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Distinguishing between Demographic and Contextual Factors Linked to Early Childhood Physical Discipline and Physical Maltreatment among Black Families

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Abstract

Background: Despite persistent discouragement from professionals, U.S. parents, especially Black parents, highly endorse physical discipline, which also is a risk factor for physical maltreatment. Few studies have examined physical discipline heterogeneity or maltreatment, and predictive demographic and contextual factors within the same population.

Objective: This exploratory study aimed to identify subgroups of Black parents' use of early childhood physical discipline. It also examined whether demographic and contextual factors' relations with physical discipline were similar or different from those with physical maltreatment.

Participants and Setting: 310 Black parents from three geographically-distinct high-risk U.S. communities participated in home-based interview and survey data collection.

Methods: We conducted latent class analyses to identify sub-groups among Black parents characterized by physical discipline frequency and type. Bolck, Croon, and Hagenaars method and binary logistic regression were conducted to examine relations between demographic and contextual factors (child gender, family income, marital status, parental education, family stress and perceived neighborhood safety), discipline and maltreatment.

Results: Three physical discipline classes, which differed in frequency and type, were identified among Black parents. Only income was significantly related to both discipline ($\chi^2=18.97, p<.001$) and maltreatment ($OR=1.03, p<.01$). Child gender ($\chi^2=6.66, p<.01$), never-married status ($\chi^2=13.94, p<.001$), parental education ($\chi^2=10.32, p<.001$), and neighborhood safety ($\chi^2=7.57, p<.01$) also significantly related to discipline. Family stress was significantly related to physical maltreatment ($OR=1.42, p<.001$).

Conclusions: Differing demographic and contextual factor relations with physical discipline and maltreatment within a Black population should be considered when identifying parents at-risk.

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Keywords

physical discipline; physical maltreatment; risk factors; Black parents; antecedents

1. Introduction

Parents in all racial and ethnic groups across the United States, notably Blacks, continue to endorse physical discipline despite persistent discouragement from researchers and practitioners (Gershoff, Lansford, Sexton, Davis-Kean, & Sameroff, 2012; Lee, Grogan-Kaylor, & Berger, 2014). Physical discipline, also known as physical punishment, is “the use of physical force with the intention of causing a child to experience pain, but not injury, for the purpose of correction or control of the child’s behavior” (Straus & Donnelly, 2009, p. 4). Physical discipline is a normative practice among Black families (e.g., McLoyd, Kaplan, Hardaway, & Wood, 2007), but it is associated with higher risk of physical maltreatment, especially during early childhood (e.g., Zolotor, Robinson, Runyan, Barr, & Murphy, 2011). Physical maltreatment, also known as physical abuse, can be defined as the non-accidental physical injury (ranging from minor bruises to death) as a result of harming the child, which may include beating, hitting, or punching, that is inflicted by a caregiver, parent, or other person who has responsibility for the child (Institute of Medicine [IOM] & National Research Council [NRC]), 2012, p. 21). Black children not only have higher rates of physical child maltreatment than White children, but also have higher rates of physical maltreatment related deaths than children from other racial/ethnic groups (Dakil, Cox, Lin, & Flores, 2011). Even though there is a link between physical discipline and physical maltreatment, there is limited research investigating whether the factors for physical discipline differ from risk factors for physical maltreatment (MacMillan & Mikton, 2017). Moreover, the literature frames Black parents monolithically, viewing them as a group that frequently uses physical discipline, despite studies documenting within group variability (e.g. McLoyd et al., 2007; Anonymous et al., 2000). Relations with demographic and contextual factors may differ by physical discipline frequency and type.

Using the Integrated Model for the Study of Developmental Competencies in Minority Children (Integrated Developmental: García Coll et al., 1996) and a Neighborhood Etiology framework (Coulton, Crampton, Irwin, Spilsbury, & Korbin, 2007), this study investigated 1) early childhood physical discipline classes among Black parents living in high risk communities; and 2) links to demographic and contextual factors (child gender, family income, parents’ marital status, parental stress, parental education, and perceptions about neighborhood safety) in comparison to parents who physically maltreated their young children. This study’s findings may inform child welfare workers’ assessment of physical maltreatment and parenting interventions targeting families at-risk for maltreatment.

2. Literature Review and Theoretical Frameworks

2.1 Early childhood physical discipline

In 2018, the U.S. became the only United Nations country not to ratify the United Nations Convention on the Rights of the Child, which includes a ban on physical discipline. Parents’

decisions about disciplining and rearing children is considered a fundamental constitutional right in the U.S. (Pollard, 2002). All states have laws permitting 'reasonable' physical discipline but few have sufficiently defined 'reasonable' (Coleman et al., 2010). In the last few decades, many researchers, practitioners, and professional organizations (e.g., American Academy of Pediatrics) have persistently discouraged parents from physically disciplining their children amid the voices that assert parents' right to discipline children as they see fit (Sege, Siegel, App Council on Child Abuse and Neglect, & App on Psychosocial Aspects of Child and Family Health, 2018). Physical discipline is linked to negative outcomes in children, including academic difficulties (Bodovski & Youn, 2010), increased aggression (Deater-Deckard, Dodge, Bates, & Pettit, 1996), and psychopathology (Gershoff & Grogan-Kaylor, 2016). More importantly, significant evidence links physical discipline with physical maltreatment risk (e.g. Zolotor et al., 2011). However, states vary widely in definitions of physical discipline and physical maltreatment, and federal laws provide little guidance (Coleman et al., 2010). As a result, there is no universal agreement about the line between physical discipline and physical maltreatment in the U.S. (Coleman et al., 2010). As the U.S. spanking debate persists, child welfare workers and mandated reporters must define this line with little direction and parents continue to physically discipline children without understanding what 'reasonable discipline' is.

Most adults in the U.S., regardless of race/ethnicity, endorse physical discipline. In 2016, 76% of men and 66% of women ages 18 to 65 agreed that sometimes it is necessary to give a child a "good, hard spanking" (Child Trends, 2018a). Parents' reports of physical discipline include spanking and hitting with an object (Zolotor et al., 2011). Physical discipline often starts during early childhood. Thirty-three percent of U.S. families reported spanking children 10 to 18 months of age, and 64% reported spanking children ages 19 to 35 months (Regalado, Sareen, Inkelas, Wissow, & Halfon, 2004; Zolotor et al., 2011). As stated earlier, physical discipline is considered to be a normative practice among Blacks (McLoyd et al., 2007). Black boys are more likely to be spanked than girls (MacKenzie, Nicklas, Brooks-Gunn, & Waldfogel, 2011). Black children are more likely to be spanked at a younger age than other racial groups (MacKenzie et al., 2011). Furthermore, Regalado et al. (2004) found that Black parents were twice as likely to frequently spank infants and toddlers ages four to thirty-five months as White parents.

Across races, ecological factors such as low socioeconomic status (SES) and single-parent household composition are related to physical discipline (e.g., Lansford et al., 2009). Accordingly, Black families with low SES are more likely to use physical discipline (e.g., Anonymous et al., 2000); single parents, most likely low SES (Oliver, Kuhns, & Pomeranz, 2006), are more likely to use physical discipline (e.g., Deater-Deckard et al., 1996). Finally, reflecting the role of low-SES neighborhood processes, concentrated disadvantage and community violence predicted use of low-SES parent-child physical aggression across the spectrum of physical discipline and physical maltreatment (Molnar et al., 2003).

The relations between race, SES and physical discipline are complex. However, few studies have illustrated the nature of these complex relations. In the Integrated Developmental framework, García Coll et al. (1996) hypothesize that the effects of social statuses such as race and SES on parenting are indirect and mediated by mechanisms such as racial

discrimination and oppression. These mechanisms create segregated contexts which result in environments and experiences that only families of color have and which uniquely affect children of color's developmental processes and outcomes (García Coll et al., 1996). Black parents with low SES are double minorities, which refers to "when devalued identities interact to influence the individual in a way that is greater than the sum of the independent effects of those identities" (Gonzales, Blanton & Williams, 2002, p. 659). Thus, these Black parents may experience significantly more oppression and discrimination. In response to these stressful experiences, Black parents may use physical discipline as a strategy to ensure that children are prepared to function successfully in these harsh contexts (Thomas & Dettlaff, 2011). The Integrated Developmental framework (García Coll et al., 1996) may provide an explanation for racial/ethnic differences in physical discipline research. For example, Anonymous et al. (2000) found that White and Black parents with low SES were more likely to use physical discipline because of strong endorsement and higher stress; the stress, in turn, was linked to intense cognitive-emotional processes such as attributing hostile intent to their children's behavior. More intense cognitive-emotional processes were linked to harsher physical discipline (Anonymous et al., 2000). However, Black parents worried more about the future implications of their children's misbehavior and had higher stress than White parents. As a result, they were more likely to have more intense cognitive-emotional processes and use harsher physical discipline (Anonymous et al., 2000). Research incorporating demographic and contextual factors can help clarify these complex relations and determine whether there are similar factors for child maltreatment. With its incorporation of demographic and contextual factors, this study addresses the gap in knowledge regarding the interrelations among race, SES and physical discipline.

2.2 Early childhood physical maltreatment

In 2016, about 676,000 children in the U.S. were reported to be maltreated; of those children, 18.2% were physically maltreated (U.S. Administration for Children and Families [ACF], 2018). Of maltreatment related deaths, 44% were due to physical maltreatment (ACF, 2018). Young children are most at risk for maltreatment. More than 28% of child maltreatment victims were under age three (ACF, 2018). In 2016, Black children had the second highest maltreatment rate (13.9 per 1,000 children), and higher rates of substantiated physical maltreatment and related deaths than other racial/ethnic groups (ACF, 2018). Black children have generally been disproportionately represented among maltreated children (e.g., Dakil et al., 2011). This disproportionality may best be explained by the relation between race and income.

Low-SES, including living in poverty, is one of the strongest predictors of all types of child maltreatment (Berger, 2005). Of Black children in the U.S., 58% live in low-income households and of those children, 31% live in poverty (Child Trends, 2018b). Of Black children under age five, 37% live in poverty (Child Trends, 2018b). Low-income status and poverty are interrelated with physical maltreatment risk factors such as parental stress and single parenthood. High levels of stress due to frequent negative life events and having negative perceptions of those events predict physical maltreatment risk (Whipple & Webster-Stratton, 1991). Highly stressed parents, notably those with low-SES, are more likely to have difficulty controlling their anger and may be intolerant of their children's misbehavior, no

matter the severity (McPherson, Lewis, Lynn, Haskett, & Behrend, 2009). Single parents are likely to be high school dropouts, struggle with employment, live in poverty, experience psychopathology, and abuse substances (Oliver et al., 2006). Single parenthood alone is not a predictor, rather it is the combination of certain characteristics along with being a single parent that play a role in maltreatment risk.

Neighborhood characteristics also contribute to physical maltreatment. Coulton et al.'s (2007) neighborhood etiology framework considers the relations between neighborhoods and child maltreatment and describes three neighborhood pathways that influence maltreatment. The first pathway, *behavioral influences*, considers how neighborhood structure may influence maltreating behaviors. (Coulton et al., 2007). Through the second pathway, *definition, recognition, and reporting*, neighborhood conditions influence how maltreatment is defined, identified, and report which results in variation in maltreatment reports (Coulton et al., 2007, p. 1119). The last pathway, *selection*, examines why certain families live in neighborhoods with characteristics associated with maltreatment risk and report. Because our study investigates contextual influences on families' maltreating behaviors, we focused on the *behavioral influences* pathway. Neighborhood structure and characteristics can contribute to social stressors that weaken interactions between parents and children, which in turn, may lead to child maltreatment (Coulton et al., 2007, p. 1120). In our study, we examined effects of perceived neighborhood safety on physical maltreatment. Parents in low-SES communities characterized by high crime and violence may perceive their neighborhoods negatively; their concerns may also contribute to parental stress (e.g., Kohen, Leventhal, Dahinten, & McIntosh, 2008). Negative perceptions and related stress have been linked to higher physical maltreatment rates in disadvantaged contexts (e.g., Kohen et al., 2008). Thus, we examined perceived neighborhood safety, which in the presence of stress, may be related to maltreatment.

2.3 The present study

This study addresses two critical gaps in the literature. First, with insufficient attention on the degree of heterogeneity in physical discipline among Black parents, the field needs a clearer delineation of how this parenting practice varies within this cultural group. Taking a variable-centered approach, prior studies (e.g., Anonymous, 2000; McLoyd et al., 2007) suggest within group variation, notably due to SES, but Black parents may differ along other dimensions. Person-centered approaches may help identify these dimensions. Thus, this exploratory study's first aim was to describe patterns or classes of Black parents' use of physical discipline during early childhood. These parents are from three geographically-distinct high-risk U.S. communities characterized by high rates of crime and poverty. We examined parents' frequency of overall physical discipline as well as of spanking, hitting, spanking with something, and hitting with something during prekindergarten and kindergarten. Parents may differ in the frequency as well as the type of physical discipline such as spanking (Thomas & Dettlaff, 2011). The link between physical discipline and factors may depend on frequency and type (e.g., L. J. Berlin et al., 2009). Thus, we conducted latent class analyses, a person-centered analytic approach, to examine heterogeneity among Black parents and identify unobserved homogeneous subgroups of parents who share similar physical discipline practices (Lanza & Cooper, 2016). We

hypothesized that at least two physical discipline classes, differing by frequency and type, would be identified.

Second, despite significant research on the factors linked to physical discipline and maltreatment, few studies have examined if the factors linked to physical discipline and physical maltreatment differ (MacMillan & Mikton, 2017). This is critical because policymakers and service providers may make decisions based on assumptions that the factors linked to each parenting behavior are the same, when they may, in fact, differ. Studies identifying physical discipline factors and physical maltreatment risk factors used different populations. There likely is overlap, as Stith et al.'s (2009) child maltreatment meta-analysis suggests, but there is little empirical support for this hypothesis. Because Black families may be more likely to use physical discipline and have disproportionate rates of physical maltreatment, we examined the factors linked to early childhood physical discipline and physical maltreatment within the same sample to identify overlapping and distinct risk factors.

Aim two, then, focused on shedding light on the complex influences on physical discipline and physical maltreatment, and compared demographic and contextual factors' relations with the different subgroups of Black parents identified in aim one. Based on prior research, we included child gender, family income, parents' marital status, family stress, parental education, and perceptions about neighborhood safety. In examining the relations to these demographic and contextual factors, we considered that the intersection of factors may explain parenting behaviors and that these factors do not occur in isolation. Because there is limited prior research investigating demographic and contextual influences' relations with physical discipline and physical maltreatment within the same Black sample, we did not hypothesize.

3. Methods

3.1 Participants and procedures

We used data from 310 Black families from all three cohorts in prekindergarten and kindergarten of the Fast Track Project, a sequential longitudinal intervention study of the development and prevention of conduct disorder (Conduct Problems Prevention Research Group [CPPRG], 1992, 2000). Children and families were recruited from target schools in four sites: (1) Durham, NC, a small city with a significant low-income, primarily Black population; (2) Nashville, TN, a moderate-sized low-to middle-income city with Black and White populations; (3) central Pennsylvania (PA), a mostly rural area with a low-to-middle-income White population; and (4) Seattle, Washington, an ethnically diverse population of primarily low-to-middle income families (Lochman & CPPRG, 1995). Target schools served communities that were designated as 'high risk' based on crime and poverty statistics and were randomly assigned to intervention or control condition (Lochman & CPPRG, 1995). From 1991 to 1993, 9,594 kindergarteners were screened for classroom behavioral problems through teacher interviews. Parents of children in the top 40% then were interviewed to screen for behavioral problems. Once this multistage screening procedure (Lochman & CPPRG, 1995) was completed, children meeting the criteria in the target schools were selected for the high-risk sample (intervention = 445, control = 446) and normative sample

(children attending control schools; $n = 387$) that represented the range of risk scores in the population. The present study included only the control and normative samples.

By design, the severity of behavior problems in the highest quintile of the normative sample was comparable to that observed in the high-risk control sample; thus, 79 children were in both samples and were excluded from analyses (e.g., McMahon, Witkiewitz, Kotler, & CPPRG, 2010). Participants from PA ($n = 11$) were excluded because of sample size. Lastly, parents who did not use physical discipline and/or did not have incidents of physical maltreatment were excluded from the sample ($n = 11$). Descriptives for the 310 children and caregivers are in Table 1. Because 91% of primary caregivers were biological parents, we refer to all primary caregivers as ‘parents’.

Informed about confidentiality, participants provided written consent and oral assent for two-hour home-based data collection. Trained research dyads annually conducted interviews and administered measures with the primary parent and child. Upon completion, families received nominal cash incentives. The Institutional Review Boards of Pennsylvania State University, Duke University, University of Washington, and Vanderbilt University approved all procedures.

3.2 Measures

3.2.1 Early childhood physical discipline.—Early childhood physical discipline was measured using items from two measures, the Developmental History (Dodge, Bates, & Petit, 1990) and the Conflict Tactics Scale (Straus, 1979). The item, frequency of overall physical discipline by the primary parent, was from the Developmental History measure, which assessed parents’ disciplinary strategies during their children’s pre-kindergarten and kindergarten years (Godwin, 2004). Parents were asked “How often did you physically punish [target child] during these pre-kindergarten [or kindergarten] years?” Response options were ‘*Never*’, ‘< 1x/month’ (1), ‘1x/month’ (2), ‘1x/week’ (3), and ‘*Almost every day*’ (4). There are parents who responded that they never hit or spanked during kindergarten but indicated that they did use overall physical discipline. Using the overall indicator captured the physical discipline of parents who may have used alternative forms of physical discipline. Four items from the Conflict Tactics Scale, which examines parental responses to parent-child conflicts, were used in our study. Parents were asked how often they spanked their child, spanked their child with something, hit or tried to hit their child, and hit or tried to hit their child with something. Responses were coded as ‘*Never*’ (0), ‘< 1x/month’ (1), ‘1x/month’ (2), ‘2–3x/month’ (3), ‘1x/week’ (4), ‘2–3x/week’ (5) and ‘*Almost every day*’ (6). Due to the distribution of responses, we transformed these four indicators into 5-level categorical variables and responses were recoded as ‘*Never*’ (0), ‘< 1x/month’ (1), ‘1x/month’ (2), ‘2–3x/month-1x/week’ (3), and ‘2–3x/week-almost every day’ (4).

3.2.2 Early childhood physical maltreatment.—Three items from the Developmental History (Dodge et al., 1990) and one item from the Conflict Tactics Scale (Straus, 1979) were used to measure early childhood physical maltreatment. The Developmental History measure asked parents if the child was disciplined severely enough to leave marks, welts, or bruises in the *Bruises* item. Parents’ responses were rated as ‘No’

(0), 'Minor' (1), or 'Major' (2). Responses other than 'No' were considered maltreatment. In the second item, *Harm*, parents indicated any concerns regarding their child being harmed. The responses were 'No concern' (0); 'Minor concern; unspecified unexplained injuries' (1), 'Concerned; possible harm by family member' (2), 'Definite incident of harm by someone outside the family unit' (3), or 'Definite incident of harm by family member' (4). A response of 'Definite harm by family member' was considered maltreatment. The third item, *Authorities Involved*, was the interviewer's judgment of whether the child had been severely harmed. The interviewer's response was rated as 'Extremely unlikely' (1), 'Probably not' (2), 'Suspected, possible' (3), 'Probably occurred' (4), or 'Authorities involved' (5). Responses of 'Authorities involved' (5) was considered an indicator of maltreatment. The Conflict Tactics Scale item, *'Beat up your child'* is a maltreatment indicator (Straus, Hamby, Finkelhor, Moore, & Runyan, 1997). Parents were asked if they beat up their child. Four response options ranged from 'Never' to 'Almost every day'. Responses other than 'Never' were considered maltreatment. Parents with one or more maltreatment indicator(s) (of the four above) during the prekindergarten and/or kindergarten years were categorized as maltreating parents.

3.2.3 Demographic and contextual factors.—*Parents' marital status, parental education, and income* were from the Family Information Form (CPPRG, 1990), covering demographics. *Income* ranged from \$6,000 to \$58,000; thus, we centered it on \$6,000. *Marital status* was coded as 'Married' (1), 'Separated/Divorced' (2), 'Widowed' (3), and 'Never-Married' (4). *Parental education* was coded based on parents' report of their completed schooling: responses were coded as '1–6 years' (1), '7–9 years' (2), '10–11 years' (3), '12 years' (4), '13–15 years' (5), '16–17 years' (6), and '18+ years' (7). Child gender was coded 0=Male, 1=Female.

Family stress was assessed using the stress scale from the Life Changes measure (Dodge et al., 1990). Parents reported on life stressors during the pre-kindergarten and kindergarten periods and indicated whether each of 20 stressors which included moving, medical problems, deaths, separation/divorce, remarriage/reconciliation, parent-child separation, financial and/or legal problems, substance use/abuse, extended family conflicts, pregnancies, miscarriages, job stress and loss of job occurred. Response options were '*did not occur*' (0), '*minor*' (1) or '*major*' (2). For each period, stress scores could range from 0 to 32. The subscale had adequate internal consistency reliability for the control and normative samples (control $\alpha = .68$; normative $\alpha = .73$). We calculated a cumulative stress score by adding the scores for pre-kindergarten and kindergarten, resulting in a possible range from 0–64. Due to a skewed distribution, the variable was transformed into an 8-level categorical variable. The categories were '0–3' (1), '3.01–5' (2), '5.01–7' (3), '7.01–10' (4), '10.01–12' (5), '12.01–14.6' (6), '14.61–19' (7), and '19.01+' (8).

Neighborhood safety was measured using the Neighborhood Safety subscale from the Neighborhood Questionnaire (CPPRG, 1991), which assessed parents' satisfaction with their neighborhood. The five-item subscale had adequate internal consistency reliability for the control and normative samples (control $\alpha = .77$; normative $\alpha = .77$) (Pek, 2006). Parents were asked 1) how they felt about their neighborhood (3-point scale); 2) how satisfied they were with police protection (3-point scale); 3) how often there were problems with

muggings, burglaries, assaults and other violent crime (4-point scale); 4) how serious a problem drug use and selling was (3-point scale); and 5) how well the police and residents got along (3-point scale). Violent crime and drugs items were reverse coded. All raw scores were converted to a 10-point scale by multiplying the scores by 10 and dividing them by the highest possible score within each item (Pek, 2006). The subscale score was calculated by taking the responses' mean and multiplying them by the number of items on the scale. The Neighborhood Safety subscale had a maximum score of 50 when using the ten-point scale. Higher scores reflected higher levels of satisfaction.

3.3 Analyses

We used SPSS Version 24 for data preparation and MPlus 8.5.1 for analyses. We reviewed the four maltreatment indicators (section 3.2.2) and created a binary variable, Abuse, to identify maltreating parents. Less than 1% of the data were missing. After investigating relations between variables and missing data, we determined that the data were missing completely at random (MCAR) because the missingness was unrelated to other variables. Missingness was addressed using full information maximum likelihood (FIML) estimation, which yields unbiased parameter estimates with MCAR data (Muthen & Muthen, 2015). Chi-squares were conducted to examine factor relations within the physical discipline only and maltreatment only populations.

3.3.1 Latent class analysis (LCA).—To identify subgroups of Black parents with similar physical discipline practices, we conducted LCA. LCA identifies homogenous subgroups, termed latent classes, of individuals who share similar characteristics and examine the differences between the classes as well (Lanza & Cooper, 2016). Models with two to six classes were tested and the final model was selected based on fit statistics, parsimony, and theoretically and practical interpretation (Collins & Lanza, 2010). Fit criteria included Akaike Information Criterion (AIC; Akaike, 1987); Bayesian Information Criterion (BIC; Schwarz, 1978); and Sample Size-Adjusted BIC (SSA-BIC; Sclove, 1987). To evaluate improvement in model fit of a k -class solution (e.g., three class) compared to a $k-1$ class solution (e.g., two), we used two likelihood ratio tests, the Vuong-Lo-Mendell-Rubin likelihood test (VLMR-LMR; Lo, Mendell, & Rubin, 2001; Vuong, 1989) and the Bootstrap Likelihood Ratio Test (BLRT; McLachlan & Peel, 2000). We assessed the accuracy with which parents were classified into their most likely latent class using entropy values (K. S. Berlin, Williams, & Parra, 2014). Lastly, we examined the parsimony, interpretability, and class means to determine if there were meaningful differences among the class solutions. Classes were named by the discipline frequency and type.

3.3.2 Bolck, Croon, and Hagenaars (BCH) method and binary logistic regression.—We used the BCH method to investigate links between the physical discipline classes and demographic and contextual factors. The BCH method uses a weighted ANOVA that represents true latent classification by using weights to reflect measurement error of the latent variable, and examines the equality of the means of the class-specific external variable means using Wald chi-square tests (Bakk & Vermunt, 2016). For physical maltreatment, we conducted binary logistic regression to examine the associations between physical maltreatment, represented by the Abuse variable, and the risk

factors. We reported the analyses using odds ratio, which is the change in the odds of Y when there is a unit change in X (Peng, Lee, & Ingersoll, 2002).

4. Results

4.1 Physical discipline and maltreatment descriptives

Table 2 contains physical discipline indicator descriptives. Of the 310 parents, 242 (78%) physically disciplined and did not maltreat their children. They physically disciplined during prekindergarten only (1.7%), during kindergarten only (9.5%), or during both time periods (89.8%). Parents spanked their children (95%) and/or spanked with something (76%). They also hit their children (31%) and a few hit their children with something (23%).

Sixty-eight parents (22%) maltreated children during early childhood. About 90% of these parents ($n = 61$) had one maltreatment indicator: 80% left bruises on their child, 12% beat their child, and 8% reported that their child was harmed. Six percent of parents had two indicators: three parents had the authorities involved and left bruises, and one had left bruises and child was harmed. Three parents (4%) had three indicators: all indicators except beat child.

4.2 Demographic and contextual factors' descriptives

Table 1 contains demographic and contextual factors' descriptives for the physical discipline and physical maltreatment samples. There were some important differences between the two samples. There were more boys maltreated (63.2%) than physically disciplined (57.2%). More separated/divorced parents maltreated (31%) than physically disciplined (22%). More maltreating parents had 12+ years of education (76.4%) than those who physically disciplined (64%). High family stress scores of 14.61+ were reported more by maltreating parents (47%) than physically disciplining parents (18%). Lastly, parents in the physical discipline sample had a mean income of \$21.71K ($SD = 12.46$) and a median income of \$19K. In contrast, maltreating parents had a mean income of \$26.04K ($SD = 12.18$) and a median income of \$27K.

4.2.1 Factor relations within physical discipline group.—For marital status, because the Widowed category was extremely small ($n = 4$), we only examined three marital statuses – Married, Never-Married, Separated/Divorced in all of the analyses. A dummy variable was created for each status. *Income* was significantly related to *Never-Married* status, $p < .001$; 24% of never-married parents had an income of \$16.5K and around 21% had an income of \$22K. Income was also significantly related to *Married* status, $p < .001$; only 35% of married parents had an income of \$22K or less. *Parental education* and *income* were significantly related, $p < .001$. All parents earning \$28K had 12 years of education, whereas all parents earning \$6K had between seven to nine years. In addition, 90% of those who earned \$40K had 13–15 years.

Parental education and *marital status* were significantly related; 44% of never-married parents had 12 years of education, $p < .001$. Around 63% of married parents ($p < .001$) and 62% of separated/divorced parents had 12+ years of education, $p = .04$. *Separated/divorced* status was significantly related to *family stress*, $p = .04$. Of separated/divorced parents, 20%

had an average stress score of 7.01–10, and 18% ($n = 9$) had a score of 14.61–19, indicating high stress.

4.2.2 Factor relations within physical maltreatment group.—*Child gender* and *family stress* were significantly related, $p = 0.02$. Seventy-one percent of parents with stress scores of 14.61 to 19, and 87% of those with scores of 19.01+ had a boy. *Income* and *parental education* were related, $p < 0.001$. All parents earning \$27K and those earning \$37K had 12 years of education. Lastly, *Never-married* and *Married* statuses, and *parental education* were significantly related: 45% of never-married parents had 12 years of education, $p < 0.001$, and 53% of married parents had 13–15 years of education, $p = 0.04$.

4.3 Physical discipline latent class analyses

Table 3 contains criteria and fit indices for the different latent class solutions that we considered. We chose a 3-class model (Figure 1). The largest class, “Weekly Overall Physical Discipline, Spanking and Spanking with Something” (*Weekly*) ($n = 102$) contained parents whose frequency of overall physical discipline, spanking and spanking with something was weekly; they did not hit or hit with something. The second largest class, “Less than Monthly Overall Physical Discipline and Spanking” (*Infrequent*) ($n = 89$) contained parents whose frequency of overall physical discipline and spanking was $< 1x/month$; they only used one discipline type. Lastly, the smallest class, “Almost Every Day Overall Physical Discipline, Spanking, and Spanking with Something” (*Daily*) ($n = 51$) had parents whose frequency of overall physical discipline, spanking and spanking with something was almost daily; they did not hit or hit with something.

4.4 Physical discipline relations

Table 4 contains demographic and contextual factors means and standard deviations, overall chi-square and pairwise chi-squares for the physical discipline classes. *Child gender* was significantly related to class membership, $\chi^2(2, N = 242) = 7.18, p = .03$. Significantly more girls were disciplined less than monthly (Infrequent) than those being disciplined almost every day (Daily) (Table 4). In other words, boys were more likely to be disciplined almost daily.

The *Never-Married* status was significantly related to class membership, $\chi^2(2, N = 242) = 14.26, p = .001$. Significantly fewer never-married parents were in the Infrequent class than the Weekly and Daily classes (Table 4). Discipline was significantly related to *income*, $\chi^2(2, N = 242) = 18.97, p < .001$. Parents who physically disciplined almost daily had significantly less income than in the Infrequent and Weekly classes. Class membership was significantly related to *parental education*, $\chi^2(2, N = 242) = 10.43, p = .01$. Significantly more parents with education beyond high school were in the Infrequent class than in the Daily class.

Perception of neighborhood safety was significantly related to class membership, $\chi^2(2, N = 242) = 7.63, p = .02$. Parents in the Infrequent class perceived neighborhoods as safer than those in the Daily class, $\chi^2(2, N = 242) = 7.57, p = .006$. Family stress was not significantly related.

4.5 Physical maltreatment relations

Table 5 contains the coefficients, odds ratios and confidence intervals for demographic and contextual factors for maltreatment. Relations with *income* and *family stress* were significant. As income increased, the odds of physical maltreatment increased by 2.8 (Table 5). In other words, the higher the parents' income, the more likely parents were to maltreat their children. As family stress increased, the odds of physical maltreatment increased by 4.15. The more stress families experienced, the more likely maltreatment was. Child gender, marital status, parental education, and perceived neighborhood safety were not significantly related.

5. Discussion

Physical discipline is considered a risk for physical maltreatment (Gershoff & Grogan-Kaylor, 2016), and discipline and maltreatment are considered to have similar demographic and contextual factor relations. Yet, few studies have examined whether these factors have different relations among a sample of Black parents who physically disciplined or physically maltreated. Even fewer studies have considered the impact of interrelations among demographic and contextual factors on parenting behaviors. This study's findings provide a more complex understanding of the factors linked to early childhood discipline and maltreatment and in doing so, significantly contributes to the field. Subgroups of parents characterized by discipline frequency and type were identified, demonstrating heterogeneity in physical discipline among Black parents. Most importantly, demographic and contextual factors' relations with discipline differed from relations with maltreatment.

The three physical discipline classes identified varied in the frequency with which parents engaged in discipline – less than monthly (Infrequent), weekly, and almost every day (Daily). They also varied in physical discipline type; some parents used something to spank, whereas others did not. Prior research has found variation in physical disciplinary practices among Black parents (e.g., McLoyd et al., 2007; Anonymous et al., 2000). Even though variation has been found in prior studies, the dominant research narrative has been that Black parents frequently physically discipline young children, treating Black parents as a monolithic group. Researchers rarely consider or examine the heterogeneity in physical discipline practice among Black parents and especially in race-comparative studies, within-group heterogeneity tends to be obscured (McLoyd et al., 2007, p. 166). To reduce the number of Black parents using physical discipline, more research is needed to understand why some discipline infrequently and others almost daily.

Only one demographic and contextual factor was significantly related to both physical discipline and maltreatment – income. Parents who physically disciplined almost daily had significantly less income than those who disciplined infrequently. Consistent with this finding, McLoyd (1990) noted that low-income parents' experiences influenced their likelihood of physically disciplining. However, our finding also demonstrates that where Black parents fall on the low-income continuum matters in terms of discipline frequency. Within this low-income sample, Black parents with less income physically disciplined their young children more frequently than those with more income. Similar to our study, Berlin et al. (2009) found that among low-income African American parents of toddlers, lower

income predicted more frequent spanking. Examining how different levels of income within low-income status influence physical discipline may improve our understanding of this parenting practice.

In contrast, we found that higher income was associated with physical maltreatment. This relation has not been consistently identified in studies of high-risk populations which are primarily low-income. Some studies have found no associations between income and maltreatment, whereas others found an inverse relation between income and maltreatment, similar to our study (see review in Cancian, Yang, & Slack, 2013). Few studies consider the range in income among a low-income population. However, where families fall on that spectrum may matter. Regarding this finding, it is possible that at higher levels of low-income status, Black parents' ineligibility for state and federal assistance may increase financial struggles, which in turn, increases maltreatment risk. Cancian, Yang & Slack (2013) found that receiving federal assistance reduced maltreatment risk among low-income families who were predominantly Black. Therefore, it may be possible that families who are not eligible for assistance and have financial difficulty may be at risk for maltreatment. More nuanced investigations of income and maltreatment are needed to explore this possibility and provide context for our finding.

The other demographic and contextual factors were not related with both discipline and maltreatment. Consistent with prior studies (e.g., Deater-Deckard et al., 1996), boys were more likely to be physically disciplined frequently than girls. For marital status, there were significantly more never-married parents in the Weekly and Daily discipline group than in the Infrequent group. Deater-Deckard et al. (1996) had a similar finding: African American children who received frequent physical discipline were more likely to live with single mothers.

Parental education was significantly related with physical discipline. More parents who disciplined infrequently had education beyond high school than those who disciplined almost daily. Education is often discussed in tandem with income because education is linked to access to income (Berger, 2005). In this study, perhaps income was a confounding variable in the relation between parental education and physical discipline.

Lastly, parents who spanked almost daily perceived their neighborhood to be more unsafe. Prior research found relations between community violence and physical discipline (e.g., Molnar, Buka, Brennan, Holton, & Earls, 2003). There is limited research on relations with perceived neighborhood safety among Black families with young children (McDonell, 2007). People may believe that neighborhood violence has less influence on young children because they are often supervised (McDonell, 2007). However, young children are exposed to neighborhood influences commuting to school, within their school, and while interacting with peers and other adults in community spaces such as in playgrounds or stores (McDonell, 2007). Therefore, young children not only witness violence such as homicides, but also are victims of violence (see review in Randolph, Koblinsky, & Roberts, 1996). Black parents may have difficulty protecting young children in neighborhoods characterized by high levels of community violence (García Coll et al., 1996). Thus, they may physically discipline to ensure compliance in unsafe circumstances (Thomas & Dettlaff, 2011).

Notably, family stress was not significantly related to physical discipline. Most prior research indicates that stress is often the mechanism linking income and physical discipline (e.g., Anonymous et al., 2000). However, income was not related to family stress in this study. It may be that Black parents used physical discipline with intentionality instead of as a stress reaction. Some researchers have posited that Black parents use physical discipline to protect their children in a racist society (e.g., Thomas & Dettlaff, 2011). For example, young Black children's misbehavior may be perceived as aggressive and can result in harsh consequences such as suspensions and expulsions (Gilliam, Maupin, Reyes, Accavitti, & Shic, 2016). Even though physical discipline is not considered effective and can result in negative child outcomes, for Black parents, physical discipline may function as an adaptive parenting strategy. Another possible explanation is that because our family stress variable did not capture stress at the individual level or include stress related to trauma and racial discrimination, our study did not fully capture the stress that may be related to physical discipline.

Stress was the factor that was only related to physical maltreatment. As hypothesized and consistent with prior research (e.g., McPherson et al., 2009; Whipple & Webster-Stratton, 1991), the more stress Black families experienced, the more likely maltreatment would occur. Using neighborhood etiology framework (Coulton et al., 2007), we also hypothesized that negative perceptions of the neighborhood may contribute to stress and thus, increase maltreatment risk. However, there was no relation between family stress and perceived neighborhood safety.

Single parenthood was not linked to maltreatment, which is inconsistent with a majority of prior literature. As stated earlier, the combination of certain characteristics such as not completing high school and single parenthood contribute to maltreatment risk (Oliver et al., 2006). However, in this study, more than 75% of the Black parents who maltreated had 12+ years of education and their income significantly surpassed the income of parents who physically disciplined. Perhaps these single Black parents did not have the combination of characteristics that would contribute to physical maltreatment.

Our findings have several implications. First, in low-income Black communities where physical discipline and maltreatment are present, practitioners and child welfare professionals should be aware that the demographic and contextual factors related to physical discipline might not contribute to physical maltreatment risk. Furthermore, the discipline frequency and type may be related to different contextual factors. This study's findings can inform assessments of parenting and maltreatment risk. With more nuanced tools, practitioners can more effectively identify parents at-risk for physical maltreatment. When suggesting alternative disciplinary strategies, parenting educators and interventionists should consider the additional parenting challenges facing Black parents in low-income communities such as the impact of racism and discrimination on children's outcomes and living in dangerous contexts. Professionals should consider whether alternative strategies can effectively address these challenges as they engage parents in discussion about discipline. Lastly, these findings provide further support for community-based maltreatment prevention initiatives, notably ones addressing community violence and neighborhood safety.

Limitations of this study should be considered. Assessment of physical discipline and maltreatment during early childhood could have been more specific. Parents reported on the time period before prekindergarten, which incorporated ages birth to five. A child's age may influence which demographic and contextual factors are related to discipline and maltreatment. Thus, this study could only consider early childhood physical discipline and maltreatment broadly. It was also difficult to determine if the parents or other family members were the perpetrators. Parents' self-report of physical discipline and maltreatment may differ from what occurred. Literature on discipline indicates relations between Black parents' religiosity and physical discipline (e.g., M.A. Straus & Donnelly, 2009; Thomas & Dettlaff, 2011). Because we did not have data on religion, we were unable to investigate the relation between religion and discipline or maltreatment. This study's sample was from high-risk communities with over 60% of youth identified as high risk for conduct disorder. Furthermore, we examined interrelations and relations with demographic and contextual factors within a medium-sized sample. It is important to determine if similar physical discipline latent classes as well as similar demographic and contextual factor relations can be identified among larger and more diverse Black populations.

6. Conclusion

Despite being perceived as a monolithic group favoring frequent physical discipline, there is heterogeneity in physical discipline frequency and type among Black parents. Moreover, among Black parents, the demographic and contextual factors related to physical discipline may differ from the factors associated with maltreatment risk. This study's findings suggest a more complex and nuanced picture of physical discipline as a parenting behavior among Black parents. Researchers seeking to advance understanding of physical discipline among Black parents are encouraged to capture parents' perspectives on culturally related and contextual parenting challenges, and the goals and effectiveness of physical discipline and other disciplinary strategies. Furthermore, researchers should conduct further investigations of physical discipline and maltreatment risk which consider the heterogeneity of low-SES status and the interrelations between demographic and contextual factors among Black parents. Such investigations have the potential of not only informing the assessment and identification of Black parents at-risk for maltreatment, but also will improve researchers', practitioners' and parents' abilities to distinguish between physical discipline and physical maltreatment.

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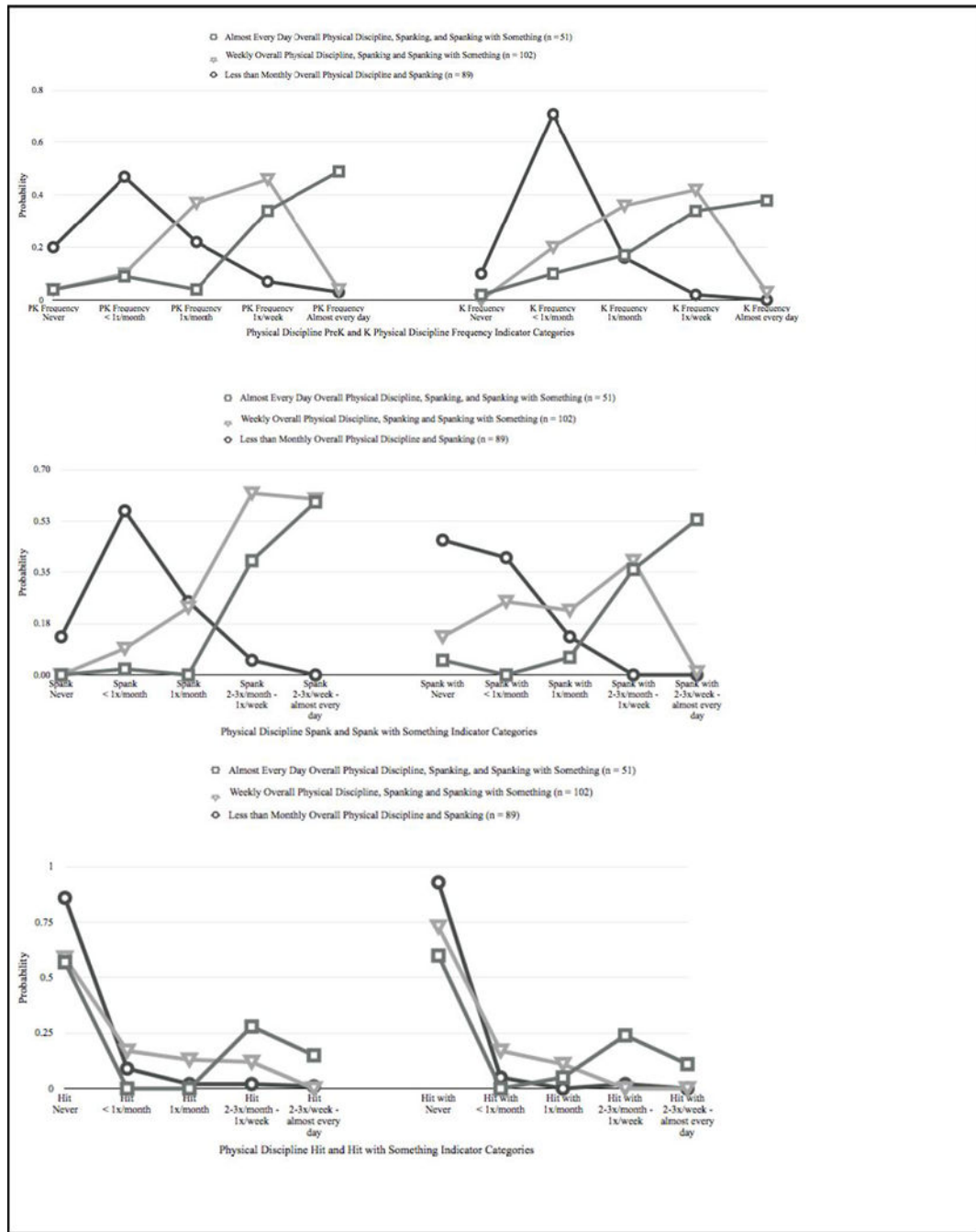


Figure 1. Posterior probabilities for the physical discipline latent classes

Table 1

Demographic characteristics of the African American sample from The Fast Track Project

Sample Characteristics	Total Sample (n = 310)	Physical Discipline Only (n = 242)	Physical Maltreatment Only (n = 68)
Children	%	%	%
Male	58.7	57.4	63.2
Geographic locations			
Durham	53.5	54.5	50
Nashville	30.3	29.8	32.4
Seattle	16.1	15.7	17.6
Parents	%	%	%
Female	97	98	97
Marital Status			
Never-Married	52.8	55	45.6
Separated/Divorced	23.7	21.6	30.9
Married	21.1	22.1	22.1
Widowed	1.3	1.3	1.5
Parental Education			
1–6 years	0.3	0	1.5
7–9 years	9.0	9.1	8.8
10–11 years	23.9	26.9	13.2
12 years	42.3	40.9	47.1
13–15 years	19.4	18.2	23.5
16–17 years	M.2	4.5	2.9
18+ years	1.0	0.4	2.9
Family Stress			
0 – 3	13.3	16.6	1.5
3.01 – 5	12.6	13.7	8.8
5.01 – 7	12.0	13.3	7.4
7.01 – 10	15.5	16.2	13.2
10.1 – 12	11.0	11.6	8.8
12.01 – 14.6	11.3	10.8	13.2
14.61 – 1.9	13.9	10.8	25.0
19.01+	10.4	7.1	22.1
Mean (SD)			
Age	30.67 (7.03)	30.70 (7.03)	30.59 (7.09)
# of children in family	3.16 (1.53)	3.24 (1.53)	3.01 (1.57)
Income	22.66 (12.51)	21.71 (12.46)	26.04 (12.18)
Perception of Neighborhood Safety	27.69 (13.22)	28.15 (12.96)	26.06 (14.07)

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Table 2

Physical Discipline Indicator Descriptives

Physical Discipline Indicators		%
PK overall physical discipline	Never	10.0
< 1x/month		23.3
1x/ month		24.2
1x/week		28.7
Almost every day		13.8
K overall physical discipline	Never	4.2
< 1x/month		36.7
1x/ month		24.2
1x/week		25.4
1x/almost every day		9.6
Spanked child (PK and K)	Never	5.0
< 1x/month		24.8
1x/month		18.6
2–3x/month-1x/week		36.0
2–3x/week-almost every day		15.7
Hit or tried to hit child (PK and K)	Never	68.6
<1x/month		9.9
1x/month		6.2
2–3x/month-1x/week		11.6
2–3x/week-almost every day		3.7
Spanked child with something (PK and K)	Never	23.6
<1x/month		24.8
1x/month		14.9
2–3x/month-1x/week		24.0
2–3x/week-almost every day		12.4
Hit or tried to hit child with something (PK and K)	Never	77.3
<1x/month		8.7
1x/month		5.4
2–3x/month-1x/week		6.2
2–3x/week-almost every day		2.5

PK = prekindergarten; K = kindergarten

N = 242

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Table 3

Model fit indices for two, three and four class latent class solutions for the physical discipline indicators

	Two Classes	Three Classes	Four Classes	Five Classes	Six Classes*
AIC	4595.366	4505.957	4446.115	4419.099	4395.92
BIC	4778.458	4782.463	4816.036	4882.434	4952.67
SaBIC	4623.048	4547.763	4502.045	4489.153	4480.098
Entropy	0.86	0.81	0.88	0.87	0.90
APP	0.95; 0.95	0.94; 0.89; 0.94	0.92; 0.97; 0.96; 0.91	0.92; 0.95; 0.94; 0.86; 0.95	0.96; 0.88; 0.98; 0.93; 0.96; 0.88
p-values**					
LRT	0.00	0.71	0.85	0.81	0.76
VLMR-LRT	0.00	0.72	0.85	0.81	0.76

* The best log likelihood 7-class solution could not be estimated

** BLRT did not converge

Note. AIC = Akaike Information Criterion; APP = Average posterior probabilities; BIC = Bayesian Information Criterion, SaBIC = sample-size adjusted Bayesian Information Criterion; Adj. LMR = adjusted Lo-Mendell-Rubin test; and VLMR-LRT = Vuong-Lo-Mednall-Rubin likelihood ratio test.

Total sample size was 242.

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Table 4

Demographic and contextual means and standard deviations, overall chi-square, and pairwise chi-squares for the discipline latent classes

Demographic and Contextual Factors	Means (Standard Deviations)			Overall Chi-square	Pairwise Chi-square	
	Class 1 Infrequent (n = 89)	Class 2 Weekly (n = 102)	Class 3 Daily (n = 51)		1 vs. 2	1 vs. 3
Child Gender	0.54 (0.06)	0.39 (0.05)	0.31 (0.06)	7.18*	1 vs. 2 7.18	1 vs. 3 6.66**
					2 vs. 3 0.71	
Married (dummy variable)	0.30 (0.05)	0.20 (0.05)	0.14 (0.05)	5.02	1 vs. 2 2.05	1 vs. 3 4.94*
					2 vs. 3 0.63	
Never-Married (dummy variable)	0.40 (0.06)	0.59 (0.06)	0.72 (0.07)	14.26***	1 vs. 2 4.84*	1 vs. 3 13.94***
					2 vs. 3 2.29	
Separated/Divorced (dummy variable)	0.26 (0.05)	0.20 (0.04)	0.26 (0.05)	3.29	1 vs. 2 0.93	1 vs. 3 3.33
					2 vs. 3 0.74	
Income	24.45 (1.44)	22.12 (1.44)	16.49 (1.28)	18.97***	1 vs. 2 1.17	1 vs. 3 17.27***
					2 vs. 3 0.93	
Parental Education	4.04 (0.11)	3.83 (0.12)	3.52 (0.12)	10.43**	1 vs. 2 1.49	1 vs. 3 10.32***
					2 vs. 3 3.14	
Family Stress	3.84 (0.25)	4.10 (0.24)	4.24 (0.31)	1.08	1 vs. 2 0.49	1 vs. 3 0.99
					2 vs. 3 0.12	
Neighborhood Safety	30.41 (1.44)	28.46 (1.42)	23.89 (1.90)	7.63*	1 vs. 2 0.83	1 vs. 3 7.57**
					2 vs. 3 3.46	

* p<.05

** p<.01

*** p<.001

N=242; df=2

Note: There were not enough parents in the Windowed category to conduct analysis.

Table 5

Binary logarithmic regressions with physical maltreatment and demographic and contextual factors

Demographic and Contextual Factors	B	SE B	OR	95% CI OR
Child Gender	1.17	0.17	0.79	[0.46, 1.31]
Married (dummy variable)	1.22	0.16	2.72	[4.57, 5.62]
Never-Married (dummy variable)	1.03	0.19	0.69	[0.36, 1.17]
Income	1.75	0.23	1.03**	[1.01, 1.05]
Parental Education	1.99	0.58	1.20	[0.90, 1.57]
Family Stress	2.99	0.42	1.42***	[1.27, 1.66]
Neighborhood Safety	0.96	0.33	0.99	[0.97, 1.01]

* p < .05

** p < .01

*** p < .001

N = 68

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