

You Can't Pick Your Family: Parental Differential Treatment and Attachment

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Abstract

The goal of the current project was to investigate the effect of perceived parental differential treatment (affection and control) and insecure parental attachment on adult sibling attachment. University students with siblings completed measures of attachment to fathers, mothers, and siblings as well as perceived parental differential treatment in childhood. We expected that path analyses would show that attachment to parents would mediate the link between perceived differential treatment and adult attachment to siblings and found mixed support for this hypothesis. Specifically, avoidant attachment to father mediated the link between differential paternal affection and avoidant attachment to sibling whereas anxious attachment to mother mediated the link between differential maternal affection and anxious attachment to sibling. These findings add adult parental and sibling attachment to consequences associated with unequal emotional treatment in childhood, emphasize the role of fathers in the family system, and demonstrate the need for continued research into sibling relationships.

Although there is a paucity of sibling relationship research, initial work demonstrates sibling bonds influence early development and they often remain impactful throughout the lifespan (e.g., Cicirelli, 1995). Sibling relationship quality in children as young as 3-years-old remains evident 7 years later, with warm and caring relationships predicting successful negotiation of adverse life events (Dunn, Slomkowski, & Beardsall, 1994). Sibling relationship quality moderates social understanding as well as constructive and destructive conflict resolution strategies in 6- to 8-year-old children (Recchia & Howe, 2009). By early adolescence, some initial sibling relationship qualities (e.g., warmth and closeness) may decline (Buhrmester & Furman, 1990), but warm interactions often rebound by the end of adolescence (Scharf, Shulman, & Avigad-Spitz, 2005) and expand by the time the firstborn leaves the home (Whiteman, McHale, & Crouter, 2011). In early adulthood, individuals with harmonious (high warmth, low conflict) sibling relationships have greater well-being (i.e., higher self-esteem and lower loneliness) than their less harmonious counterparts (Sherman, Lansford, & Volling, 2006). Adult male siblings with positive relationships tend to compensate for poor parental bonds by providing each other with additional emotional support. In contrast, strong emotional bonds and support becomes an example to adult children as a pattern by which to view family interactions (there is not similar evidence for female siblings to date; Voorpostel & Blieszner, 2008). That is, when adult male children have examples of strong relationships with their parents, they may use these relationships as models for future family interactions. By late adulthood, siblings who maintain frequent interaction have a greater sense of control over their lives (i.e., internal locus of control) than those who do not and this sense of control contributes to individual well-being (Cicirelli, 1980).

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Just as positive interactions with siblings predict healthy relationships and outcomes, problematic relationships with siblings predict negative life outcomes. These negative symptoms of problematic sibling relationships often relate to early sibling reinforcement of antisocial attitudes, behaviors, and peers (Patterson, Dishion, & Bank, 1984), including collusion against parental authority, substance abuse, and delinquency (Bullock & Dishion, 2007). Moreover, siblings who physically and verbally abuse one another in childhood are more likely to develop conduct disorder symptomology, trait hostility, and aggression over the lifespan than siblings who do not (King et al., 2017). Similarly, losing a sibling impacts children as well; that is, sibling death predicts manic/hypomanic symptoms, manipulativeness, and exploitativeness in adulthood (Haugen, Preszler, Cookman, & King, 2016). Although researchers are familiar with the link between sibling relationships and long-term life outcomes, researchers know less about the role of parents in the creation of sibling relationships. Thus, the current project investigated the mediating effect of attachment to fathers and mothers on the link between perceived differential treatment and attachment to siblings in adulthood.

Perceived Parental Differential Treatment

Perceived parental differential treatment (PPDT) refers to the belief that siblings are, or were, allocated unfair shares of parental resources such as affection and control from the viewpoint of the siblings themselves (e.g., Sutor et al., 2009). It is difficult even for parents who work to ensure fairness to maintain equality in treatment of children. As a result, parents often fall into a range of patterns of differential treatment including highest levels of affection to their youngest children (who are also at greatest risk problems associated with differential treatment) and differences in discipline, especially for boys with older sisters (McHale, Crouter, McGuire, & Updegraff, 1995). Less favored children often exhibit lower self-esteem, lower self-worth, and more externalizing behaviors like aggression than their more favored counterparts (e.g., Feinberg, Neiderhiser, Howe, & Hetherington, 2001; McHale et al., 1995; Singer & Weinstein, 2000). Conversely, favored children often have a greater sense of wellbeing, more childhood accomplishments, and warmer parent-child relationships than less favored children (e.g., McHale et al., 1995; Singer & Weinstein, 2000).

Some of the most robust parental differential treatment findings demonstrate that any type of differential treatment, regardless of who is favored, predicts problematic outcomes for all involved, including the siblings' relationships with each other (McHale et al., 1995; Sutor, Sechrist, Plikuhn, Pardo, & Pillemer, 2008). Even in families in which differential treatment is seemingly absent, the perception of differential treatment affects sibling relationships, personal well-being, and interpersonal functioning (e.g., Feinberg et al., 2001; Squire, Limke, & Jones, 2013). For example, perceived equal parental affection predicts self-esteem, secure romantic attachments, and low romantic relationship distress in adulthood, whereas perceived differential affection predicts negative internal models of self and others as well as romantic relationship distress in adults (Rauer & Volling, 2007). Similarly, disparate maternal control in childhood predicts jealousy in adult daughters' romantic relationships whereas disparate maternal affection predicts relationship jealousy in adult sons (Squire et al., 2013). Moreover, these perceptions have lasting issues associated with them. Both recollections and current accounts of maternal differentiation predicts depressive symptoms in young adulthood (Ponappa, Bartle-Haring, Holowacz, & Ferriby, 2017) and middle adulthood (Peng, Sutor, & Gilligan, 2018); interestingly, differential perceptions of fairness are also linked to personality traits (specifically, agreeableness, extroversion, and openness; Gozu & Newman, 2020), suggesting a complex relationship between these perceptions and associated outcomes.

Parental and Sibling Attachment

At the conception of attachment theory, Bowlby (1969, 1982) proposed a system by which caregivers and infants maintain close proximity. These early bonds develop into an attachment relationship that varies in the degree of security infants experience due to caregivers' sensitivity and responsiveness. Children who experience their caregivers as secure bases from which they can explore and experience autonomy in relative safety develop secure attachments to their caregivers. When the children are frightened or distressed, they know they can return to their secure bases to receive comfort and protection. These children internalize the ability to rely on their caregivers as a positive sense of others; similarly, they internalize the feeling of themselves worthy of love as a positive sense of self (Bartholomew & Horowitz, 1991). In contrast, caregivers that are indifferent, unwilling, or unable to provide secure bases to their children foster insecure attachment styles (Bowlby, 1969, 1982) and internalized working models of negative sense of self and/or others (Bartholomew & Horowitz, 1991). These negative internal working

models predict both romantic and sibling relationship outcomes (Hazan & Shaver, 1987; Tibbetts & Scharfe, 2015; Whiteman, McHale, & Soli, 2011) as well as other lifespan issues associated with them such as a lack of well-being during career changes (Ramos & Lopez, 2018), difficulty transitioning into parenthood (Simpson & Rholes, 2018), poor psychological adjustment after emotional and sexual abuse (Limke, Showers, & Zeigler-Hill, 2010), and negative consequences following perpetration of sexual violence (Russell & King, 2016).

Despite the popularity of attachment theory, most research focuses on maternal attachment. As a result, little is known about independent contributions of paternal attachment (van Ijzendoorn & De Wolff, 1997), particularly in adults. In infancy, paternal attachment has few statistically reliable effects on children's development (e.g., van Ijzendoorn & De Wolff, 1997) although fathering does seem to stimulate risk taking and control of toddlers' exploratory behaviors, particularly for males (Paquette & Dumont, 2013). It is possible that low-quality fathering is more detrimental to attachment security than high-quality fathering is adaptive (Brown, McBride, Shin, & Bost, 2007). In adolescence however, children's gender moderates the effects of paternal attachment on children's development (Buist, Dekovi, Meeus, & Van Aken, 2002). For example, some research finds that disparate parenting has more robust consequences for female children than for male children (Ramírez-Uclés, González-Calderón, del Barrio-Gándara, & Carrasco, 2018). In young adults, paternal, but not maternal, attachment predicts attachment to God among self-identified Christian adult males and females (Limke & Mayfield, 2011).

There is a similar dearth of adult sibling attachment research (cf. Whiteman et al., 2011), but early work suggests sibling relationships can be assessed as attachment processes, and parental attachment may affect the development of these bonds. For example, insecure maternal attachment predicts sibling conflict and hostility in preschool (Volling, 2001), whereas secure maternal attachment predicts positive, beneficial sibling interactions (Teti & Ablard, 1989). Attachment bonds between adolescent siblings increase from age 11 to 12. Although gender moderates these effects as well, siblings often retain these attachment bonds throughout adolescence (Buist et al., 2002). As siblings transition into adulthood, secure sibling attachments predict cooperative sibling interactions whereas insecure sibling attachments predict increased conflict and a lack of cooperation (Tibbetts & Scharfe, 2015).

Siblings often maintain close relationships, and sisters remain the closest (followed by cross-sex siblings and then brothers; see Van Volkom, 2008, for a review). This closeness, however, is also manifested differently in these adult sibling relationships (Floyd, 1995). For example, male siblings report drinking together, shaking hands, and talking about sexual issues whereas female siblings report talking about their personal problems, talking about their fears, hugging, saying they like or love each other, and knowing a lot about their sisters. Same-sex siblings are also more likely to share similar attachment relationships with their mothers than are cross-sex siblings (van Ijzendoorn et al., 2003).

Current Study

Because parental attachment style mediates the relationship between PPDT and adjustment (i.e., personal self-esteem, social self-esteem, and anxiety) among adolescent twins (Sheehan & Noller, 2002) and because parental attachment also serves as a mediator between differential maternal affection and jealousy in romantic relationships (Squire et al., 2013), the current study investigated the mediational effect of parental attachment on the link between PPDT and attachment to siblings. We expected that anxious attachment to fathers and mothers would mediate the link between perceived differential control and affection of mothers and fathers and attachment anxiety towards siblings. Similarly, we expected that avoidant attachment to fathers and mothers would mediate the link between perceived differential control and affection of mothers and fathers and attachment avoidance towards siblings.

Method

Participants and Procedure

Undergraduate students (N = 233, 78% female) at a large public university in the south-central region of the United States completed a study on family relationships in exchange for one credit towards a research requirement for their General Psychology courses. Only students over the age of 18 years with at least one sibling and a childhood relationship with both a mother and father parental figure met the requirements for participation. Parental figures could be biological, adopted, or stepparents. Following the link to a survey hosted by

www.surveymonkey.com, participants completed questionnaires assessing their attachment to their fathers, mothers, and siblings as well as their perceptions of differential treatment in childhood and demographic characteristics. We counterbalanced the order of the questionnaires to eliminate order effects.

Most participants identified themselves as White/Non-Hispanic (66%), followed by Black (12%), Latino/a (8%), Asian (6%), Native American (5%), and Other (3%). Their mean age was 21.26 (SD = 5.85; range = 18 to 53). Most participants (69%) had more than one sibling, so we asked them to think about the sibling to whom they felt closest during the study. The identified siblings' mean age was 20.97 (SD = 7.31; range = less than 1 to 51). The mean absolute age difference between participants and their siblings was 3.71 years (SD = 3.12; range = 0 to 23). Sibling sex was 50% male, 49% female, and 1% other/neither. The majority of participants described their sibling relationships as full (72%), followed by half (19%), step (5%), and adopted (4%). Only 3% of the participants identified a twin as their closest sibling relationship, whereas 49% identified an older sibling and 48% identified a younger sibling as their closest sibling relationship. These age categories remained roughly equal when considering sibling and participant sex.

Participants identified parental relationships as married/living together (63%), divorced (25%), or never married/no long-term relationship (12%). Of participants who grew up in separated or divorced households, 33% averaged less than five days per month with their fathers, 16% averaged six to 10 days, 9% averaged 11-20 days, 13% averaged >20 days, and 29% did not recall or had a variable number of days per month with their fathers. In that same subset of participants, 8% averaged less than 5 days per month with their mothers, 8% averaged six to 10 days, 9% averaged 11-20 days, 46% averaged >20 days, and 29% did not recall or had a variable number of days per month with their mothers.

Materials

Attachment. Participants completed three versions of the Experiences in Parental Relationships scale (EPR; Limke & Mayfield, 2011) – one for father, one for mother, and an adapted EPR for sibling. The EPR is a 22-item instrument measuring parental anxious (e.g., “I worried a lot about my relationship with my mother/father”) and avoidant (e.g., “I preferred not to be too close to my mother/father”) attachment during the first 16 years of life. Participants answer each item using a 7-point scale (1 = Disagree Strongly, 4 = Neutral/Mixed, 7 = Agree Strongly). Parental attachment indices had strong internal consistency in scale development ($\alpha > .84$) and all six scales (father avoidance, father anxiety, mother avoidance, mother anxiety, sibling avoidance, and sibling anxiety) were reliable in the present study (α range = .83 to .95; see Table 1).

Table 1

Descriptive Statistics for Measures of Differential Treatment, Attachment to Parents, and Attachment to Siblings

Index	<i>M</i>	<i>SD</i>	α	Range
Differential maternal affection	0.40	0.51	.82	0.00 – 2.00
Differential maternal control	0.61	0.57	.75	0.00 – 2.00
Differential paternal affection	0.44	0.57	.88	0.00 – 2.00
Differential paternal control	0.44	0.52	.85	0.00 – 2.00
Avoidant maternal attachment	2.42	1.48	.83	1.00 – 6.91
Anxious maternal attachment	2.94	1.22	.93	1.00 – 6.45
Avoidant paternal attachment	3.49	1.75	.95	1.00 – 7.00
Anxious paternal attachment	2.93	1.31	.86	1.00 – 7.00
Avoidant sibling attachment	3.02	1.60	.94	1.00 – 7.00
Anxious sibling attachment	2.80	1.27	.86	1.00 – 6.64

Note. N = 233.

Perceived differential treatment. The Differential Parental Treatment Subscale of the Sibling Inventory of Differential Experience (SIDE; Daniels & Plomin, 1985) is a 9-item instrument measuring differential parental affection (e.g., “Has been proud of the things we have done”) and control (“Has been strict with us”) when participants were “growing up.” Participants completed the SIDE twice to assess differential treatment of fathers and mothers separately. Participants rated SIDE statements on a 5-point scale (1 = In general, my [mother/father] has been much more this way towards my sibling than me; 3 = Same; 5 = In general, my [mother/father] has been much more this way toward me than my sibling). Based on research suggesting that any type of differential treatment (regardless of who is favored) predicts problematic outcomes (cf. McHale et al., 1995; Suito et al., 2008), we recoded the SIDE to that any perceived differential treatment, regardless of which sibling was favored, resulted in a higher score (i.e., 5=2, 4=1, 3=0, 2=1, 1=2). The Differential Parental Treatment Subscale of the SIDE was reliable in earlier research (α range = .69 to .78; cf. Rauer & Volling, 2007) as well as in the present study (α range = .75 to .88; see Table 1).

Data Analysis

Initial analyses ruled out variable mean differences between groups based on sibling absolute age (sibling ages <1 year apart, 1 to 10 years apart, and >10 years apart), sibling relationship (full, half, step, and adopted siblings), and participant by sibling sex. We then used a path analysis to determine the effect of PPDT (Differential Maternal and Paternal Affection and Control) on Parental Attachment (Anxious and Avoidant Attachment to Mother and Father) and Sibling Attachment (Anxious and Avoidant Attachment to Sibling) utilizing AMOS, version 23 (Arbuckle, 2014). Descriptive analyses were conducted with SPSS, version 23 (IBM Corp, 2015). In the hypothesized model, we positioned the four PPDT variables exogenously, the four parental attachment variables as endogenous, and the two sibling attachment variables as the outcomes. Maternal PPDT predicted maternal attachment and paternal PPDT predicted paternal attachment. Avoidant parental attachment predicted avoidant sibling attachment and anxious parental attachment predicted anxious sibling attachment (see Figure 1). We tested the hypothesized model and trimmed factors originally included in the path analysis that did not account for unique variance from the final model. We used Root Mean Squared Error of Approximation (RMSEA) and McDonald (1989)’s Non-Centrality Index (NCI) to determine the model’s goodness of fit, operationalized as $RMSEA \leq .08$ and $NCI \geq .95$ (Cheung & Rensvold, 2002; Garson, 2015).

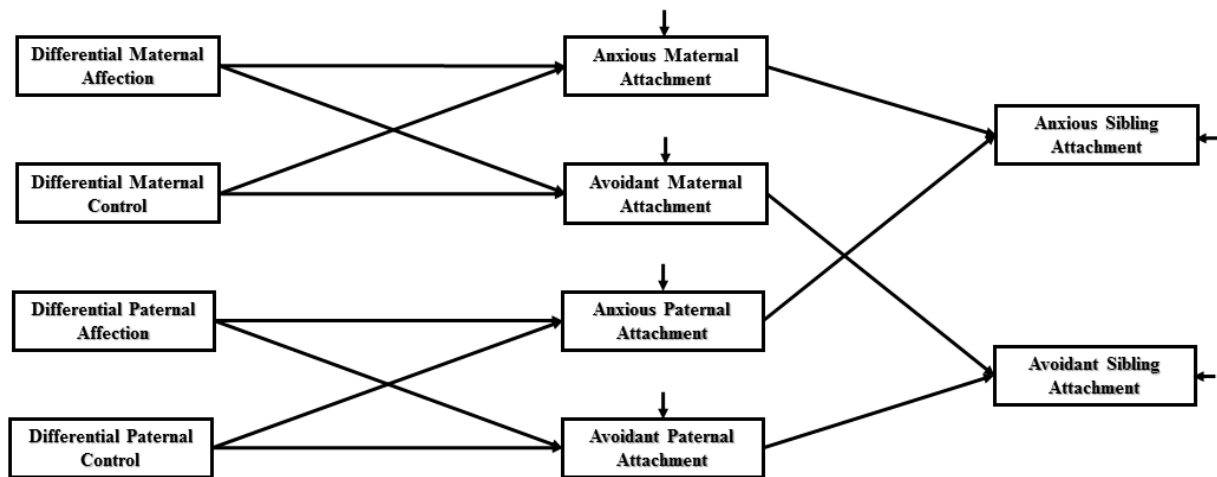


Figure 1. Hypothesized Path Analysis of Perceived Parental Differential Treatment and Parental Attachment on Sibling Attachment.

The exploratory nature of this path analysis increased the potential for capitalizing on chance. We conducted a single-sample cross-validation procedure to mitigate the likelihood of this error by testing the model's consistency and invariance. To test this, we first randomly assigned participants to one of two subsamples. We operationalized consistency as the model remaining a good fit in each subsample, including all paths maintaining significance. Invariance testing involves constraining increasingly stringent parameters to be equal across subsamples, and the subsamples should be statistically similar at each level of constraint (Garson, 2015). In the current research, we constrained structural weights, structural covariances, and structural residuals to test model invariance. We calculated $\Delta\chi^2$, ΔRMSEA , and ΔNCI and operationalized invariance as non-significant $\Delta\chi^2$, ΔRMSEA absolute value $\leq .015$ (Chen, 2007), and ΔNCI absolute value $\leq .02$ (Cheung & Rensvold, 2002).

Results

No index had $>2\%$ missing data. We used full information maximum likelihood in the analyses, which accounts for missing data. Table 2 displays the correlations between differential treatment, parental attachment, and sibling attachment. We tested the hypothesized model and the modification indices suggested the attachment error terms should be allowed to covary. After drawing those paths, the model fit the data well, $\chi^2(21) = 31.42$, $p = .067$, $\text{RMSEA} = .046$, $\text{NCI} = .978$, $\text{SRMR} = .072$, $\text{TLI} = .933$, $\text{CFI} = .969$; however, there were a few non-significant paths. Neither of the Differential Control variables (i.e., neither Differential Maternal Control nor Differential Paternal Control) predicted parental attachment, so we trimmed them from the model. Although Differential Paternal Affection significantly predicted Anxious Paternal Attachment ($\beta = .25$) and Differential Maternal Affection significantly predicted Avoidant Maternal Attachment ($\beta = .27$), Avoidant Maternal Attachment and Anxious Paternal Attachment did not predict the outcomes and we trimmed them from the model as well. After systematically removing these variables, the final model fit the data well, $\chi^2(7) = 11.77$, $p = .067$, $\text{RMSEA} = .064$, $\text{NCI} = .990$, $\text{SRMR} = .0495$, $\text{TLI} = .934$, $\text{CFI} = .973$ (see Figure 2).

Table 2

Descriptive Statistics for Measures of Differential Treatment, Attachment to Parents, and Attachment to Siblings

Index	1	2	3	4	5	6	7	8	9	10
1 Differential Maternal Affection	-									
2 Differential Maternal Control	.52**	-								
3 Differential Paternal Affection	.32**	.30**	-							
4 Differential Paternal Control	.22*	.49**	.28**	-						
5 Avoidant Maternal Attachment	.29**	.27**	.02	.05	-					
6 Anxious Maternal Attachment	.22*	.22*	.11	.07	.47**	-				
7 Avoidant Paternal Attachment	.11	.15	.45**	.10	.14	.33**	-			
8 Anxious Paternal Attachment	.23**	.20*	.42**	.12	.19*	.44**	.54**	-		
9 Avoidant Sibling Attachment	.29**	.29**	.24**	.17	.21*	.26**	.36**	.27**	-	
10 Anxious Sibling Attachment	.32**	.39**	.20*	.15	.22*	.43**	.18*	.29**	.20*	-

Note. $N = 233$.

* $p \leq .05$. ** $p \leq .01$.

After arriving at the final model, we randomly assigned participants to one of two subsamples for single-sample cross-validation. The model appeared consistent, as it was a good fit to the data in subsample 1, $\chi^2(7, n = 116) = 7.26$, $p = .297$, $\text{RMSEA} = .043$, $\text{NCI} = .999$, $\text{SRMR} = .0562$, $\text{TLI} = .973$, $\text{CFI} = .989$, and subsample 2, $\chi^2(7, n = 117) = 10.64$, $p = .1000$, $\text{RMSEA} = .082$, $\text{NCI} = .985$, $\text{SRMR} = .0668$, $\text{TLI} = .906$, $\text{CFI} = .954$. All paths remained significant ($p < .001$) in each subsample. There was also support for invariance across the subsamples. The

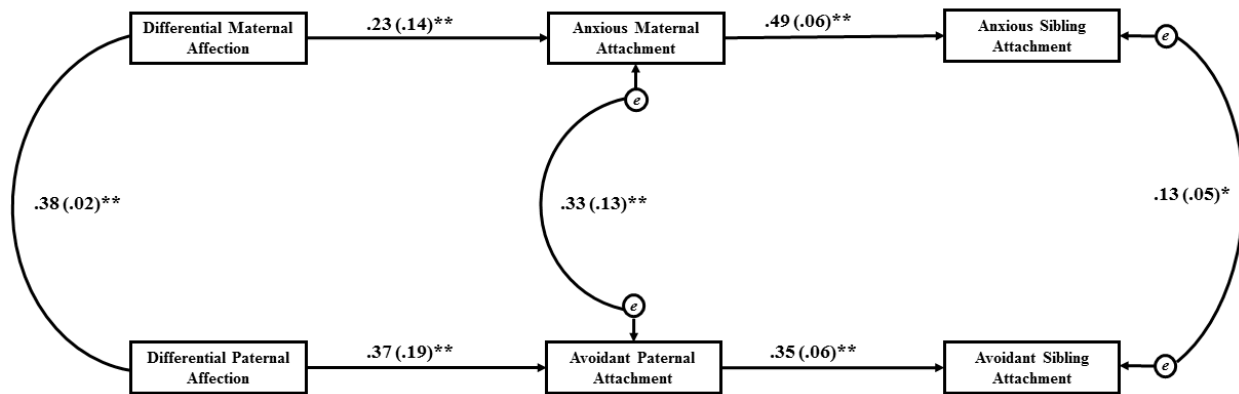


Figure 2. Final Path Analysis of Perceived Parental Differential Treatment and Parental Attachment on Sibling Attachment (Standardized Weights, Standard Errors in Parentheses).

Table 3

Invariance Statistics from the Single-Sample Cross-Validation Procedure

Model Constraints	χ^2	df	$\Delta\chi^2$	p	NCI	RMSEA
Unconstrained	17.90	14	--		.992	.046
Structural Weights	20.47	18	.633		.995	.035
Structural Covariances	34.57	28	.227		.986	.035
Structural Residuals	36.12	34	.956		.996	.020

Note: Models not significantly different if absolute value of $\Delta\text{NCI} \leq .02$ (Cheung & Rensvold, 2002) and $\Delta\text{RMSEA} \leq .015$ (Chan, 2007).

structural weights model was not significantly different from the unconstrained model ($\Delta\chi^2 = 2.57$, $p = .633$, $\Delta\text{NCI} = .003$, $\Delta\text{RMSEA} = .011$), the structural covariances model was not significantly different from the structural weights model ($\Delta\chi^2 = 14.10$, $p = .227$, $\Delta\text{NCI} = .009$, $\Delta\text{RMSEA} = .000$), and the structural residuals model was not significantly different from the structural covariances model ($\Delta\chi^2 = 1.55$, $p = .956$, $\Delta\text{NCI} = .01$, $\Delta\text{RMSEA} = .015$). Table 3 depicts the invariance statistics. These results mostly confirm the hypothesis that attachment to fathers and mothers mediates the effects of perceived differences in differential control and affection on attachment to siblings, suggesting that the specific mechanism for fathers and mothers differs by insecure attachment style.

Discussion

The goal of the present study was to investigate the mediational effect of attachment to fathers and mothers on the link between perceived differential treatment and attachment to siblings in adulthood. Although no known previous studies have investigated these effects in adults, previous research has identified the usefulness of untangling contributions of attachment to fathers and mothers and/or identified parental attachment as an effective mediator of perceived differential treatment on long-term outcomes (Limke & Mayfield, 2011; Sheehan & Noller, 2002; Squire et al., 2013). Thus, we expected that attachment to fathers and mothers would mediate the effects of differential control and affection on attachment to siblings. A path analysis mostly confirmed this hypothesis, although we trimmed some predictors for not contributing unique variance. Specifically, in the study's final model, paternal attachment avoidance mediated the effect of differential paternal affection on sibling attachment avoidance whereas maternal attachment anxiety mediated the effect of differential maternal affection on sibling attachment anxiety.

These findings add several important aspects to the adult attachment and PPDT literature. First, these findings suggest affection distributed equally amongst siblings (or at least perceived as distributed fairly, cf. Kowal

& Kramer, 1997) could serve as a protective factor against the development of insecure attachments and this protection lasts into early adulthood. The effects of differential control, however, seem to fade by emerging adulthood, suggesting that siblings are more likely to remember and weigh differences in how they perceive comfort and affection from their parents towards themselves and their siblings than how they perceive differences in discipline (which may also be viewed by siblings as something they have earned anyway). Future work should assess these factors in middle and late adulthood to gauge the length of time equivalent parental affection influences sibling relationships and to determine if differential control effects re-emerge in other phases of development. For example, it is possible that the effects of differential control are most evident later in adulthood when adult siblings become the caregivers of their parents, creating a new opportunity for (dis)harmonious relationships between siblings. It is also possible that due to the nature of the relationships, continued differential affection is more likely to occur than differential control, either due to physical distance, increased autonomy, or other emerging life factors.

Second, this research also emphasizes the importance of paternal affection and attachment in early adulthood. Although the maternal PPDT and attachment findings are interesting and important, much of the attachment literature involves attachment to mother, likely due to attachment theory's initial focus on maternal bonding (e.g., Bowlby, 1969, 1982), the robust findings related to maternal attachment, and the discovery of weak relationships between paternal attachment and early child development (e.g., van Ijzendoorn & De Wolff, 1997). The current findings demonstrate equitable paternal affection is important in fostering beneficial adult sibling relationships, specifically predicting attachment avoidance in adult sibling relationships. This is an important contribution because of the lack of focus on the importance of fathers in shaping family and peer relationships; that is, it suggests that research should continue to examine the distinct contributions of fathers and that fathers (who have been largely ignored in the literature) have an important contribution to the adult relationships of their children. Future work should expand these findings in other stages of development to determine onset and duration of these effects. Work should also investigate the contributions of fathers and mothers (separately) in siblings of individuals with developmental disabilities, whose attachment anxiety is already higher than the general population and for whom parenting seems unrelated to attachment (O'Neill & Murray, 2016).

Other investigations should also consider the ways in which these effects differ in childhood households with single and/or same-sex parents. For example, although attachment to fathers corresponds to attachment to God in intact Christian households (Limke & Mayfield, 2011), attachment to God is used to compensate for attachment to fathers in father-absent households (Murunga, Limke-McLean, & Wright, 2017). Thus, it is possible that in non-intact families, attachment to the present parent overcomes gender-specific attachment styles to predict attachment to siblings.

Although interesting, the current research is limited in a number of ways. These data are self-reported, correlational, and cross-sectional. Thus, research using behavioral, experimental, and/or longitudinal data would provide additional insight into the mediational role of attachment to parents on the link between differential treatment and attachment to siblings. This also utilized a sample of (mostly female) university students, which may not generalize well to the general population. Although similar college samples have had characteristics comparable to data collected in-person (Gamblin, Winslow, Lindsay, Newsom, & Kehn, 2016), we collected the current data online. Additionally, the current work developed an exploratory, post hoc model based on relationships found in these data prior to model construction; moreover, we trimmed non-significant factors in the path analyses and it is worth noting that other analyses may have produced somewhat different results. Although the study included a cross-validation to ensure model robustness, additional research should test this model in a sample of more equally distributed gender from the general population and should include control variables.

Conclusions

The current study tested the assumption that attachment to fathers and mothers mediates the link between perceived differences in affection and control by parents and attachment to siblings. Mostly confirming this assumption, the study's final model demonstrated that paternal attachment avoidance mediated the effect of differential paternal affection on sibling attachment avoidance whereas maternal attachment anxiety mediated the effect of differential maternal affection on sibling attachment anxiety. Moreover, perceived differences in paternal and maternal affection seem to last longer and have a larger impact on adult sibling relationships than perceived differences in paternal and maternal control.

References

- Arbuckle, J. L. (2014). Amos (Version 23.0) [Computer Program]. Chicago: IBM SPSS
- Bartholomew, K., & Horowitz, L. M. (1991). Attachment styles among young adults: A test of a four-category model. *Journal of Personality and Social Psychology*, 61, 226-244.
- Bowlby, J. (1969). *Attachment and loss*, Volume 1 (2nd ed.). New York City, NY: Basic Books.
- Bowlby, J. (1982). Attachment and loss: Retrospect and prospect. *American Journal of Orthopsychiatry*, 52, 664-678. <https://doi.org/10.1111/j.1939-0025.1982.tb01456.x>
- Brown, G. L., McBride, B. A., Shin, N., & Bost, K. K. (2007). Parenting predictors of father-child attachment security: Interactive effects of father involvement and fathering quality. *Fathering: A Journal of Theory, Research, and Practice about Men as Fathers*, 5, 197-219. <https://doi.org/10.3149/fth.0503.197>
- Buhrmester, D., & Furman, W. (1990). Perceptions of sibling relationships during middle childhood and adolescence. *Child Development*, 61, 1387-1398. <https://doi.org/10.1111/j.1467-8624.1990.tb02869.x>
- Bullock, B. M., & Dishion, T. J. (2007). Family processes and adolescent problem behavior: Integrating relationship narratives into understanding development and change. *Journal of the American Academy of Child & Adolescent Psychiatry*, 46, 396-407. <https://doi.org/10.1097/chi.0b013e31802d0b27>
- Buist, K. L., Dekovi, M., Meeus, W., & Van Aken, M. A. G. (2002). Developmental patterns in adolescent attachment to mother, father and sibling. *Journal of Youth and Adolescence*, 31, 167-176.
- Chen, F. F. (2007). Sensitivity of goodness of fit indexes to lack of measurement invariance. *Structural Equation Modeling: A Multidisciplinary Journal*, 14, 464-504. <https://doi.org/10.1080/10705510701301834>
- Cheung, G. W., & Rensvold, R. B. (2002). Evaluating goodness-of-fit indexes for testing measurement invariance. *Structural Equation Modeling: A Multidisciplinary Journal*, 9, 233-255. https://doi.org/10.1207/S15328007SEM0902_5
- Cicirelli, V. G. (1980). Relationship of family background variables to locus of control in the elderly. *Journal of Gerontology*, 35, 108-114. <https://doi.org/10.1093/geronj/35.1.108>
- Cicirelli, V. G. (1995). *Sibling relationships across the lifespan*. New York City, NY: Plenum.
- Daniels, D., & Plomin, R. (1985). Differential experience of siblings in the same family. *Developmental Psychology*, 21, 747-60. <https://doi.org/10.1037/0012-1649.21.5.747>
- Dunn, J., Slomkowski, C., & Beardsall, L. (1994). Sibling relationships from the preschool period through middle childhood and early adolescence. *Developmental Psychology*, 30, 315-324. <https://doi.org/10.1037/0012-1649.30.3.315>
- Feinberg, M., Neiderhiser, J., Howe, G., & Hetherington, E. M. (2001). Adolescent, parent, and observer perceptions of parenting: Genetic and environmental influences on shared and distinct perceptions. *Child Development*, 72, 1266-1284. <https://doi.org/10.1111/1467-8624.00346>
- Floyd, K. (1995). Gender and closeness among friends and siblings. *The Journal of Psychology: Interdisciplinary and Applied*, 129, 193-202. <https://doi.org/10.1080/00223980.1995.9914958>
- Gamblin, B. W., Winslow, M. P., Lindsay, B., Newsom, A. W., & Kehn, A. (2016). Comparing in-person, Sona, and Mechanical Turk measurements of three prejudice-relevant constructs. *Current Psychology*, 36, 217-224. <https://doi.org/10.1007/s12144-015-9403-1>
- Garson, G. D. (2015). *Structural Equation Modeling*. Asheboro, NC: Statistical Publishing Associates.
- Gozu, H., & Newman, J. (2020). Parental differential treatment of siblings and fairness perception: Moderating role of personality. *Journal of Child and Family Studies*, 29, 3129-3141. <https://doi.org/10.1007/s10826-020-01811-4>
- Haugen, A. E., Preszler, J. R., Cookman, M. L., & King, A. R. (2016). Sibling death and adult maladjustment indices: A brief report. *Journal of Loss and Trauma*, 21, 265-274. <https://doi.org/10.1080/15325024.2015.1048152>
- Hazan, C., & Shaver, P. (1987). Romantic love conceptualized as an attachment process. *Journal of Personality and Social Psychology*, 52, 511-524. <https://doi.org/10.1037/0022-3514.52.3.511>
- IBM Corp. (2015). *IBM SPSS Statistics for Windows, Version 23.0*. Armonk, NY: IBM Corp.
- King, A. R., Ballantyne, S., Ratzak, A., Knutson, S., Russell, T. D., Pogalz, C. R., & Breen, C. M. (2017). Sibling hostility and externalized symptoms of psychological distress. *Journal of Aggression, Maltreatment and Trauma*. <https://doi.org/10.1080/10926771.2017.1382637>
- Kowal, A., & Kramer, L. (1997). Children's understanding of parental differential treatment. *Child Development*, 68, 113-126. <https://doi.org/10.1111/j.1467-8624.1997.tb01929.x>
- Limke, A., & Mayfield, P. B. (2011). Attachment to God: Differentiating the contributions of fathers and mothers using the experiences in parental relationships scale. *Journal of Psychology and Theology*, 39, 122-129.

- Limke, A., Showers, C. J., & Zeigler-Hill, V. (2010). Emotional and sexual maltreatment: anxious attachment mediates psychological adjustment. *Journal of Social and Clinical Psychology, 29*, 347-367. <https://doi.org/10.1521/jscp.2010.29.3.347>
- McDonald, R. P. (1989). An index of goodness-of-fit based on noncentrality. *Journal of Classification, 6*, 97-103. <https://doi.org/10.1007/BF01908590>
- McHale, S. M., Crouter, A. C., McGuire, S. A., & Updegraff, K. A. (1995). Congruence between mothers' and fathers' differential treatment of siblings: Links with family relations and children's well-being. *Child Development, 66*, 116-128. <https://doi.org/10.1111/j.1467-8624.1995.tb00859.x>
- Murunga, M. S., Limke-McLean, A., & Wright, R. W. (2017). Who's your daddy? Family structure differences in attachment to God. *Journal of Psychology and Theology, 45*, 205-217.
- O'Neill, L. P., & Murray, L. E. (2016). Perceived parenting styles fail to mediate between anxiety and attachment styles in adult siblings of individuals with developmental disabilities. *Journal of Autism and Developmental Disorders, 46*, 3144-3154. <https://doi.org/10.1007/s10803-106-2859-5>
- Paquette, D., & Dumont, C. (2013). The father-child activation relationship, sex differences, and attachment disorganization in toddlerhood. *Child Development Research, 2013*, 1-9. <https://doi.org/10.1155/2013/102860>
- Patterson, G. R., Dishion, T. J., & Bank, L. (1984). Family interaction: A process model of deviancy training. *Aggressive Behavior, 10*, 253-267. <https://doi.org/10.1002/1098-2337>
- Peng, S., Sutor, J. J., Gilligan, M. (2018). The long arm of maternal differential treatment: Effects of recalled and current favoritism on adult children's psychological well-being. *The Journals of Gerontology: Series B, 73*, 1123-1132. <https://doi.org/10.1093/geronb/gbw105>
- Ponappa, S., Bartle-Haring, S., Holowacz, E., & Ferriby, M. (2017). The family system and depressive symptoms during the college years: Triangulation, parental differential treatment, and sibling warmth as predictors. *Journal of Marital and Family Therapy, 43*, 145-158. <https://doi.org/10.1111/jmft.12175>
- Ramírez-Uclés, I., González-Calderón, M.J., del Barrio-Gándara, V. (2018). Perceived parental acceptance-rejection and children's psychological adjustment: The moderating effects of sex and age. *Journal of Child and Family Studies, 27*, 1336-1348. <https://doi.org/10.1007/s10826-017-0975-2>
- Ramos, K., & Lopez, F. G. (2018). Attachment security and career adaptability as predictors of subjective well-being among career transitioners. *Journal of Vocational Behavior, 104*, 72-85. <https://doi.org/10.1016/J.JVB.2017.10.004>
- Rauer, A. J., & Volling, B. L. (2007). Differential parenting and sibling jealousy: Developmental correlates of young adults' romantic relationships. *Personal Relationships, 14*, 495-511. <https://doi.org/10.1111/j.1475-6811.2007.00168.x>
- Recchia, H. E., & Howe, N. (2009). Associations between social understanding, sibling relationship quality, and siblings' conflict strategies and outcomes. *Child Development, 80*(5), 1564-1578. <https://doi.org/10.1111/j.1467-8624.2009.01351.x>
- Russell, T. D., & King, A. R. (2016). Anxious, hostile, and sadistic: Maternal attachment and everyday sadism predict hostile masculine beliefs and male sexual violence. *Personality and Individual Differences, 99*, 340-345. <https://doi.org/10.1016/j.paid.2016.05.029>
- Scharf, M., Shulman, S., & Avigad-Spitz, L. (2005). Sibling relationships in emerging adulthood and in adolescence. *Journal of Adolescent Research, 20*, 64-90. <https://doi.org/10.1177/0743558404271133>
- Sheehan, G., & Noller, P. (2002). Adolescent's perceptions of differential parenting: Links with attachment style and adolescent adjustment. *Personal Relationships, 9*, 173-190. <https://doi.org/10.1111/1475-6811.00011>
- Sherman, A. M., Lansford, J. E., & Volling, B. L. (2006). Sibling relationships and best friendships in young adulthood: Warmth, conflict, and well-being. *Personal Relationships, 13*, 151-165. <https://doi.org/10.1111/j.1475-6811.2006.00110.x>
- Simpson, J. A., & Rholes, W. S. (2018). Adult attachment orientations and well-being during the transition to parenthood. *Current Opinion in Psychology, 25*, 47-52. <https://doi.org/10.1016/j.copsyc.2018.02.019>
- Singer, A. T., & Weinstein, R. S. (2000). Differential parental treatment predicts achievement and self-perceptions in two cultural contexts. *Journal of Family Psychology, 14*, 491-509. <https://doi.org/10.1037/0893-3200.14.3.491>
- Squire, A. J., Limke, A., & Jones, P. C. (2013). Unequal treatment by mothers and fathers matters differently for daughters and sons. *Marriage & Family Review, 49*, 135-147. <https://doi.org/10.1080/01494929.2012.731034>

- Suitor, J. J., Sechrist, J., Plikuhn, M., Pardo, S. T., Gilligan, M., & Pillemer, K. (2009). The role of perceived maternal favoritism in sibling relations in midlife. *Journal of Marriage and Family*, 71, 1026-1038. <https://doi.org/10.1111/j.1741-3737.2009.00650.x>
- Suitor, J. J., Sechrist, J., Plikuhn, M., Pardo, S. T., & Pillemer, K. (2008). Within-family differences in parent-child relations across the life course. *Current Directions in Psychological Science*, 17, 334-338. <https://doi.org/10.2307/20183314>
- Teti, D. M., & Ablard, K. E. (1989). Security of attachment and infant-sibling relationships: A laboratory study. *Child Development*, 60, 1519. <https://doi.org/10.2307/1130940>
- Tibbetts, G., & Scharfe, E. (2015). Oh, brother (or sister)! An examination of sibling attachment, conflict, and cooperation in emerging adulthood. *Journal of Relationships Research*, 6, E8. <https://doi.org/10.1017/jrr.2015.4>
- van IJzendoorn, M. H., & De Wolff, M. S. (1997). In search of the absent father-meta-analyses of infant-father attachment: A rejoinder to our discussants. *Child Development*, 68, 604-609. <https://doi.org/10.1111/j.1467-8624.1997.tb04223.x>
- van IJzendoorn, M. G., Moran, G., Belsky, J., Pederson, D., Bakermans-Kanenberg, M. J., & Kneppers, K. (2003). The similarity of siblings' attachments to their mother. *Child Development*, 71, 1086-1098. <https://doi.org/10.1111/1467-8624.00211>
- van Volkom, M. (2008). Sibling relationships in middle and older adulthood: A review of the literature. *Marriage & Family Review*, 40, 151-170. https://doi.org/10.1300/J002v40n02_08
- Volling, B. L. (2001). Early attachment relationships as predictors of preschool children's emotion regulation with a distressed sibling. *Early Education & Development*, 12, 185-207. https://doi.org/10.1207/s15566935eed1202_2
- Voorpostel, M., & Blieszner, R. (2008). Intergenerational solidarity and support between adult siblings. *Journal of Marriage and Family*, 70, 157-167. <https://doi.org/10.1111/j.1741-3737.2007.00468.x>
- Whiteman, S. D., McHale, S. M., & Crouter, A. C. (2011). Family relationships from adolescence to early adulthood: Changes in the family system following firstborns' leaving home. *Journal of Research on Adolescence*, 21, 461-474. <https://doi.org/10.1111/j.1532-7795.2010.00683.x>
- Whiteman, S. D., McHale, S. M., & Soli, A. (2011). Theoretical perspectives on sibling relationships. *Journal of Family Theory & Review*, 3, 124-139. <https://doi.org/10.1111/j.1756-2589.2011.00087.x>