0.10	-0.35**	-0.21**	-0.28**	1.00			
7. C GPA T2	-0.11	-0.11	-0.16*	-0.13†	-0.28**	0.70**	1.00		
8. C gender	0.01	0.06	-0.02	0.06	-0.36**	0.18*	0.27**	1.00	
9. Parent education T1	-0.02	-0.08	-0.06	-0.03	-0.07	0.35**	0.35**	0.10	1.00

Note. M = maternal; P = paternal; C = child. T1 = Time 1; T2 = Time 2. 0 = male, 1 = female.

† $p < .10$. * $p < .05$. ** $p < .01$.

Table 3
Multiple Regression Analyses Predicting Child Adjustment

Variable	Depressive symptoms		Risky behavior		GPA	
	<i>B</i>	<i>SE B</i>	<i>B</i>	<i>SE B</i>	<i>B</i>	<i>SE B</i>
Intercept	-0.29	0.87	2.77**	0.18	1.92 **	0.46
Parent education	-0.02	0.02	-0.00	0.00	0.02*	0.01
Child adjustment T1	0.47**	0.06	----	----	0.64**	0.06
Gender	0.14	0.09	-0.10**	0.02	-0.74	0.49
Maternal depressive symptoms	0.36†	0.18	0.04	0.04	-0.11	0.07
Paternal depressive symptoms	0.11	0.21	0.09*	0.04	-0.23*	0.12
Gender X Paternal depressive symptoms	----	----	----	----	0.30†	0.17
<i>R</i> ²	0.29		0.16		0.51	

† $p < .10$. * $p < .05$. ** $p < .01$.

Chapter 4

Discussion

The present study explored the relation between paternal depressive symptoms and child adjustment across the domains of children's depressive symptoms, risky behavior, and academic achievement. It was hypothesized that children whose fathers reported higher levels of depressive symptoms would show higher levels of depressive symptoms and risky behavior, and lower GPA scores, compared to children whose fathers reported fewer depressive symptoms. We also explored child gender as a potential moderator of these associations, with no specific a priori hypotheses. In partial support of the hypothesis, regression analyses demonstrated links between paternal depressive symptoms and children's levels of risky behavior and academic achievement, controlling for maternal depressive symptoms, although the findings for GPA applied only for boys. No relation was found, however, between paternal depressive symptoms and children's depressive symptoms.

Within the domain of risky behavior, children whose fathers reported higher levels of depressive symptoms had higher levels of risky behavior. This finding is parallel to risky behavior outcomes that have been demonstrated in prior research on maternal depression and child adjustment research (Kim-Cohen et al., 2005). However, the present study is unique in its focus on the role of paternal depression, controlling for maternal depressive symptoms. Because this result within the domain of risky behavior was found in experiences of paternal depressive symptoms even in the presence of maternal

depressive symptoms, there is now evidence to suggest that fathers' emotional well-being may contribute uniquely to their children's levels of risky behavior, perhaps even more than mothers' contributions.

Based on the aforementioned finding regarding children's risky behavior, a few implications may be inferred. The first and simplest implication is that paternal depressive symptoms may directly affect children's levels of risky behavior. For example, fathers who are experiencing depressive symptoms may withdraw from involvement with their children, leading their children to act out (i.e. engage in risky behavior) as a means of obtaining their fathers' attention. Although fathers may have direct effects on their children, based on Belsky's (1984) model, it is likely that other factors contribute to this relation. The present study controlled for some factors that could have contributed to the relation between paternal depression and children's risky behavior such as parents' level of education and child gender. Unfortunately, this is not a comprehensive list of potentially influential factors and thus, it may be more appropriate to assume that paternal depressive symptoms are simply part of the equation. In this circumstance, a mediated relation may exist between paternal depressive symptoms and children's levels of risky behavior, a concept touched upon in Belsky's (1984) process model of parenting. For example, the occurrence of depressive symptoms in fathers may give rise to lower levels of parental monitoring, which may, in turn, contribute to children's levels of risky behavior.

Within the domain of academic achievement, it was found that boys, but not girls whose fathers reported higher levels of depressive symptoms had lower GPA scores. This finding is consistent with the findings demonstrated in maternal depression-child

adjustment research, which has found that students whose mothers were depressed had poorer academic achievement than children whose mothers were not depressed (Wright et al., 2000). This result provides an important contribution to the existing literature because it demonstrates the importance of the role of child gender. In the current study, the presence of paternal depressive symptoms (when controlling for maternal depressive symptoms) proved influential for boys' academic achievement, but not girls'.

Given this gender difference, there may now be evidence to suggest that fathers' emotional well-being may be more influential to the academic achievement of children of the same gender than children of the opposite gender. One explanation for this finding may be that children feel more comfortable turning to their same gender parent for academic help and support. From this perspective, children who are the same gender as the parent experiencing depressive symptoms may not receive the academic help and support they require. For example, a father who is experiencing depressive symptoms may be less inclined to have motivation and/or energy to support his children's academic needs. Although the present study provides unique contributions to the existing literature, it is not without limitations. The overall sample of the present study was fairly well adjusted, and therefore, although the goal was to explore depression and negative child outcomes, the fathers who participated in the study showed few depressive symptoms ($M = 17.42$ on a scale with a possible range of 12 to 48), and the children had low levels of depressive symptoms ($M = 4.93$, on a scale with a possible range of 00 to 17) and risky behavior ($M = 21.32$, on a scale with a possible range of 18 to 72), and relatively high GPA scores ($M = 3.57$). Given the relatively high adjustment and low variability in some of the measures, it was difficult to detect significant effects. This could explain the lack

of association between paternal and child depressive symptoms. Another limitation of the present study pertains to the generalizability of the findings, because the sample for this study was not economically or racially diverse, and all of the participants of the study came from the same general area of a Northeastern state in the United States.

In order to improve upon this study, future research in this area should first direct its focus to obtaining a less homogenous sample that includes some participants at higher risk (i.e., individuals who have higher levels of depression, risky behavior, and academic difficulties) and one that reflects the diversity of the country. The present study provided evidence to suggest links between paternal depressive symptoms and children's levels of risky behavior and academic achievement. Future research should also elaborate upon this relation by examining mediating factors, such as marital and parent and child relationships that might contribute to this relation. There are many avenues for future research, but it is essential that additional research be done concerning fathers and their emotional well-being in regard to their children because, as this study has demonstrated, fathers matter.

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