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Parental Warmth and Disciplinary Strategies in Two-Parent-Adoptive and Biological Families

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ABSTRACT

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Adopted children enter families with parents who on average are older, have higher income, and have more education than other family structures. Because adopted children are moving into families with more resources, research suggests that they would do just as well as, and perhaps even better than, children in biological two-parent households. However, this is not always the case. Understanding how different variables could offset any negative results of adoption is a puzzle that researchers are continually exploring. Previous research has investigated differences in investments from adoptive and biological parents through multiple theoretical lenses. I seek to add to current research by looking at parental investments of warmth and aversive and non-aversive discipline. Using the ECLS-K:2011 dataset, I examine the responses of parents of kindergarteners to questions about warmth and discipline. I find that there are no significant differences in parental warmth or aversive disciplinary strategies. However, when looking at the non-aversive disciplinary strategies of using time-out, I find that adoptive parents use time-out more. Additionally, adoptive parents use chores as discipline much less than biological parents, which aligns with none of the proposed theories and suggests a need for further research on how chores are viewed in discipline literature.

Keyworks: adoption, parental warmth, parental discipline

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INTRODUCTION

Research has shown that, on average, adoptive families have more resources than other family structures, such as two-parent-biological-families, stepfamilies, and single-parent families (Hamilton, Cheng, and Powell 2007). Such resources are usually associated with increased positive outcomes for children, but while adopted children do benefit from these resources, they still tend to have worse social and academic outcomes than children in biological families (Brodzinsky, Gunnar, and Palacios 2022; Bramlett, Radel, and Blumberg 2007; Ackard et al. 2006). The discrepancy between available resources and related outcomes across the two groups demonstrates the complicated story of adoption. In addition to this discrepancy, there are many possible sources of stress for adopted children. Adopted children may struggle knowing that although they were adopted, they were previously given up (Brodzinsky, Schechter, and Henig 1993:62). One or any combination of factors such as adverse prenatal experiences, less than ideal genetic traits, abuse, institutionalization, and risk of failed adoption could explain why adoption is associated with more negative outcomes (Fisher 2003). Understanding how different variables could offset any potential negative results of adoption is a puzzle researcher are continually exploring. While adopted families have more total resources, perhaps the unexpectedly divergent outcomes for adoptees instead reflect how these resources are distributed. Are there particular differences in characteristics of adoptive or biological parents that are notable and could be linked to certain child outcomes? Previous research from Hamilton et al. (2007) and Larsen Gibby, Wikle, and Thomas (2021) studied adoptive families and investments using theoretical perspectives such as kinship selection theory, family structure explanations, and compensatory theory. I contribute to this conversation by looking at parental warmth and disciplinary strategies of adoptive and biological parents through these theoretical lenses. Understanding whether there

is a difference between biological and adoptive parents in these areas could be a steppingstone to understanding further outcomes in adopted children. Using the ECLS-K:2011 dataset, I look at Kindergarten children's parents' responses to questions about warmth and disciplinary strategies used.

LITERATURE REVIEW

Adopted Children

On average, parents who adopt children are older, more educated and have higher income than parents within other family structures (Kreider and Lofquist 2014). These advantages are even more profound among internationally adopted children, with higher percentages of these children living in higher earning, more educated, and more-likely-to-be-intact families (Jones 2009). It is not surprising that adoptive parents are older, as the adoption process takes time, and these parents may have already taken time trying to conceive naturally before beginning the adoption process (Kreider and Lofquist 2014; Barkin et al. 2007). It is also not surprising that these adoptive parents have higher levels of education and higher incomes because of the costs and processes of adoption. Because these children are moving into families with advantages, I would expect them to do just as well as, and perhaps even better than, children in biological two-parent households in terms of physical, emotional, and mental health, along with other areas such as behavior and academics.

However, various negative factors that affect adopted children tell a story that adopted children usually have worse outcomes than their counterparts in households with two biological parents. This leads to an eagerness to understand whether there are any factors of adoptive parents, selectivity, and resources that might lead to better outcomes for adopted children. Even with advantages in resources and selectivity factors, there is still evidence that children who are

adopted have difficulties behaviorally, socially, and psychologically (Brodzinsky et al. 2022). Research has shown that adopted children have more special health care needs, moderate or severe health problems, learning disabilities, developmental delays or physical impairments, and other mental health difficulties than do children who are not adopted (Bramlett et al. 2007). Adopted children are also less likely to have a good relationship with either their biological or their adoptive parents (Bramlett et al. 2007; Ackard et al. 2006). That lack of connectedness can have consequential effects on this population as they become teenagers, including unhealthy weight control, substance use, suicide attempts, body dissatisfaction, and low self-esteem (Bramlett et al. 2007; Ackard et al. 2006). Adoptive parents, for many reasons, do not always have control over these variables.

Adopted children tend to have the resources of more affluent families, which includes more consistent insurance coverage and more preventative doctor visits, yet adoptive children continue to have worse health outcomes than children who come from biological two-parent households. Understanding whether the discrepancy could be due to biological factors, societal factors, or the desire to compensate for the lack of these factors is key to understanding the differences between two-parent-adoptive-families and two-parent-biological-families. Basic group comparisons may show that adoptive parents provide more of these investments to their adopted children and understanding the role of these investments for warmth and discipline will help to better understand why there may be differences between the two groups.

Theoretical Perspectives

In line with Hamilton et al. (2007) and Larsen Gibby et al. (2021), I will explore three theoretical perspectives that may predict patterns of warmth and discipline for parents in two-parent-biological-families and two-parent-adoptive-families.

Kinship Selection Theory The first perspective, kinship selection theory, proposes that parents have a stronger attachment and connection to their biological children because of their greater number of shared genes (Hamilton 1964). An evolutionary theorist may say that adoptive children do not have as much to offer their parents as biological children in terms of reproductive benefits and therefore would be less likely to receive valuable resources; they may even suffer because of that lack of connection (Hamilton 1964; Daly and Wilson 1996; Dawkins 1976; Lucas, Creel, and Waser 1996). The lack of investments between stepfathers and their stepchildren compared to their biological children demonstrates why this theory is important to explore (Daly and Wilson 1996).

If the kinship selection perspective is accurate, I would expect two-parent-biological-families to contribute more physical resources and quality time to their children because of the parents' inherent desire for their offspring to succeed. These would in turn be associated with higher levels of warmth, as biological parents would have a more natural connection to their children. Biological parents would also use less aversive disciplinary strategies and more non-aversive disciplinary strategies.

Family Structure Explanations Structural explanations that focus on family structure posit that children living with two biological parents fare better than those living with adoptive parents because society is shaped to benefit the former. Family structures have grown and changed significantly within the last few decades (Ruggles 1994). A two-parent biological family is usually associated with better outcomes than are other family structures (Amato 2010), possibly because cultural institutions and expectations are set up for two-parent-biological-families.

For example, it is generally recognized that biological mothers need time off work after having a child, but adoptive mothers requesting similar accommodations may be faced with skepticism even though in the first twelve weeks following adoption depressive symptoms were found in a substantial proportion of new adoptive mothers (27.9% of subjects at 0–4 weeks, 25.6% at 5–12 weeks, and 12.8% at 13–52 weeks post-adoption) (Payne et al. 2010). This number is at best in line with the 10-20% of biological mothers who experience postpartum depression (Zhou et al. 2019). Because of this disadvantage and others, adoptive families may lack the societal supports that would help them to translate their resources to their children; in terms of the outcomes I study here, the lack of societal structures supporting adoptive families may make it difficult to translate economic and human capital resources into parental warmth and better disciplinary strategies.

Additionally, it has been suggested that there could still be a stigma attached to those who adopt (Fisher 2003). This stigma could lead to adoptive parents feeling self-conscious and lead to poor integration between adopted children and parents (Meyer 1993). This could leave adoptive parents without the support they need to give their adoptive child all the resources they need to succeed.

Similar to the kinship selection theory, if family structure explanations are accurate, I expect to see two-parent-biological-families have higher levels of warmth and use less aversive disciplinary strategies and more non-aversive disciplinary strategies because biological parents have the social support and access to social structures that need to be able to contribute more and better resources to their children.

Compensatory Theory The final theory I investigate is the compensatory theory, or the idea that adoptive parents devote more time, energy, and resources to their adoptive children due

to their knowledge that these children are already at a disadvantage, or in an effort to promote bonding with their adopted children that they may not assume will come naturally (Baden et al. 2019). When considering whether there is still a stigma around adoption, these adoptive parents may try to prove themselves as "good" parents by investing as much as possible into their children (Hartman and Laird 1990). Additionally, adoptive parents may be making up for their own powerlessness, whether these feelings come from their infertility or the stress and trauma of the adoption process, by investing more in their adopted child.

Previous research has found that adoptive parents are more likely to have the financial resources to send their children to preschool, which in turn is associated with high educational achievements (Parcel and Dufur 2001). Factors of selectivity, such as older maternal age, more education, higher income, and race are all contributing factors in an adoptive parent's ability to give more to their adoptive child (Barkin et al. 2007). Adoptive parents have also been found to be more involved in their adopted child's life, including knowing their friends, attending their child's events, signing their child up for sports, and including their child in religious participation (Werum et al. 2018; Hamilton et al. 2007). These factors support compensatory theory, as adoptive parents consistently are found to invest more, especially when compared to family structure outside of the two-parent-biological-family structure.

If compensatory theory explains differences between adoptive and biological parents, I expect to see higher levels of parental warmth, less aversive disciplinary strategies, and more non-aversive disciplinary strategies from two-parent-adoptive-families. These families would be investing more physical resources and quality time into their children in an effort to help their children keep up with children from other family types.

Parental Warmth and Disciplinary Strategies

Parental Warmth Parental warmth could be a key factor in understanding the complete story of adopted children. Parental warmth is defined as the "expression of interest in children's activities and friends, involvement in children's activities, expression of enthusiasm and praise for children's accomplishments, and demonstration of affection and love" (Amato 1990). Parental warmth has been studied in relation to a child's psychological adjustment, personality disposition, behavior, and other outcomes. It is correlated with higher levels of independence, positive self-esteem, emotional regulation and stability, and a positive worldview (Khaleque 2012). The positive effects of parental warmth can even be found later in life, with adults who recalled parental warmth in their childhood reporting higher aspects of emotional, psychological, and social well-being (Chen, Kubzansky, and VanderWeele 2019).

Parental warmth is found to help facilitate other behaviors that in turn lead to better outcomes in a child and adolescent's life. In other words, a child experiencing a higher level of parental warmth in their life begins a succession of behaviors or attitudes that positively impact a child's life. One study modeled this indirect effect, as parental warmth was found to be a predictor of adolescent disclosure of activities and whereabouts to their parents and in turn was linked to lower levels of delinquency (Klevens 2014). Other studies have investigated the specific effects that maternal and paternal warmth can have on a child, with higher maternal warmth being associated with higher levels of motivation and higher paternal warmth being associated with lower levels of school delinquency (Jaggers et al. 2016; Lowe and Dotterer 2013). Because the presence and amount of warmth a child receives is related to numerous variables later in life, knowing whether adoptive children experience different levels of warmth than non-adopted children may provide insights into differences in later life outcomes.

A meta-analysis based on thirty studies from 16 countries in 5 continents showed a consistent correlation between perceived parental warmth and better child adjustment (Khaleque 2012). Based on this and other studies, it is no surprise that this warmth is vital in the life of an adopted child as well. Parental warmth is clearly important for adoptive children, with warmer parenting associated with lower levels of internalized and externalized behavior (Paine et al. 2020). Studies have also shown that the age of adoption and the number of adverse childhood experiences (ACEs) in a child's life are associated with poorer outcomes in children (Anthony, Paine, and Shelton 2019). While our study does not address specifically whether a child has been adopted from care, one study found that for children adopted from foster care and/or have had adverse childhood experiences (ACE), parental warmth can mitigate some of the effects of those ACEs. (Anthony et al. 2019). If adoptive children are to have the same opportunities as children from two-parent biological households, being exposed to higher levels of parental warmth seems to be one resource that could help achieve that goal.

It is possible that parental warmth relates to the biological ties a parent has with their child, and therefore biological parents would report higher levels of warmth because adopted parents do not share the same genes as their children. Such findings would provide support for the kinship selection theory. Looking at warmth through a lens of family structure explanations would posit that biological families have more societal resources that would help them achieve higher levels of warmth for their children. By contrast, compensatory theory argues that adoptive parents show more warmth for their children in an effort to protect them from any negative outcomes as a result of being adopted. Adoptive parents may especially feel the need to prove their love and devotion to their children, which would therefore result in higher levels of reported warmth.

Aversive and Non-aversive Disciplinary Strategies It is also possible that adopted children are more exposed to or more susceptible to the effects of certain types of discipline styles. Scholars of parental discipline strategies generally group such strategies into more positive and negative types, including “aversive" disciplinary strategies and “non-aversive” disciplinary strategies. Aversive discipline is described as harsh physical and verbal discipline of children and includes actions such as yelling, shouting, spanking, slapping, or making fun of a child (McKee et al. 2007). Harsh verbal and physical discipline is associated with more externalized behavior problems in children (McKee et al. 2007). Whether adopted children have increased behavior problems is not clear. While some studies show no or only slight differences between adopted and non-adopted children, others have demonstrated that adopted children are at a higher risk of both internalized and externalized behavior problems (Escobar, Pereira, and Santelices 2014). Therefore, adopted children may be at a significantly higher risk of behavioral problems after accounting for their adoption status and harsh verbal and physical discipline. Additional issues related to aversive discipline such as low self-esteem and depression have also been found to extend into a child’s adolescent years (Bender et al. 2007). It is hypothesized that an adoptee’s ability to overcome the trauma of adoption combined with the abundance of resources they receive from their adoptive parents combat low levels of self-worth (Juffer and IJzendoorn 2007). Aversive discipline could negatively impact an adopted child in ways that might never have occurred otherwise.

Non-aversive disciplinary strategies, in contrast, include actions such as taking away privileges, explaining to a child what they did wrong, or making a child do something else, such as chores (Dede Yildirim and Roopnarine 2017). A common theme among non-aversive

disciplinary strategies is the desire to cease the reinforcement of misbehavior using specific strategies (Gable et al. 2009; Drayton et al. 2017; Dadds and Tully 2019).

One common non-aversive disciplinary strategy is ignoring the child. Ignoring a child's misbehavior sends the message that they will not get the attention they desire when engaging in negative behaviors (Gable et al. 2009). Discussing misbehaviors with children and/or taking away privileges, such as TV, can help parents communicate which behaviors they approve of and which ones they want children to stop (Gross and Garvey 1997; Webster-Stratton 2003). Time-out is a widely used strategy to help take children out of situations where unfavorable behavior is being reinforced. If used correctly, time-out is an effective method of discipline (Drayton et al. 2017). Issues with time out arise when parents misunderstand the empirical definition of and best usage of this strategy. Simply using time out as a punishment or consequence is not as effective at resolving troublesome behavior as is realizing that this method is taking a child out of a situation with negative reinforcement to help them self-regulate (Dadds and Tully 2019). While there have been some controversies around the use of time-out, implying that it damages child development and mental health, these claims have been refuted by recent researchers (Dadds and Tully 2019). Dadds and Tully (2019) even looked at time-out through the lens of children who had previously experienced trauma and found that effective use of time-out can improve emotional and mental health. This is extremely important in connection with adopted children, as adoption itself can be traumatic, no matter the circumstances (Brodzinsky et al. 2022).

Non-aversive disciplinary strategies such as making a child apologize, taking away privileges, and making them do chores as results of misbehavior can help children take more accountability for their actions and in turn, learn from them (Nelsen 2013). Rather than children trying to avoid the consequences of aversive discipline, they begin to learn about consequences

in a healthy way that aids their development. Making a child apologize, especially when apologies are modeled by the parent as well, can help a child recognize, reconcile, and resolve their mistakes (Nelsen 2013). Lansford and Deater-Deckard (2012) found that the most reported form of discipline is discussing what a child did wrong and why it was wrong. It seems to be universally accepted that teaching a child why something is wrong and socializing them to understand right from wrong is important. This disciplinary strategy contributes to children's empathy and prosocial behavior (Krevans and Gibbs 1996).

Making a child do extra chores is an interesting and somewhat understudied middle ground. While many articles that focus on aversive discipline focus on spanking, yelling, threatening, making fun of a child, etc., chores can be seen as both aversive and non-aversive. Doing additional chores sometimes is not seen as age-appropriate for young children, and therefore seems harsh (Kim and Hong 2007). However, chores can also be a preventative factor for antisocial behavior and help children take more ownership of their space (Klein, Graesch, and Izquierdo 2009). It seems that having chores as a regular part of life may be more beneficial to children than when they are used as a punishment or for discipline.

Looking at discipline through the lens of the kinship theory, it seems that the genetic connection biological parents have with their children would lead them to less aversive manners of discipline. Corporal punishment and yelling, which are both disadvantageous for children, would be utilized less because their biology would steer them to other less aversive discipline strategies so that their offspring have the best outcomes. It is possible that a biological connection could work in reverse, and we would see biological families using these more extreme measures of discipline as a reflection of their desire to ensure the best outcomes for their children. However, previous research has shown that these are not associated with better

outcomes for children, and parents seeking to give their children the best outcomes are not using these strategies (Bender et al. 2007). There may be some delineation between ethnic groups, as non-white parents are more likely to use spanking than white parents (Pinderhughes et al., 2000). This is likely due to the need to protect their children, as non-white parents may feel that learning to listen to authority is a potentially life-saving tool with the knowledge that structural and institutional racism can be deadly (Silveira et al. 2020).

Conversely, adoptive parents would lack this connection and therefore could subject their adopted children to more aversive discipline. When considering family structure explanations, there may be more resources for biological parents, such as support systems, that help them cope with negative behaviors through less aversive discipline. Adoptive parents who lack these systems and are left on their own may struggle to stay away from less aversive discipline and resort to aversive discipline. On the contrary, compensatory theory suggests that adoptive parents make extra investments to ensure that their children have the best outcomes possible and therefore employ significantly lower aversive disciplinary strategies and much higher non-aversive disciplinary strategies. Finally, adoptive parents might be more likely to use non-aversive disciplinary strategies based on parent background (Sege and Siegel 2018). Factors that contribute to using more aversive discipline, such as low maternal age, low socioeconomic status, and having more than one child, apply less often to adoptive parents (Barkin et al. 2007), suggesting that adoptive parents will also use aversive discipline less often than parents in other family types. In addition, McKee et al. (2007) found that parental warmth served as a small buffer from the effects of aversive discipline styles, so I include both aspects of parenting behavior in this study.

THE CURRENT STUDY

Prior research has explored the ways that adoptive children are different from children in other family structures and has left us with questions as to why they may have different outcomes compared to those raised with two biological parents. These studies are significant, especially as they explore these discrepancies through the lens of kinship selection theory, family structure theory, and compensatory theory. There continue to be gaps in understanding the reality for adoptive children and a need to help adoptive parents understand how to give their adoptive children the best chance for positive outcomes. This study compares parental warmth and disciplinary strategies between two-parent adoptive families and two-parent biological families. Both factors are related to outcomes for children later in their adolescent and adult lives (Bender et al. 2007, Ferguson 2013) and are potential mechanisms whose outcomes may differ depending on whether kinship theory, family structure theory, compensatory theory, or selectivity are operating. To explore these questions, I will use the following hypotheses.

H1: Biological parents will show more warmth towards their biological children when compared to adoptive parents and their adopted children due to kinship selection and family structure advantages.

If this hypothesis is true, it would support the notion that biological parents will have higher levels of warmth because their kinship ties make it their best interest to invest more resources into their genetic offspring. Another reason biological parents might display higher levels of warmth would be that they are embedded in family structures that receive adequate support to allow them more time to direct warmth to their children. This will also be reflected in more investments of physical resources and quality time.

H2: Parents of adopted children will show more warmth to their adopted children when compared to parents of biological children because they are compensating for the fact that the child is not their biological child.

If this hypothesis is true, it would support the notion that adoptive parents will have higher levels of parental warmth because they are seeking to compensate for the fact that their children are adopted and therefore are pouring more resources into their children. Another reason biological parents will display higher levels of warmth is due to their family structure and the advantages they have in society. This will also be reflected in more investments of physical resources and quality time.

H3: Adoptive parents will use more aversive disciplinary strategies when compared to parents of biological children because they do not have the same biological ties or social structure to support more non-aversive discipline.

If this hypothesis is true, it would support the notion that adoptive parents will be more likely to say they would yell or spank because they do not have the kinship connections or social structures that encourage them to invest positive resources into their children.

H4: Adoptive parents will use more non-aversive disciplinary strategies when compared to parents of biological children because they are compensating for their lack of biological connection.

If this hypothesis is true, it would support the notion that adoptive parents will be more likely to say they would use non-aversive disciplinary strategies because they are seeking to compensate for any disadvantages their children may have because they are adopted and therefore are pouring more resources into their children.

DATA AND METHODS

For this study, I use data from the Early Childhood Longitudinal Study, Kindergarten Class of 2010-11 (ECLS-K:2011. The ECLS-K:2011 cohort was sampled using a multistage sampling design selecting counties, then public and private schools, and finally randomly selecting twenty-three kindergarteners from each of those sampled schools. Trained field staff assessed children in their schools and collected information from parents. Parents were either interviewed on the phone or in-person if they did not have access to a phone. Teachers, administrators, and after-school workers were all given self-administered questionnaires to complete. There are 21,260 children who attended either full-day or part-day kindergarten in 2010-1 included in this nationally representative sample, selected from both public and private schools. These children come from diverse socioeconomic and racial/ethnic backgrounds and are attending kindergarten for the first time or are kindergarten repeaters. Other participants in the study include children's parents, teachers, schools, and before- and after-school care providers. While this study followed students until the Spring of their fifth-grade year, for this paper I will be using the first two waves of data, which were taken in the Fall and Spring of the child's Kindergarten year. I use demographic information taken from the first wave of parent answers, and also parent responses from waves one and two to assess parental warmth and access to resources. The ECLS-K:2011 included both adopted and non-adopted children. All adoptions took place before the kindergarten year. Sample weights were included in the data.

There are some limitations that come with using this data set, including the inability to look at genes and genetic or epigenetic influences, measurement of the child's feelings of abandonment, measurement of a child's sense of identity, whether a child was adopted from care, and the specific age at adoption. I agree with Hamilton et al. (2007) in that this data set is

strong and appropriate for use on questions concerning adoption because until recently, many adoption studies use specific adopted populations and therefore cannot be compared against other groups. Because this is a nationally representative dataset that includes both adopted and non-adopted children, the results are more generalizable. However, the number of adopted children that fit the parameters of my sample, or those currently living with two adoptive parents, is only 182. This is a relatively small group, and readers are cautioned to take this into account when assessing my findings.

To deal with missing data, I used the chained multiple imputation method (Li, Stuart, and Allison 2015). I executed twenty chained imputations using Stata 16's multiple imputation protocol. I did not impute for missing data on the key explanatory variable (adoption). I also did not impute for the following variables: child race, highest parent education, parent 1 and 3 employment status, parent involvement, minutes read to a child, or number of books owned. I did not agree that imputation was appropriate for race and therefore the missing cases were dropped. Additionally, I also dropped the missing variables from variables where fewer than 3% of cases were missing.

Dependent Variables

Parent Warmth Scale In the ECLS-K, there are questions similar to the Parental Acceptance/Rejection Questionnaire that I use to compose a parental warmth variable (Deater-Deckard et.al 2011; Khaleque 2012). These questions are taken from the Discipline, Warmth, and Emotional Supportiveness portion of the ECLS-K: 2011 administered during children's kindergarten year. In the section specific to parental warmth, there are both positive and negative aspects of warmth. From these questions, I look at the four questions that focus on warmth (Ogg and Anthony 2020; Baker and Iruka 2013). To look at parental warmth, I took questions from

Wave 2 (Spring of Kindergarten year) asking parents to rate themselves on how true the following statements were on a scale of one to four with one being "not true at all" and four being "completely true": Parent expresses affection by hugging, kissing, and holding; Even when parent is in a bad mood, they show child a lot of love; Most of the time parent feels that child likes and wants to be near them; Child and parent often have warm, close times together. I averaged these variables to make a parental warmth scale. Factor loadings of these variables presented an alpha score of .65. I selected these variables from wave 2 because it was the earliest wave the question was asked and was still a part of the kindergarten year (spring).

Aversive and Non-Aversive Disciplinary Strategies Research has shown that aversive disciplinary strategies, especially spanking, can have a negative effect on a child's behavioral, cognitive, psychosocial, and emotional outcomes (Sege and Siegel 2018). For this study, I took parenting discipline strategies from the second wave of the parent survey and split them into two groups, aversive and positive disciplinary strategies (Regalado et al. 2004). The survey asked the parents "Most children get angry with their parents from time to time. If {CHILD} got so angry that (he/she) hit you, what would you do? Would you…" with responses being 1-Yes or 2-No. For non-aversive disciplinary strategies, I included when parents said they would put the child in time-out, discuss what they did wrong, ignore it, make the child do chores, make the child apologize, take away privileges, and give the child a warning, each measured as a single variable. For aversive disciplinary strategies, I included when parents said they would yell at or threaten the child, spank the child, or make fun of the child. I recoded the "No" response to 0.

Key Independent Variable

Because I am investigating potential differences between adopted and non-adopted children, my key independent variable is whether the child was adopted, which I define for this

study as having been adopted by two unrelated adults (Amato 2010). I compare adopted children to those living with two biological parents; this includes a very small number of children living with two biological cohabiting parents (<1%). Children from all other family structures are not included in this study. I found this sample by taking the questions asking what relation parent 1 and parent 2 have with the child and only included those children with either two biological parents or two adoptive parents. This leaves us with a sample size of 8,805 kindergarten students, with 8,623 children being part of biological two-parent households and 182 students being part of adopted two-parent households.

Control Variables

Physical Resource Variables I group economic resources together as they are one form of parental investment that will be connected to the amount of warmth and type of discipline a parent will use (Hamilton et al. 2007). Income and employment status are related to the financial situation of the family, and Hamilton et. al (2007) included owning a home computer and the number of books owned as "economic resources." I include household income, whether a family owns a home computer, parent 1 employment, parent 2 employment, and the number of books owned in the physical resources variable. The income variable has 18 categories, with each category increasing at an increment of $5000 and the highest two categories being $100,000-$200,000 and $200,000+. Income was treated as a continuous variable. Owning a home computer was coded at 0 "No" and 1 "Yes". employment variables were split into 3 categories: 0 "Out of the Work Force" or "Looking for Work"; 1 "Less than 35 hours of work per week"; 2 "35 hours or more per week". For analysis, "35 hours or more per week" was the comparative category. Finally, the number of books was calculated by grouping the responses into 11

categories with increases of 10 books per category: 0 “0 books”, 1 “1-10 books…10 “91-100 books”, 11 “100+ books”.

Parent Quality Time Investment of quality time with children is another resource that parents have (Hamilton et al. 2007; Price 2008). Because there are differences in the amount of quality time that adoptive parents and biological parents spend with their children, it is critical to understand if such time might have an association with parental warmth and discipline (Hamilton et al. 2007). Variables for parent quality time included Community Activities, Extracurricular Activities, Religious Involvement, Volunteer Work, Minutes Read to Child, and a Parent Involvement Variable. For community activities, I included these variables asking parents if they had done the following activities with their child in the previous month “Visit library”, “visit bookstore”, “go to play/concert/show”, “visit art/museum/history site”, and “visit zoo/aquarium/farm”. Each of these variables were labeled 0 for “no” and 1 for “yes”. I then added the variables together and treated this as a continuous variable. For extracurricular activities I included these variables which also asked if the child had participated in the activities in the previous month: Academic Activities, Dance Lessons, Athletic Events, Clubs/Rec Activities, Music Lessons, Drama Classes, Art Classes, Performing Arts, Craft Classes. Answers were 1 for “yes” and 0 for “no”. After this I combined these variables to make a continuous index.

For the volunteer work variable, I coded 0 “No” and 1 “Yes". For minutes read to a child, I divided the responses into four groups of minutes read per day: 1 “0-10 minutes”, 2 “10-20 minutes”, 3 “20-30 minutes”, and 4 “30-60 minutes”. The parent involvement variable was an average of how often a parent reported doing the following activities with their child: telling stories, singing songs, helping with art, doing chores, playing games, going into nature, building,

playing sports, practicing numbers, and reading books. I recoded each of these variables so that responses were 0 “Never”, 1 “1-2 times per week”, 2 “3-6 times per week”, and 3 “Every day”. I then took an average of all these variables to create a parent involvement variable.

Selectivity Factors Control variables that were related to selectivity included the child’s race and the highest level of education by either parent. Adults are not randomly placed in romantic relationships or legal agreements, and as a result, their children are not randomly placed in intact families, biological families, or two-parent families. I account here for factors that are related to selection into different family structures to ensure that any findings are related to adoption rather than to selection into adoptive or non-adoptive families. Racial background and a parent’s education level are two variables that significantly impact not only children’s outcomes, but also the possibility of selection into certain romantic and couple relationships and therefore children’s selection into particular family types. Because the adopted group is so small, the proportion of children from ethnic minority backgrounds from these groups was too small to further divide it. I therefore decided to group the children as either “white” or “non-white”, coded as 0 and 1 respectively. I opted to only include the child’s race, as previous research has already supported that in the US, ethnic minority parents are likely to use more harsh physical parenting strategies to socialize their children to conform to societal norms (Silveira et al. 2020). It would have been ideal to look at parent race to get to interracial adoption, however numbers were too small to analyze here. For parent education, I took the higher education level of the two parents and treated the ordered categorical scale as continuous. There were 7 categories ranging from “8th grade or below” to “Doctorate or Professional Degree”. I combined “vocational/technical program” with the category “some college/associate degree” and the

"Graduate/professional school-no degree" with the "Master's degree" category. These categories helped normalize the distribution of variables.

Other Child Characteristics Other control variables include the child's sex and the number of siblings. I had planned to include the child's age, but the data only gave the age in years, and this provided too little variance to be able to see legitimate differences. Child sex is coded as "0" for male and "1" for female. The number of siblings is treated as a continuous variable and is truncated at five.

ANALYTIC PLAN

I used a series of OLS regression models and logistic regression models to test the relationship between adoption status and warmth and between adoption status and disciplinary strategies. I focused on 11 outcomes: parental warmth, yelling at/threatening the child, spanking the child, sending a child to time-out, ignoring the child, making the child do chores, making the child apologize, taking away privileges from the child, giving the child a warning. For each outcome, I looked at six models. In the first model, I look at adoption status and the outcome variable. In the second model, I add physical resources. In the third model, I take out physical resources but add parent quality time. In the fourth model, I take out parent quality time variables and add selectivity variables. The fifth model removes selectivity variables and looks at child characteristics, including the number of siblings a child has and their sex. In the sixth and final model, I include all potential explanatory variables in the model. I used an ordinary least squares regression model for the warmth variables and logistic regression models for each dichotomous discipline variable and present odds ratios for the latter. When examining the significance of each coefficient, I included significance levels of up to $p<.1$. While typical practice is often to

limit levels of significance at $p<.05$, because of the small number of adopted children in my sample, I extended this slightly.

FINDINGS

Descriptive Statistics

I present summary statistics in Table 1. Similar to previous research, I find that adoptive parents have more resources than two-parent-biological-families, though some differences are relatively small. There is a difference of ~2 in income between groups, representing adoptive families earning about $20,000 more per year on average than biological families. This could correlate with education level, as many fewer adoptive parents reported completing the lowest four education levels and earned 7% more bachelor's degrees, 11% more master's degrees, and 2% more Doctorate degrees. Adoptive parents only owned a home computer about 3% more often than biological parents, and on average they owned about 15 more books. They score slightly higher on the warmth scale, though the difference is small, and the scale is from 0-4. There also is a pattern of adoptive parents using less aversive disciplinary strategies. While they only used yelling slightly less to discipline, they reported using spanking 5% less than their biological-parent counterparts. Adoptive parents more often use non-aversive disciplinary strategies, ranging from .7% (Taking a Privilege Away from a Child) more to 7% (Putting the Child in Time-Out) more for all non-aversive strategies with the exception of making a child do chores, which adoptive parents actually reported less than two-parent-biological-families by 7%. Adoptive parents reported higher levels of quality time variables, most notably that their children participated in religious instruction and volunteered about 13% more than biological children. Adopted children participated in more activities on average and their parents reported reading more to them and being more involved with them. Because the group of adoptive parents is

small, I suggest interpreting these results with appropriate caution. White children account for 58% of the biological group and only 36% of the adopted group, which may or may not indicate an international adoption, circumstances in which even higher amounts of resources have been reported in previous research.

[Table 1 about here]

Regression and Logistic Models

Parental Warmth Table 2 presents a regression analysis for parental warmth. As shown in model 1, there was no significant difference in parental warmth between adoptive and biological parents. Model 2, which looks at physical resources, shows that there were increases in warmth associated with increased household income (b=.005, p<.001), ownership of a home computer (b=.065, p<.001), parent 1 being out of the work force or looking for work (b=.017, p<.1), and an increased number of books owned (b=.008, p<.001), though inclusion of these variables did not change the non-significant coefficient associated with adoption . Model 3 looks at quality time variables and finds that increased participation (b=.016, p<.001) and minutes read to a child (b=.011, p<.1) were associated with increased levels of parental warmth. Within this group, a one unit increase in the parent involvement variable was associated with a .148 increase in parental warmth. Again, however, inclusion of the parent quality time variables caused no change in the association between adoption and warmth. When looking at selectivity variables, having a non-white child (b=.067, p<.001) and increased education (b=.022, p<.001) were associated with more warmth. As was true in previous models, selectivity variables did not change the relationship between adoption and warmth. Looking at other variables, each increase in the number of siblings a child had was associated with a .018 (p<.001) decrease in parental warmth. Finally, looking at the full model, the results held except for the number of books

owned and education no longer being significant, while an increase in extracurricular activities was associated with a slight increase in parental warmth. Again, the association between adoption and parental warmth was not significant in Model 6.

This warmth model suggests that adoptive parents and biological parents are both investing in their children in similar amounts, and this does not affect the warmth that they are showing their children. These findings do not provide support for H1, which predicted that biological parents would be warmer because of their kinship connection and/or because of their family structure advantage. However, they also do not support H2 because I did not find any evidence of compensation theory for explaining parental warmth. Though looking at later child outcomes is beyond the scope of this paper, taken together these findings suggest that there is not any difference in parental investments in the form of warmth that might explain the difference between adopted and biological children later in life.

[Table 2 about here]

Aversive Disciplinary Strategies Table 3 presents the results from my logistic regression models for yelling at/threatening a child. There were no models where adoption status had a significant association with yelling at/threatening a child. Looking further into the yelling at/threatening strategy and physical resources, each one-unit increase in income category is associated with a 3% increase in using this disciplinary strategy, although this is no longer significant in the final model. Having parent 1, which is usually the mother, being out of the workforce or looking for work being about 20% less likely to use yelling than a parent 1 who works full-time. Quality time variables that were significantly associated with increased yelling included extracurricular activities ($b=1.086$, $p<.001$) while decreases in yelling were associated with minutes read to the child ($b=.859$, $p<.01$), and the parent involvement variable ($b=.656$,

p<.001). Only education in the selectivity group showed a significant association with each increase in education being 16% more likely to use yelling. In the full model, income and extracurricular activities were no longer significant factors for yelling. However, the number of books owned (b=1.033, p<.05) became significantly associated with more yelling at/threatening a child while community activities (b=.960, p<.1) became significantly associated with less yelling at/threatening a child. While the final model shows some counterintuitive findings, such as increases in parent education and number of books owned being associated with higher levels of yelling/threatening a child, it is important to note that the percentage of parents reporting this behavior is very low. Additionally, perhaps if a parent were to resort to aversive discipline, it would be yelling at their child instead of spanking their child.

[Table 3 about here]

Table 4 presents the odds-ratios for spanking a child. There was an association at the p<.1 level for spanking and adoption status, with adoptive parents being 35% less likely than biological parents to use this aversive disciplinary strategy. This initially looks like support for the compensatory theory, with adoptive parents spanking their children less; however, this association does not hold up in subsequent models. Every physical resource variable except for parent 2 being employed part time was associated with a decrease in the likelihood of spanking. Quality time variables such as community activities, extracurricular activities, and the parent involvement were all associated with reduced likelihoods of spanking, while those who reported religious activities were 61% more likely to use spanking for discipline. Selectivity variables showed non-white children 20% more likely to be spanked than white children and increases in education decreasing the likelihood of spanking by 20%. Female children were also 12% less

likely to be spanked than males. Looking at the full models shows that many of the associations persist, while community activities and race are no longer significant.

This model originally presented data that supported Hypothesis H3, which predicted that adoptive parents would use aversive disciplinary strategies less because they are compensating for any disadvantages their adopted child would already have due to their adoption status. However, after accounting for physical resources, quality time, and other control variables, there was no significant difference between the two groups and therefore Hypothesis 3 was not supported. Though looking at later child outcomes based on aversive disciplinary strategies is beyond the scope of this paper, these findings suggest that there is not any difference in parental investments in the form of refraining from aversive disciplinary strategies that might explain between adopted and biological children later in life. Further examinations of the models showed that there was not a single physical resource variable that resulted in a significant difference in spanking between adoptive and biological parents. It must be that the combination of these variables leads to no significance between adoptive and biological parents. However, when examining quality time variables, community resources, extracurricular activities, and parental involvement each played a role in explaining potential differences between biological and adoptive parents. Finally, when looking at selectivity factors and child characteristics, race and sex each were important in determining whether there was a significant difference between the groups. When looking at the full model, the combination of variables was associated with this model becoming non-significant. Once again, it is important to note that I included a significance level of $p<.1$. The difference between adoptive and biological parents in any of the models predicting spanking was never statistically significant at a level smaller than a p-value of $p<.1$.

[Table 4 about here]

Non-Aversive Disciplinary Strategies Tables 5-11 present the logistic regression models for non-aversive disciplinary strategies. Table 5 shows the outcomes for discussing what a child did wrong. There were no significant associations between adoptive and biological parents across all six models. The only significant variable predicting this behavior was religious involvement, and after accounting for all other controls, those who participate in religious activities are 30% more likely to discuss with their child what they did wrong than those who do not practice religious activities.

[Table 5 about here]

Similarly, I find in Table 6 that ignoring what a child did not have any significant associations between adoptive and biological parents across all six models. I found that religious activities are significant again, but in the opposite direction, with those practicing religion being 29% less likely to ignore bad behavior as a disciplinary strategy. This makes sense considering the percentage of those parents who wish to discuss what the child did wrong. Another variable that was significant before and after accounting for all other controls was whether families participated in volunteer work, which was associated with a 40% increase in ignoring a child's bad behavior. While parents of non-white children were initially shown to use ignoring 36% more, this association disappears in the final model.

[Table 6 about here]

Table 7 shows the results for making a child apologize. There is no statistical difference between adoptive and biological parents when using this non-aversive disciplinary strategy. Before and after looking at all controls, having either parent looking for work ($b=.821$, $p<.001$, $b=.822$, $p<.05$) is associated with a decrease in the use of this strategy. Those who own more books are slightly more likely to use apologies with their children. Parents who have their

children do volunteer work have an initial 17% increase in making their child apologize, but the significance of this association disappears in the final model. Similarly, increases in education were initially associated with a 5% increase in the use of apologies but also disappeared in the final model. Race was significant in the final model, with parents of non-white children using this strategy 14% less than parents of white children.

[Table 7 about here]

Table 8 follows the pattern of previous strategies, with no significant differences between adoptive and biological parents when looking at taking away privileges as a disciplinary strategy. Having parent 1 looking for work or out of the workforce makes them about 11% less likely than full-time working parents to take away privilege, and this continues after accounting for all controls. An increase in the number of books ($b=1.022\%$, $p<.01$) is associated with a slight increase in the likelihood of using this strategy. The only variable with significance in the quality time controls is how many minutes are read to a child ($b=.945$, $p<.1$), but this disappears in the final model. Race ($b=.819$, $p<.001$) and education ($b=.956$, $p<.05$) are both associated with a decrease in the likelihood of taking away privileges, but only race remains significant in the final model, with parents of non-white children being 11% less likely to take away privileges. Before and after controlling for all variables, both child characteristics variables are statistically associated with a decrease in taking away privileges, with an increase in sibship size being associated with a 4% decrease and being a girl associated with a 16% decrease in this disciplinary strategy.

[Table 8 about here]

These models do not provide support for Hypotheses H4, as there was no significant difference in the use of non-aversive disciplinary strategies between biological and adoptive parents in my sample.

In Table 9, I show the results for logistic regression models examining using a warning as a disciplinary strategy. Surprisingly, after adoption status not being significant in Model 1, there is something about physical resource variables that make adoptive parents more likely to use warnings ($b=1.327$, $p<.1$). When looking at physical resource variables, income and number of books owned are all associated with a decreased use in using warnings but owning a home computer results in being 14% more likely to use warnings. While the number of books owned and owning a home computer continue to be significant in the final model, adoption status is no longer significant in the final model when controlling for quality time, selectivity, and child characteristics. The quality time variables religious activity participation, volunteer work, and parental involvement all were initially associated with about a 15% decrease in the use of warnings, but only religious activities were significant in the final model. Extracurricular activities did become significant in the final model, but only showed a small increase in the likelihood of using warnings. Looking at selectivity variables, which were significant both before and after adding all other controls, parents of non-white children were 29% more likely to use warnings, while an increase in education was associated with a 5% decrease in the use of warning. Child characteristics only showed an increase in siblings ($b=.961$, $p<.1$) to be significant, with a slight decrease in the likelihood of the parent using a warning associated with each additional child.

[Table 9 about here]

This finding provides partial support for Hypothesis H4, which predicts that adoptive parents will use more non-aversive disciplinary strategies. Once physical resources were included in the model, adoptive status was no longer significantly associated with giving warnings as a disciplinary strategy.

Table 10 shows using time-out as discipline. Unlike the other disciplinary strategies presented so far, there was a large and statistically significant difference between adoptive parents and biological parents in the likelihood of using this disciplinary strategy. Model 1, which compares adoptive and biological parents without any controls, shows that adoptive parents are initially 66% more likely to use time-out than biological parents. This supports Hypothesis 4, which uses compensatory theory to predict adoptive parents will use more non-aversive discipline techniques. This association is truncated to the point of non-significance when accounting for physical resources, where income and books owned are both associated with slight increases in the use of time-out. However, adoption status is statistically significant in Models 3 and 4 when accounting for quality time and selectivity. When accounting for quality time variables, adoptive parents were still 57% more likely to use time-out. Extracurricular activities are associated with only a slight increase in the use of time-out ($b=1.051$, $p<.05$), while parents who report that their children volunteer are 21% more likely to use time-out. Each unit increase in parental involvement is associated with a 41% increase in likelihood of time-out. Increases in minutes read to a child are associated with a 10% lower likelihood of using time-out. After accounting for selectivity variables, adoptive parents were 83% more likely to use time-out over biological parents. Non-white children are 58% less likely to receive time-out and each additional level of education is related to a 15% higher likelihood of using time-out. Having more siblings decreases the likelihood of time-out by 6% as the number of siblings increases by

one. Taken together, models 2, 3, and 4, suggest that adoptive parents compensate with physical resources. However, in the final model I find that accounting for all the control variables, adoptive parents are still 64% more likely to use time-out over their biological counterparts even when taking into consideration physical resources. These results support Hypotheses 4 which predict that adoptive parents use less aversive discipline to compensate for any disadvantages their adopted children might be subject to because of their adoption status. While I do not look at any later outcomes associated with using time-out in this paper, these results support the idea that adoptive parents use this disciplinary strategy more than biological parents and that it is associated with the physical resources they invest in their adoptive children. This compensatory effect could be associated with more positive outcomes for adopted children.

[Table 10 about here]

Table 11 also demonstrates an interesting story concerning adoption when looking at chores as discipline. Model 1 shows that adoptive parents are 36% less likely to use chores as a disciplinary strategy, and a significant difference persists across all models. When looking at the physical resources controls, income ($b=.964$, $p<.001$) and having either parent out of the workforce or looking for work ($b=.853$, $p<.05$, $b=.833$, $p<.1$) are both associated with parents assigning chores as a punishment less. The quality time variable of extracurricular activities ($b=.973$, $p<.001$) also shows a small decrease in assigning chores, while participating in religious activities shows an 18% increase in the likelihood of using chores as a punishment. Higher education ($b=.899$, $p<.001$) is associated with a decrease in the likelihood of assigning chores. For child characteristics, an increase in sibship size is associated with an 8.5% increase in assigning chores as discipline, and being a girl was associated with a 12% decrease in being

assigned chores as discipline. In the final model, all these variables remained significant except for extracurricular activities.

[Table 11 about here]

These results do not support my Hypotheses H4, which predicts a compensatory effect that would see an increased number of adoptive parents using chores as a disciplinary strategy. Instead, adoptive parents are less likely to choose this form of non-aversive discipline. This is an interesting finding because the inverse of my hypothesis would be that biological parents would assign fewer chores because they feel closer connections to children genetically or have appropriate social structures to support assigning chores, but these theoretical connections seem tenuous. While I do not look into assigning chores and later child outcomes in this paper, further research on chores and why adoptive parents avoid this disciplinary strategy less may be a key to understanding adoptive children's outcomes. I also return to what my findings might mean for understanding chores as discipline in the discussion.

I investigated whether the variables of physical resources, quality time, selectivity, and other child controls behaved differently in biological and adoptive families. To do this I performed interaction effects between adoption status and all variables. I found that nothing was statistically significant.

DISCUSSION

I used the ECLS-K:2011 data to compare parental warmth and disciplinary strategies between two-parent-adoptive-families and two-parent-biological-families. I test potential theoretical explanations as outlined by Hamilton et al. (2007) to see how any differences between adoptive and biological parents in expressing warmth and imposing discipline might be attributed to parental investments of physical resources and quality time. This study seeks to

further understand possible explanations for the discrepancy between an adopted child's resources and their outcomes, as selectivity factors would suggest that they should do as well or perhaps better than all other children, which is not currently supported by literature on adoption.

The understanding that parental warmth and discipline are for the most part not significantly different between two-parent-adoptive-families and two-parent-biological-families is important on its own. It provides a step to further research to understand how to better serve adopted children and their families. I add my research to the growing sociological research about adopted children, noting that even null results can close less useful inquiries and direct researchers' attention to new ideas. The more that researchers find out about adoptive parents and children, the better and more refined our questions will become.

Still, my results concerning two forms of non-aversive discipline show promise in trying to understand otherwise puzzling results for adopted children. The use of time-out as discipline tells an interesting story in favor of compensatory theory. When looking only at adoption status, adoptive parents were 66% more likely to use time-out than biological parents, and these odds remained very similar even when controlling for physical resources, parental quality time, selectivity factors, and child characteristics. Time-out can help with child development, mental and emotional health, and parent-child relationship (Drayton et al. 2017; Dadds and Tully 2019), and these results support previous findings that adoptive parents invest more in their adopted children because of their desire to compensate for lack of biological connection. Research has shown that adopted children on average have more behavior problems, so their parents may need to discipline them more, and it is possible that adoptive parents, who are likely to have taken more parenting classes than biological parents (Brodzinsky et al. 2022) and therefore have presumably thoroughly researched the best strategies for behavioral problems, might be using

time-out both as compensation and because they are exerting more discipline. If they need to intervene more often with their adopted children because they are misbehaving more, perhaps they have found that using a more authoritative parenting style, rather than authoritarian, is more effective (Bandura 1983). Historically, time-out is seen as a positive disciplinary strategy, and parents could be using any of the non-aversive strategies, but adoptive parents are only significantly using time-out more than biological parents. However, if time-out helps with emotional health and relationships, why do we still see adoptive children struggling in the future? It is possible that the effects of using time-out dissipate over time and therefore no longer help children as they grow up.

The use of chores as discipline presented a different but very interesting story. While looking at using time-out provided support for compensatory theory, chores suggest one of two possibilities. The first is that theories that predict better outcomes for biological children, such as kinship theory or family structure theory, lead biological parents to be more likely to use chores as discipline. However, the mechanisms for explaining why genetic attachment would lead to assigning more chores are tenuous. The other possibility is that adoptive parents continue to compensate, meaning that they view using chores as an aversive disciplinary strategy. There is support for this compensatory explanation in descriptive statistics, where fewer parents report using chores than any other disciplinary strategy I categorized as non-aversive. Perhaps future research could look more at the use of chores as discipline and how parents view this strategy as a teaching opportunity or as punishment, expanding our knowledge of how to categorize chores within discipline strategy research. This is beyond the scope of my research, but if parents view chores as an aversive disciplinary strategy, my findings concerning chores would add to the evidence provided by the time-out findings in favor of adoptive parents using compensatory

strategies. In conjunction with finding no support for any kinship or family structure argument, this is generally supportive of the compensatory model. It is also possible that the unexpected finding concerning adoptive parents being less likely to use chores as discipline here could be related to selectivity effects, where the greater financial security many adopted children have may be associated with having access to a full-time homemaker or hired service who does the cleaning and therefore leaves fewer chores to be used as discipline.

I recognize that there are several limitations to this study. In this study, the target children are only in kindergarten. The age and developmental stage of the children could impact the type of disciplinary strategies that parents choose. Because they are younger children, parents might report higher levels on the factors of warmth reported here than they would for a teenager. Because these children are so young, behavioral challenges that small children face could also affect how parents view their relationship with their child. Additionally, parents are answering these questionnaires. It is possible that the adopted child's point of view would be different than that of their adoptive parent. There is also no way to know whether a child knew they were adopted from the data that I had. Even if a child knew they were adopted, they may have been too young to really understand and internalize what that meant (Brodzinsky et al. 1993:62), which may or may not have impacted relationships or behaviors. Additionally, we do not have information on the age at which the child was adopted. While I chose to look at Kindergarteners to catch these parent behaviors early before school or other outside factors would affect the child, the age at which the child was adopted could still be a factor in any behavior issues they might have. This, in turn, may affect parenting styles and disciplinary strategies.

There are also limitations within the data, as I studied a subgroup of adopted children– those with two adoptive parents in the home. There are many adoptive families who have only

one parent in the home, but there are no single-parent adoptive families in the ECLS-K:2011 data. With my final sample size only being 182, there are issues in generalizability. Because of this small sample size, I was also unable to look deeper into race, including interracial adoption. Another group of parents that I am unable to report on is same-sex couples. This is again because of my small sample size that I cannot further break down the adoptive family group using ECLS-K:2011 data. This highlights that the ECLS-K:2011 was not a dataset meant to study adoptive children. There is critical data that we are missing that helps tell the story of adopted children. I chose to work with this dataset because it is nationally representative and gives me the opportunity to look at adoptive families and compare them to other family types.

Previous research looking into adoptive parents has heavily focused on investments. These investments have been economic, cultural, interactional and social (Hamilton et al. 2007; Larsen Gibby et al. 2021). The framework of this paper considered parental warmth and discipline as two additional forms of investment for adopted children. What if these variables are more than just measures of investment? Perhaps when we look at how parents are treating their children on a daily basis, we are really looking at the essence of parenting. This could explain why my hypotheses were not always supported. Future research could frame these variables in a way that explores warmth and discipline as more than countable investments.

Future research in this field is exciting and vital. Future studies could look at parents of older children and even ask the children themselves about the warmth and discipline that they receive. Taking the few outcomes that were significant, it would be interesting to see if chores or time-out were associated with any worse outcomes for adopted children. It is possible that this kind of strategy is non-aversive to the typical family but is detrimental in the life of an adopted child. The results from this paper could be used to look at adoption from a life course

perspective. While time-out and chores were my only significant findings, it is possible that the relationship between a parent's responses now and an adoptee's future outcomes tell a story that can help us better understand how to give adopted children better outcomes.

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Table 1. Description of Variables

Variable	Description	Proportion or Mean			Standard			Range		
Independent Variable		*All*	*Biological*	*Adopted*	*All*	*Biological*	*Adopted*	*All*	*Biological*	*Adopted*
Adopted			0.979	0.021	-	-	-	0-1	0-1	0-1
0- Child has 2 biological parents										
1- Child has 2 adoptive parents										
Dependent Variables										
Parent Warmth Scale	Parent affection variables averaged- Parent Affection, Parent Shows Love, Child likes to be with Parent, Parent has Close Warm Times with Child	2.691	2.691	2.712	0.38	0.376	0.363	0-3	0-3	1.451-3
0- Not true at all										
1- Somewhat true										
2- Mostly true										
3- Always true										
Parent Discipline Variables										
No=0										
Yes=1										
Aversive disciplinary strategies										
	Yell at/ Threaten the Child	12.63%	12.66%	11.21%	-	-	-	0-1	0-1	0-1
	Spank the Child	17.56%	17.67%	12.36%	-	-	-	0-1	0-1	0-1
Positive disciplinary strategies										
	Give the Child Time-Out	80.03%	80.69%	87.42%	-	-	-	0-1	0-1	0-1
	Discuss What the Child Did Wrong	86.02%	86.00%	86.79%	-	-	-	0-1	0-1	0-1
	Ignore the Child	3.13%	3.09%	5.11%	-	-	-	0-1	0-1	0-1
	Make the Child Do Chores	23.33%	23.47%	16.37%	-	-	-	0-1	0-1	0-1
	Make the Child Apologize	68.17%	68.14%	69.92%	-	-	-	0-1	0-1	0-1
	Take a Privilege Away from the Child	62.54%	62.53%	63.10%	-	-	-	0-1	0-1	0-1
	Give the Child a Warning	37.29%	37.19%	42.06	-	-	-	0-1	0-1	0-1
Physical Resources Variables										
Income	Income in US dollars in ordered categories, 1: $5,000 or less, 2: $5,001-$10,000... 18: $200,000+	12.235	12.191	14.3	5.06	5.069	4.022	1-18	1-18	1-18
Does the child have a home computer?		79.81%	79.76%	82.09%	0.01	0.005	0.005	0.03	0-1	0-1
No=0										
Yes=1										
Parent 1 Employment Status										
1. Not in the labor force		37.37%	37.32%	39.56%	-	-	-	1-3	1-3	1-3
2. Less than 35 hours per week		21.93%	21.88%	24.18%	-	-	-	1-3	1-3	1-3
3. 35 hours or more per week		40.70%	40.80%	36.26%	-	-	-	1-3	1-3	1-3
Parent 2 Employment Status										
1. Not in the labor force		9.26%	9.28%	8.24%	-	-	-	1-3	1-3	1-3
2. Less than 35 hours per week		6.01%	6.07%,	3.30%	-	-	-	1-3	1-3	1-3
3. 35 hours or more per week		84.74%	84.66%	88.46%	-	-	-	1-3	1-3	1-3
Number of Books Owned	Number of books a child owns in ordered categories, truncated at 100+ books. 0: 0 books, 1: 1-10 books, 2: 11-20 books... 11: 100+ books	6.714	6.687	8.005	3.62	3.628	3	0-11	0-11	1-11
Quality Time Variables										

Community Activities	The sum of how many of each of the following activities a parent reported that someone in the family did with their child in the past month: Visits library, visits bookstore, goes to play/concert/show, visits art/museum/history site, visits zoo/aquarium/farm	2.945	2.94	3.193	1.49	1.496	1.392	0-6	0-6	0-6
Extracurricular Activities	The sum of how many of each of the following activities a parent reported that someone in the family did with their child in the past month: Academic Activities, Dance Lessons, Athletic Events, Clubs/Rec Activities, Music Lessons, Drama Classes, Art Classes, Performing Arts, Craft Classes	1.693	1.689	1.985	1.49	1.486	1.476	0-9	0-9	0-7
Does the child participate in religious activities or instruction?		57.24%	56.95%	70.99%	0.01	0.006	0.035	0-1	0-1	0-1
No=0										
Yes=1										
Does the child participate in volunteer work/community service?		18.22%	17.96%	30.52%	0	0.004	0.036	0-1	0-1	0-1
No=0										
Yes=1										
How long do you read to the child?	Number of minutes a parent reads to the child in a day	2.143	2.142	2.187	0.75	0.752	0.792	1-4	1-4	1-4
1: 1-10 minutes										
2: 11-20 minutes										
3: 21-30 minutes										
4: 31-60 minutes										
Parent Involvement	Average of how much a parent tells stories, sings, does art, does chores, plays games, talks about nature, builds things, plays sports, practices reading and writing numbers, and reads books to the child.	1.97	1.968	2.034	0.45	0.447	0.444	.3-3	.3-3	.8-3
0- Not at all										
1- Once or twice per week										
2- 3 to 6 times per week										
3- Everyday										
Selectivity Variables										
Child Race										
1. White, Non-Hispanic		58.00%	58.46%	36.26%	-	-	-	1-2	1-2	1-2
2. Non-white		42.00%	41.54%	63.74%	-	-	-	1-2	1-2	1-2
Highest Education of Either Parent										
1. 8th Grade or Below		2.31%	2.34%	0.55%	-	-	-	1-7	1-7	1-7
2. 9-12 Grade		5.64%	5.74%	1.10%	-	-	-	1-7	1-7	1-7
3. High school diploma		12.84%	12.93%	8.79%	-	-	-	1-7	1-7	1-7
4. Voc/tech program/Some college		27.65%	27.90%	15.93%	-	-	-	1-7	1-7	1-7
5. Bachelor's degree		25.87%	25.71%	33.52%	-	-	-	1-7	1-7	1-7
6. Graduate/professional school-no degree/Master's Degree (MA, MS)		19.08%	18.83%	30.77%	-	-	-	1-7	1-7	1-7
7. Doctorate or professional degree		6.60%	6.54%	9.34%	-	-	-	1-7	1-7	1-7
Other Child Characteristics										
Siblings	Number of siblings of target child, with categories of 5 or more combined.	1.55	1.54	1.67	1.03	1.02	1.44	0-5	0-5	0-5
Gender										
0-Male		51%	52%	42%				0-1	0-1	0-1
1-Female		49%	48%	58%				0-1	0-1	0-1

Notes. Respondents from the ECLS-K:2011 dataset. 8,805 children in total, 8,623 children from two biological parents, 182 children from two adoptive parents. Descriptive c

Table 2. Ordinal Least Squares Regression of Adoption Status (Model 1), Physical Resources (Model 2), Quality Time (Model 3), Selectivity Effects (Model 4), Other Child Characteristics (Model 5), and All Controls (Model 6) for Parental Warmth (Standard Errors in Parentheses; Coefficients Reported in Odds Ratios)

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Adopted	0.021	0.002	0.004	0.023	0.023	0.005
	(.030)	(.030)	(.030)	(.030)	(.030)	(.030)
Physical Resource Variables						
Income		.005***				.005***
		(.001)				(.001)
Owns a home computer		.065***				.049***
		(.012)				(.012)
Parent 1 Employment (fulltime comparison) <35 hrs		.002				-.003
		(.011)				(.011)
Looking for Work		.017†				-0.024*
		(.010)				(0.01)
Parent 2 Employment (fulltime comparison) <35 hrs		.018				-.010
		(.018)				(.018)
Looking for Work		.026				.018
		(.016)				(.016)
Number of Books Owned		.008***				.001
		(.001)				(.002)
Quality Time Variables						
Community Activities			.016***			.013***
			(.003)			(.003)
Extracurricular Activities			.003			.010**
			(.003)			(.003)
Religious Activities			.016			.011
			(.010)			(.010)
Volunteer Work			.010			.004
			(.012)			(.011)
Minutes Read to Child			.011†			.016**
			(.006)			(.006)
Parent Involvement Variable			.148***			.138***
			(.010)			(.010)
Selectivity						
Non-White				.067***		-.039***
				(.009)		(.010)
Education				.022***		.002
				(.003)		(.004)
Child Characteristics						
Siblings					-.018***	-.012***
					(.004)	(.004)
Gender (Female=1)					.009	.013
					(.008)	(.008)
Constant	2.691***	2.527***	2.32***	2.621***	2.714***	2.28***

N= 8805, *p<.05 **p<.01 ***p<.001 †p<.10

Early Childhood Longitudinal Study, Kindergarten Class of 2010-11

Table 3. Binomial Logistic Regression of Adoption Status (Model 1), Physical Resources (Model 2), Quality Time (Model 3), Selectivity Effects (Model 4), Other Child Characteristics (Model 5), and All Controls (Model 6) for Yelling at/Threatening Child (Standard Errors in Parentheses; Coefficients Reported in Odds Ratios)

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Adopted	.869 (.218)	.806 (.203)	.872 (.219)	.804 (.202)	.869 (.217)	.784 (.199)
Physical Resource Variables						
Income		1.03*** (.010)				1.015 (.011)
Owns a home computer		.896 (.083)				.916 (.085)
Parent 1 Employment (fulltime comparison) <35 hrs		.939 (.083)				.935 (.084)
Looking for Work		.808* (.068)				.830* (.072)
Parent 2 Employment (fulltime comparison) <35 hrs		1.02 (.156)				1.011 (.155)
Looking for Work		.902 (.141)				.916 (.144)
Number of Books Owned		1.017 (.016)				1.033* (.013)
Quality Time Variables						
Community Activities			.986 (.024)			.960† (.024)
Extracurricular Activities			1.086*** (.028)			1.038 (.028)
Religious Activities			.939 (.068)			.907 (.067)
Volunteer Work			1.122 (.106)			1.079 (.103)
Minutes Read to Child			.859** (.044)			.868** (.046)
Parent Involvement Variable			.656*** (.056)			.619*** (.056)
Selectivity						
Non-White				.976 (.069)		1.035 (.083)
Education				1.163*** (.033)		1.112** (.038)
Child Characteristics						
Siblings					.977 (.034)	1.018 (.037)
Gender (Female=1)					1.039 (.074)	1.027 (.076)
Constant	0.145***	0.103***	0.414***	0.073***	0.147***	0.246***

N= 8805, *p<.05 **p<.01 ***p<.001 †p<.1

Early Childhood Longitudinal Study, Kindergarten Class of 2010-11

Table 4. Binomial Logistic Regression of Adoption Status (Model 1), Physical Resources (Model 2), Quality Time (Model 3), Selectivity Effects (Model 4), Other Child Characteristics (Model 5), and All Controls (Model 6) for Spanking Child (Standard Errors in Parentheses; Coefficients Reported in Odds Ratios)

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Adopted	0.654†	.794	.659	.723	.658	.764
	(.167)	(.204)	(.169)	(.187)	(.168)	(.200)
Physical Resource Variables						
Income		.954***				.972***
		(.007)				(.008)
Owns a home computer		.754***				.804**
		(.058)				(.064)
Parent 1 Employment (fulltime comparison) <35 hrs		.736***				.732***
		(.061)				(.062)
Looking for Work		.629***				.613***
		(.047)				(.047)
Parent 2 Employment (fulltime comparison) <35 hrs		.943				.935
		(.116)				(.117)
Looking for Work		.759**				.797†
		(.087)				(.093)
Number of Books Owned		.951***				.972**
		(.009)				(.010)
Quality Time Variables						
Community Activities			.943**			.979
			(.021)			(.022)
Extracurricular Activities			.896***			.963†
			(.022)			(.025)
Religious Activities			1.614***			1.763***
			(.109)			(.121)
Volunteer Work			1.005			1.086
			(.084)			(.093)
Minutes Read to Child			.958			.934
			(.040)			(.039)
Parent Involvement Variable			.635***			.719***
			(.046)			(.054)
Selectivity						
Non-White				1.19**		1.102
				(.087)		(.088)
Education				.805***		.861***
				(.018)		(.026)
Child Characteristics						
Siblings					1.041	1.004
					(.032)	(.032)
Gender (Female=1)					.881*	.884*
					(.053)	(.055)
Constant	0.215***	0.831+	0.599***	0.512***	0.214***	1.877**

N= 8805, *p<.05 **p<.01 ***p<.001 †p<.1

Early Childhood Longitudinal Study, Kindergarten Class of 2010-11

Table 5. Binomial Logistic Regression of Adoption Status (Model 1), Physical Resources (Model 2), Quality Time (Model 3), Selectivity Effects (Model 4), Other Child Characteristics (Model 5), and All Controls (Model 6) for Discussing What Child Did Wrong (Standard Errors in Parentheses; Coefficients Reported in Odds Ratios)

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Adopted	1.072 (.255)	1.061 (.255)	1.017 (.243)	1.090 (.261)	1.072 (.256)	1.042 (.252)
Physical Resource Variables						
Income		1.001 (.008)				1.002 (.009)
Owns a home computer		.876 (.080)				.868 (.081)
Parent 1 Employment (fulltime comparison) <35 hrs		.946 (.081)				.943 (.083)
Looking for Work		.946 (.077)				.955 (.079)
Parent 2 Employment (fulltime comparison) <35 hrs		1.002 (.146)				1.011 (.148)
Looking for Work		.887 (.106)				.909 (.108)
Number of Books Owned		1.009 (.011)				1.004 (.012)
Quality Time Variables						
Community Activities			1.021 (.024)			1.028 (.025)
Extracurricular Activities			1.030 (.025)			1.033 (.027)
Religious Activities			1.280*** (.088)			1.304*** (.090)
Volunteer Work			1.045 (.101)			1.051 (.102)
Minutes Read to Child			1.006 (.048)			1.001 (.048)
Parent Involvement Variable			.938 (.079)			.948 (.083)
Selectivity						
Non-White				.045 (.067)		.982 (.076)
Education				.987 (.025)		.953 (.031)
Child Characteristics						
Siblings					.955 (.031)	.947 (.032)
Gender (Female=1)					1.072 (.072)	1.048 (.070)
Constant	6.143***	6.651***	5.341***	6.668***	6.384***	7.493***

N= 8805, *p<.05 **p<.01 ***p<.001 †p<.1

Early Childhood Longitudinal Study, Kindergarten Class of 2010-11

Table 6. Binomial Logistic Regression of Adoption Status (Model 1), Physical Resources (Model 2), Quality Time (Model 3), Selectivity Effects (Model 4), Other Child Characteristics (Model 5), and All Controls (Model 6) for Ignoring Child (Standard Errors in Parentheses; Coefficients Reported in Odds Ratios)

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Adopted	1.681	1.781	1.693	1.574	1.689	1.640
	(.615)	(.655)	(.622)	(.580)	(.618)	(.610)
Physical Resource Variables						
Income		.990				.987
		(.016)				(.019)
Owns a home computer		.987				.986
		(.168)				(.170)
Parent 1 Employment (fulltime comparison) <35 hrs		1.258				1.252
		(.215)				(.215)
Looking for Work		.917				.906
		(.154)				(.154)
Parent 2 Employment (fulltime comparison) <35 hrs		1.325				1.300
		(.344)				(.338)
Looking for Work		1.247				1.228
		(.305)				(.304)
Number of Books Owned		.982				.988
		(.021)				(.024)
Quality Time Variables						
Community Activities			.945			.946
			(.047)			(.047)
Extracurricular Activities			1.065			1.088
			(.050)			(.053)
Religious Activities			.690**			.711*
			(.094)			(.099)
Volunteer Work			1.357†			1.398†
			(.247)			(.259)
Minutes Read to Child			1.084			1.071
			(.101)			(.100)
Parent Involvement Variable			.957			1.018
			(.160)			(.174)
Selectivity						
Non-White				1.356*		1.283
				(.580)		(.202)
Education				1.0004		1.032
				(.050)		(.066)
Child Characteristics						
Siblings					1.013	1.026
					(.066)	(.068)
Gender (Female=1)					.932	.890
					(.131)	(.127)
Constant	0.032***	0.038***	0.035***	0.028***	0.032***	0.029***

N= 8805, *p<.05 **p<.01 ***p<.001 †p<.1

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Table 7. Binomial Logistic Regression of Adoption Status (Model 1), Physical Resources (Model 2), Quality Time (Model 3), Selectivity Effects (Model 4), Other Child Characteristics (Model 5), and All Controls (Model 6) for Making Child Apologize (Standard Errors in Parentheses; Coefficients Reported in Odds Ratios)

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Adopted	1.087	1.030	1.053	1.117	1.093	1.074
	(.187)	(.179)	(.182)	(.194)	(.188)	(.188)
Physical Resource Variables						
Income		1.006				1.003
		(.006)				(.007)
Owns a home computer		1.049				1.058
		(.064)				(.066)
Parent 1 Employment (fulltime comparison) <35 hrs		1.045				1.032
		(.069)				(.069)
Looking for Work		.816***				.821***
		(.049)				(.050)
Parent 2 Employment (fulltime comparison) <35 hrs		.846				.858
		(.087)				(.088)
Looking for Work		.815*				.822*
		(.076)				(.077)
Number of Books Owned		1.027***				1.021*
		(.008)				(.009)
Quality Time Variables						
Community Activities			.991			.981
			(.019)			(.019)
Extracurricular Activities			1.029			1.007
			(.018)			(.019)
Religious Activities			1.060			1.031
			(.054)			(.053)
Volunteer Work			1.171*			1.122
			(.083)			(.080)
Minutes Read to Child			1.002			.974
			(.062)			(.034)
Parent Involvement Variable			1.002			.947
			(.062)			(.060)
Selectivity						
Non-White				.780***		.857**
				(.041)		(.049)
Education				1.047*		.996
				(.019)		(.023)
Child Characteristics						
Siblings					.960†	.984
					(.023)	(.024)
Gender (Female=1)					1.004	1.004
					(.052)	(.053)
Constant	2.139***	1.765***	2.147***	1.933***	2.273***	2.492***

N= 8805, *p<.05 **p<.01 ***p<.001 †p<.1

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Table 8. Binomial Logistic Regression of Adoption Status (Model 1), Physical Resources (Model 2), Quality Time (Model 3), Selectivity Effects (Model 4), Other Child Characteristics (Model 5), and All Controls (Model 6) for Taking Away Privilege from Child (Standard Errors in Parentheses; Coefficients Reported in Odds Ratios)

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Adopted	1.025	1.013	.997	1.102	1.047	1.081
	(.177)	(.175)	(.172)	(.191)	(.181)	(.188)
Physical Resource Variables						
Income		.993				1.000
		(.006)				(.006)
Owns a home computer		1.075				1.093
		(.068)				(.071)
Parent 1 Employment (fulltime comparison) <35 hrs		1.041				1.032
		(.065)				(.065)
Looking for Work		.895†				.890†
		(.053)				(.055)
Parent 2 Employment (fulltime comparison) <35 hrs		1.047				1.049
		(.109)				(.109)
Looking for Work		.892				.918
		(.080)				(.083)
Number of Books Owned		1.022**				1.021*
		(.008)				(.009)
Quality Time Variables						
Community Activities			1.023			1.028
			(.018)			(.019)
Extracurricular Activities			1.008			1.025
			(.018)			(.019)
Religious Activities			1.065			1.060
			(.053)			(.054)
Volunteer Work			1.112			1.090
			(.078)			(.076)
Minutes Read to Child			.945†			.944
			(.032)			(.032)
Parent Involvement Variable			.989			.944
			(.056)			(.032)
Selectivity						
Non-White				.819***		.887*
				(.040)		(.048)
Education				.956*		.906
				(.018)		(.022)
Child Characteristics						
Siblings					.960†	.959†
					(.023)	(.023)
Gender (Female=1)					.848***	.837***
					(.039)	(.039)
Constant	1.669***	1.56***	1.677***	2.23***	1.926***	2.862***

N= 8805, *p<.05 **p<.01 ***p<.001 †p<.1

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Table 9. Binomial Logistic Regression of Adoption Status (Model 1), Physical Resources (Model 2), Quality Time (Model 3), Selectivity Effects (Model 4), Other Child Characteristics (Model 5), and All Controls (Model 6) for Giving Child a Warning (Standard Errors in Parentheses; Coefficients Reported in Odds Ratios)

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Adopted	1.226	1.327†	1.280	1.172	1.227	1.264
	(.198)	(.216)	(.208)	(.191)	(.199)	(.208)
Physical Resource Variables						
Income		.989*				.995
		(.005)				(.006)
Owns a home computer		1.143*				1.161*
		(.077)				(.078)
Parent 1 Employment (fulltime comparison) <35 hrs		.952				.982
		(.061)				(.063)
Looking for Work		.922				.939
		(.057)				(.061)
Parent 2 Employment (fulltime comparison) <35 hrs		.983				.956
		(.098)				(.097)
Looking for Work		.989				.992
		(.084)				(.086)
Number of Books Owned		.960***				.979*
		(.007)				(.009)
Quality Time Variables						
Community Activities			1.022			1.027
			(.018)			(.019)
Extracurricular Activities			1.016			1.034†
			(.018)			(.020)
Religious Activities			.838***			.882**
			(.040)			(.043)
Volunteer Work			.862*			.908
			(.057)			(.060)
Minutes Read to Child			1.033			1.014
			(.035)			(.035)
Parent Involvement Variable			.848**			.915
			(.049)			(.055)
Selectivity						
Non-White				1.404***		1.288***
				(.071)		(.072)
Education				.954**		.957†
				(.017)		(.022)
Child Characteristics						
Siblings					.961†	.961†
					(.022)	(.023)
Gender (Female=1)					1.047	1.030
					(.052)	(.052)
Constant	0.592***	0.836+	0.79*	0.634***	.615***	0.842

N= 8805, *p<.05 **p<.01 ***p<.001 †p<.1

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Table 10. Binomial Logistic Regression of Adoption Status (Model 1), Physical Resources (Model 2), Quality Time (Model 3), Selectivity Effects (Model 4), Other Child Characteristics (Model 5), and All Controls (Model 6) for Giving Child Time-Out (Standard Errors in Parentheses; Coefficients Reported in Odds Ratios)

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Adopted	1.666*	1.341	1.578†	1.831*	1.683*	1.641*
	(.396)	(.324)	(.377)	(.444)	(.401)	(.403)
Physical Resource Variables						
Income		1.036***				1.022**
		(.007)				(.008)
Owns a home computer		1.051				1.044
		(.079)				(.081)
Parent 1 Employment (fulltime comparison) <35 hrs		1.106				1.061
		(.089)				(.087)
Looking for Work		.969				.979
		(.067)				(.069)
Parent 2 Employment (fulltime comparison) <35 hrs		.892				.942
		(.112)				(.119)
Looking for Work		.964				.945
		(.101)				(.100)
Number of Books Owned		1.096***				1.054***
		(.010)				(.011)
Quality Time Variables						
Community Activities			.994			.971
			(.021)			(.022)
Extracurricular Activities			1.051*			.985
			(.023)			(.022)
Religious Activities			1.015			.901
			(.064)			(.060)
Volunteer Work			1.213*			1.047
			(.107)			(.095)
Minutes Read to Child			.900**			.951
			(.037)			(.039)
Parent Involvement Variable			1.408***			1.135†
			(.099)			(.082)
Selectivity						
Non-White				.420***		.510***
				(.025)		(.036)
Education				1.150***		1.048†
				(.026)		(.031)
Child Characteristics						
Siblings					.937*	.984
					(.026)	(.029)
Gender (Female=1)					1.003	1.024
					(.056)	(.060)
Constant	4.179***	1.511***	2.422***	3.459***	4.617***	2.658***

N= 8805, *p<.05 **p<.01 ***p<.001 †p<.1

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Table 11. Binomial Logistic Regression of Adoption Status (Model 1), Physical Resources (Model 2), Quality Time (Model 3), Selectivity Effects (Model 4), Other Child Characteristics (Model 5), and All Controls (Model 6) for Make Child Do Chores (Standard Errors in Parentheses; Coefficients Reported in Odds Ratios)

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Adopted	.638*	.698†	.630*	.682†	.636*	.702†
	(.136)	(.149)	(.134)	(.146)	(.136)	(.151)
Physical Resource Variables						
Income		.964***				.971***
		(.006)				(.007)
Owns a home computer		1.048				1.041
		(.075)				(.076)
Parent 1 Employment (fulltime comparison) <35 hrs		.945				.924
		(.068)				(.067)
Looking for Work		.853*				.815**
		(.057)				(.056)
Parent 2 Employment (fulltime comparison) <35 hrs		.942				.944
		(.107)				(.107)
Looking for Work		.833†				.827†
		(.089)				(.089)
Number of Books Owned		.992				.984
		(.008)				(.009)
Quality Time Variables						
Community Activities			1.006			1.027
			(.020)			(.021)
Extracurricular Activities			.973***			.980
			(.019)			(.021)
Religious Activities			1.186**			1.192**
			(.067)			(.069)
Volunteer Work			.986			1.004
			(.075)			(.077)
Minutes Read to Child			1.029			1.022
			(.041)			(.041)
Parent Involvement Variable			1.084			1.117
			(.073)			(.076)
Selectivity						
Non-White				.977		.930
				(.057)		(.061)
Education				.899***		.945**
				(.019)		(.025)
Child Characteristics						
Siblings					1.085**	1.071*
					(.029)	(.030)
Gender (Female=1)					.880*	.882*
					(.052)	(.053)
Constant	0.307***	0.532***	0.244***	0.498***	0.287***	0.438***

N= 8805, *p<.05 **p<.01 ***p<.001 †p<.1

Early Childhood Longitudinal Study, Kindergarten Class of 2010-11