

Summer 8-7-2020

Families in Poverty: Additive and Qualitative Influence of Risk on Parenting

Lauren Aaron
University of New Orleans, laaron2@uno.edu

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Families in Poverty: Additive and Qualitative Influence of Risk on Parenting

A Thesis

Submitted to the Graduate Faculty of the
University of New Orleans
in partial fulfillment of the
requirements for the degree of

Master of Science
in
Psychology
Applied Psychology

by

Lauren Aaron

B.A. North Carolina State University, 2006
M.A. The College of William & Mary, 2010

August, 2020

Table of Contents

List of Figures and Tables.....	iii
Abstract.....	iv
Chapter 1: Introduction.....	1
Chapter 2: Method.....	15
Data Analysis.....	19
Chapter 3: Results.....	23
Chapter 4: Discussion.....	40
References.....	48
Vita.....	58

List of Figures and Tables

Table 1.....	24
Table 2.....	25
Table 3.....	27
Table 4.....	28
Table 5.....	30
Table 6.....	31
Table 7.....	33
Table 8.....	34
Table 9.....	36
Table 10.....	39
Figure 1.....	38

Abstract

Co-occurrence of risk for impoverished families is common, but less is known about how compounded risk influences parenting behavior. Mothers ($n = 167$) and their two-year-old children were visited at home and engaged in a game aimed to elicit everyday parenting behavior. Mothers endorsed experience of sociodemographic and psychosocial risks. Two unique cumulative risk indices were created from these variables. Regression analyses assessed the relation between the risk indices and positive and negative parenting behavior. Latent class analysis examines classes of risk experience on the same indicators. Results show psychosocial risk experience is associated with both parenting factors, while sociodemographic risk experience was only associated with negative parenting. Similarly, latent class analysis suggested a four-class model, in which positive parenting differed between classes marked by sociodemographic, but not psychosocial, risk. Such comparisons show that all risk is not the same, and suggestions for intervention efforts and future studies are given.

keywords: *parenting; poverty; risk; latent class analysis*

Chapter 1

Families in Poverty: Additive and Qualitative Influence of Risk on Parenting

One in 5 American children lives in poverty (Anderson Moore, Redd, Burkhauser, Mbwana, & Collins, 2009). Growing up poor affects all domains of development, including academic achievement (Ackerman, Brown, & Izard, 2004), educational opportunities (Walpole, 2003), and risk of delinquent behavior (Evans, 2016). Additionally, children living in poverty experience other sociodemographic risk factors at a disproportionate rate, such as being more likely to live in a single-parent home (Anderson Moore et al., 2009), have young, uneducated, unmarried parents (Hurwich-Reiss et al., 2019; Tabet, Flick, Cook, Xian, & Chang, 2016), and live in crowded homes marked by low availability of resources (Alaimo, Briefel, Frongillo, & Olson, 1998; Hurwich-Reiss et al., 2019). Their parents report more psychiatric symptoms (Seifer et al., 1996), financial strain (Mistry, Vandewater, Huston, & McLoyd, 2002), and overall stress (Steele, et al., 2016). Growing up poor handicaps children's optimal development, placing them at greater risk for maladjustment (Beck & Shaw, 2005) and reducing their academic and earning opportunities (Brooks-Gunn & Duncan, 1997; Corcoron & Chaudry, 1997).

Knowing the far-reaching influence of poverty on children's development, it is vital to focus on family-level experiences. Parents may be the single most important factor in the preschool-aged child's environment. Parent-child interactions have been extensively studied as a measure of normative, day-to-day parenting behavior for that dyad, and marked differences appear when considering family income (Gershoff, Aber, & Lennon, 2007). Children raised in poverty experience more sub-optimal parenting than affluent peers, which is thought to lead towards a trajectory of maladjustment in childhood and adolescence (Conger, Conger, & Martin, 2010). To date, however, little research has investigated how parenting is altered by

constellations of risk influencing families in poverty. Thus, there is a great need to understand how poverty and its related risks influence parenting during early childhood.

Parenting in Poverty

Children develop within complex, nested environments. Living in a low-income neighborhood with high crime rates, crowded schools, or few occupational opportunities does not impact preschool-aged children directly. Rather, young children typically experience the effects of poverty secondhand, particularly through their caregivers. Parents determine much of the young child's immediate, day-to-day environment, either directly (through their interactions with the child) or indirectly (through child care choices, level and type of cognitive stimulation in the home, or nutritional choices, for example; Sameroff, 2009). In a way, parents act as a filter through which the larger world influences children's lives. This filter may become compromised by the stress faced by parenting in poverty. Parents heading these low-income families report more financial strain, financial worries, and depressive symptoms than other parents (Mistry et al., 2002), and these factors are implicated as pathways through which poverty-related risk influences children's experience via parenting (Conger et al., 2010).

In a low-risk setting, parents are typically able to act as a shield or buffer between the stressors of the environment and their developing young children. But what of families living in poverty? Do the stressors and strains of raising children in poverty "spill over" into less optimal parent-child interactions? The family stress model (Conger, Ge, Elder, Lorenz, & Simon, 1994) suggests that disrupted parenting may explain how young children experience the hardships of poverty on the family. The nature of parenting in poverty may be that stressed, overwhelmed parents are transmitting the strains of poverty and risk through interactions with their children. The effects of factors that are more prevalent in low-income families (e.g., low parental

education, large family size) may become compounded in the face of poverty, and may be transmitted to children via the quality of their daily interactions with parents. The influence of poverty-related risk on the quality of parenting is likely heterogeneous, however, in that some parents may exhibit lower levels of warm, supportive parenting, while others may use more harsh, intrusive parenting behaviors (Holochwost, Gariépy, Mills-Koonce, Propper, Kolacz, & Granger, 2017; Linver, Brooks-Gunn, & Kohen, 2002).

Positive Parenting in Poverty

Parent-child interactions that are marked by sensitive, warm, and responsive parenting are crucial during the first few years of childhood, as children who experience such parenting score higher on pre-school measures of language and cognitive skills (Rafferty, Griffin, & Lodise, 2011), and exhibit more optimal executive functioning skills at age 4 (Lucassen et al., 2015). Such sensitive, responsive parenting requires emotional and mental energy, which may be less available for parents strained by financial, work, and economic stressors due to low income. Parents living in poverty engage in fewer positive interactions with their children (Towe-Goodman, Willoughby, Blair, Gustafsson, Mills-Koonce, & Cox, 2014), which is even more alarming as studies show just how protective a buffer warm parenting can be for children in poverty (Kiernan & Mensah, 2011).

Beyond low income, other sociodemographic risk factors also predict patterns of positive parenting. Mothers who gave birth at a young age, completed less education, and scored lower on tests of verbal ability are less likely to engage in authoritative parenting (warm and engaged parenting; Linver et al., 2002). Familial exposure to multiple risks in infancy is associated with less concurrent sensitive parenting, predicts less sensitive parenting in the future (Holochwost et al., 2017), and predicts lower quality caregiving environments in infancy (Lanza, Rhoades,

Greenberg, Cox, & The Family Life Project Key Investigators, 2011). Families endorsing high levels of sociodemographic risk also showed a marked decrease in sensitive parenting over time (Finegood, Blair, Granger, Hibel, & Mills-Koonce, 2016), suggesting that these parents start with fewer positive interactions, and those few diminish even further through childhood. Other studies, however, show mixed findings between sociodemographic risk and positive parenting. Mistry and colleagues (2002) found that financial strain predicted less observed warmth, yet this marker of sensitive parenting was not associated with other risks, including low income and food insufficiency. Rafferty and colleagues found differences between teenage mothers and adult mothers in some aspects of positive parenting (supportiveness, responsivity), but not others (cognitive stimulation in play; Rafferty et al., 2011). It may be that a reduction in positive parenting occurs only in certain combinations of sociodemographic risk factors, rather than solely as a result of the accumulation of risk factors.

Negative Parenting in Poverty

Not only do parents in poverty engage in less sensitive parenting, evidence suggests these same parents' interactions with their children are characterized by greater levels of harsh, punitive, intrusive parenting. Parents in poverty use more authoritarian parenting (characterized by high levels of punitive behaviors, high demands by parent, and low responsiveness; Linver et al., 2002). Furthermore, previous research suggests that the use of harsh, physical discipline (i.e., corporal punishment) mediates the relation between familial poverty and children's problem behaviors (Eamon & Zuehl, 2001). Worldwide, results from 110 countries found that children's development (as quantified by an overall "development" score) was influenced by family poverty, but that this effect was mediated by physical punishment (Tran, Luchters, & Fisher, 2016).

Further, poverty-related risk factors, such as having a teen mother, a mother with low educational attainment, or a mother with poor reading ability, are similarly associated with sub-optimal parenting (Linver et al., 2002). Younger mothers are more likely to engage in harsh parenting (Kim, Pears, Fisher, Connelly, & Landsverk, 2010), and socioeconomic status (SES), composed of income, education, and occupation, predicts use of physical punishment. The importance of these additive risk factors is seen in studies showing that as the number of endorsed risk factors increase, so do intrusive, negative parenting behaviors (Holochwost et al., 2017). Further, maternal psychosocial distress, particularly depressive symptoms, is one of the best predictors of negative parenting (Belsky & Jaffee, 2006).

As with positive parenting, harsh, intrusive parenting behaviors may be best understood in the context of how families qualitatively experience risk. It is essential to consider how different constellations of risk may predict different levels of both positive and negative parenting, given that these two parenting constructs are not the inverse of one another. Some intersections of risk may predict less positive and more negative parenting, while others may predict only less positive parenting. Interventions aimed at optimizing parenting in low-income families would be best informed by such qualitative differences (Lanza et al., 2011; Roy & Raver, 2004), as certain populations may be more at risk for a lack of sensitive parenting, while others may engage in both positive but also unwelcome negative parenting.

Poverty-related Risk and Children's Development

Income is a useful and straightforward indicator of financial hardship, and yet assessing income alone ignores variability in the experience of financial hardship that may be naturally occurring in families. Poverty co-occurs with several other socio-demographic risks, each of which may uniquely predict a portion of the variance in child and family outcomes (Evans, Li, &

Whipple, 2013). Families' experiences of poverty are diverse; poverty may be associated with residential crowding in one family, and heightened maternal risk factors (e.g., being a single or teen mom) in another family. Low income may influence mothers' parenting in both families, but different patterns of behavior may be associated with mothers in crowded families versus single, stressed parents.

As Evans and colleagues concisely stated in their review of approaches to multiple risk exposure, "...risk begets risk" (Evans et al., 2013, pg. 1384). Living below the poverty line may be a consequence of, an antecedent to, or correlated with other risk factors for family outcomes. Early work on childhood risk experience focused on the impact of multiple versus singular exposures to the same risk factor, finding that more experiences begets more maladjustment (Rutter, 1979). Families do not experience sociodemographic risk in isolation, and it is essential that research and analytic practices mirror the true experience of these experiences as closely as possible. Families living in poverty are also more likely to experience psychological risk factors, several of which may influence parenting, particularly when aiming to inform intervention.

Traditionally, research on cumulative risk experience has tallied up whatever available risk factors there are in a given study, and called it "risk." What they have failed to do is examine the possibility that different types of risk may beget different outcomes. While sociodemographic risk is expected to influence the family via psychosocial distress (i.e., the family stress model; Conger, et al., 1994), families may experience the effects of sociodemographic factors differently. It may be that psychosocial distress, regardless of income or related hardship factors, is what leads to parenting differences in poverty. Alternatively, it may be that economic hardship, with or without psychosocial stress, influences parenting. By collapsing different types

of risk together, past research may have missed an important distinction as to the process of risk experience in families.

Methods for Modeling Poverty-related Risk

Defining Poverty

The term “poverty” has been operationalized multiple ways in the literature. The necessary income to survive for a family is dependent, in part, on the size of the family (particularly the number of minor children being supported by the available income; McLoyd, 1998). Poverty researchers use income-to-needs ratios in order to compare income across families (Anderson Moore et al., 2009). A family’s total yearly income is divided by the federally mandated poverty line for a family of that size, which produces a ratio value. A ratio of 1.0 indicates a family earns exactly the amount the federal government has deemed necessary for that family to survive (and consequentially has no opportunity to save for emergencies, or to spend money beyond what is needed for survival). An income-to-needs ratio of 0.5 indicates the family earns half of what is necessary, a ratio of 2.0 indicates a family earns double what is necessary, etc.

The income-to-needs ratio is a valuable tool in determining the financial and hardship experience of a family, relative to federal guidelines. Poverty researchers have lauded the use of the income-to-needs ratio as an indicator of poverty in families because it accounts for the influence of family size on needed income (McLoyd, 1998). A family below the federal guidelines of income for their family size is eligible for government and private welfare programs, and thus the income-to-needs ratio of 1.0 has been used as an indicator of living above (>1.0 , ineligible for the majority of needs-based systems) or living below (<1.0 , eligible for most needs-based systems) the poverty line (Grieger, Danzinger, & Schoeni, 2009).

While families with minor children living below the poverty line are the minority in America, in some neighborhoods, poverty is the norm. Such is true in the greater New Orleans area, with poverty rates reaching nearly double the national average (Corporation for Enterprise Development, 2012). In the state of Louisiana, nearly one in three children live in poverty, including half of all African-American children (National KIDS COUNT, 2018). Agencies are only recently focusing attention on the experience of “deep poverty,” defined as families earning less than half the federally defined poverty lines (i.e., an income-to-needs ratio ≤ 0.5). These families may be at particular risk, as their families are much less likely to take advantage of programs aimed to lift them from poverty (Anderson Moore et al., 2009). Louisiana families in particular experience deep poverty at a rate of nearly 1.5 times the national average, and families residing in Orleans Parish experience deep poverty at twice the rate of other American families (USCCB, 2020). Roy and Raver (2004) suggested that deep poverty may represent an under-recognized risk for family process and child development, and their analysis of deep poverty’s influence on children’s school difficulties remains one of the few studies to qualitatively examine differing levels of poverty within a predominately low-income sample.

Variable-Centered Approaches to Risk

Literature on poverty-exposed families has focused primarily on the impact of individual risk factors, or used an additive approach to consider multiple risk experiences in aggregate (e.g., Appleyard, Egeland, van Dulmen, & Sroufe, 2005; Marcella, Howes, & Fuligni, 2014). In focusing on the presence or absence of risk factors such as poverty, researchers dichotomize this experience and compare outcomes of families with that risk exposure to families without. Doing so allows researchers to better understand how multiple risk factors co-occur—for example, what effect does low parental education have in the context of poverty versus not? Risk rarely occurs

in isolation, however, and describing the effect of a sole risk factor ignores the multi-risk environment in which many families live (Appleyard et al., 2005; Roy & Raver, 2004).

An oft-used alternative to singular risk experience research is to examine the accumulation of risk factors. Singular risk factors are dichotomized for the presence or absence of the risk, either naturally (e.g., living in a single-parent home is coded as presence of that risk) or through applying criterion to a continuous variable (e.g., the bottom quartile of maternal reading scores is coded as presence of low maternal reading ability; Lanza et al., 2011). These dichotomized variables are then summed to create a cumulative risk index, which generally ranges from 0 (indicating no risk factors) to a number indicating the maximum measured risk factors. The higher the cumulative risk index, the more total risk an individual or family experienced. In current studies of child development, family income is nearly always included in the cumulative risk index (CRI), as a marker of sociodemographic deprivation not fully tapped into by other risk factors. A summed measure of individual risks experienced, rather than single risk factors, may better operationalize the larger experience of financial and social hardship in families (although other, more nuanced approaches exist; see below).

The cumulative risk approach has been used extensively to predict many aspects of child and family development. Accumulation of risk is associated with differences in children's adjustment problems (Shen, Seo, Walt, & Kim, 2019), school functioning (Ashworth & Humphrey, 2019), maternal caregiving quality (Hatzis, Dawe, Harnett, & Loxton, 2019), and parental use of corporal punishment (MacKenzie, Nicklas, Brooks-Gunn, & Waldfogel, 2014). This approach has largely been preferred over prediction from singular sociodemographic risk factors, as it allows a better understanding of the overall level of risk factors in the family environment. The cumulative risk approach is considered superior to individual assessment of

risk factors, as research demonstrates that the constellation experience of multiple risk factors better predicts maladjustment in children than does singular risk factors (Lengua, 2002; Rutter, 1979; Sameroff, Seifer, Baldwin, & Baldwin, 1993).

One shortcoming of the cumulative risk approach that it considers all risk factors to be equally weighted in their influence on outcomes. For example, a child living in a family with a single, teenage mother who did not graduate high school may score a 3 on a cumulative risk index. A child who lives in a crowded home whose parents earn below the poverty line and are poor readers may also score a 3 on the same cumulative risk index. The additive model of risk assumes that these two children experience the same quantitative level of familial risk, and should have similar outcomes in comparison to children who experience more or fewer risks. Thus, the cumulative risk approach ignores the possibility that certain *combinations* of risk factors may differentially affect developmental outcomes. While a valuable research tool, cumulative risk indices cannot model the potential variability in families' experiences.

Moreover, cumulative risk indices vary in terms of the indicators of which they are made, and these indices may combine different types of risk experiences. For example, the classic Sameroff cumulative risk study (Sameroff et al., 1993) included sociodemographic risk factors (e.g., maternal education and family size) which were included as proxies of resource availability and access to opportunities. They also included factors which tapped into other sources of risk, such as maternal anxiety and mental health issues (Sameroff et al., 1993). These factors are thought to predict children's negative outcomes due altered parenting interactions. While such factors have been shown to influence parenting, the process by which this occurs may be markedly different from the process by which resource availability influences parenting. Further,

it may be that different combinations of sociodemographic and psychosocial distress factors elicit different parenting practices.

Person-Centered Approaches to Risk

Variable-centered approaches allow researchers to identify discrete portions of the variance in child and family outcomes that can be attributed to individual risk factors. Indeed, creating an additive measure of multiple risk factors has helped researchers better explore how co-occurrence of multiple risk factors has an exponential influence on these same outcomes. However, this approach lacks the ability to identify intersections of risk experience that commonly occur, and how these constellations of experience may uniquely predict outcomes, particularly in families plagued by high levels of risk. As variable-centered approaches describe the average experience based on one or more variables, they have been criticized for ignoring heterogeneity naturally occurring in populations (Lanza et al., 2011). In contrast, person-centered approaches qualitatively identify similarities between individuals, which can be used to create latent, or unmeasured, subgroups of experience within the dataset. This approach has been utilized to describe sample heterogeneity on a set of variables, rather than the variance of the variables themselves (Lanza & Cooper, 2016).

For studies examining families in poverty, person-centered approaches may be particularly useful to highlight which families are most ripe for certain interventions, based on their experienced combination of risk indicators. Parents who indicate high levels of psychosocial distress but not material need may engage with their children differently than parents experiencing material need *and* distress. By grouping participants into subgroups based on their endorsement of risk factors, researchers can better model the complexity of living in poverty. Further, by exploring the qualitative differences in poverty experience, we can better

understand how these unique experiences may predict parenting outcomes for families with young children, and may better tailor interventions for families in poverty.

The Proposed Study

The current study seeks to explore the interrelations between poverty-related risk factors and parenting behaviors in dyads consisting of preschool children and their mothers. By examining relations between risk factors and parenting measures, the current study will add to the literature on family processes in light of risk exposure. Further, by comparing traditional variable-centered approaches of risk experience to a person-centered approach, the current study will allow a better understanding of how parenting in preschool dyads is influenced by intersections of risk experience.

Hypotheses. The current study aims to expand knowledge of poverty and parenting by testing the following predictions:

1. Poverty-related risk factors will correlate positively with one another.
2. Individual poverty-related risk factors will associate with concurrent observed parenting behavior, in that:
 - a. Endorsement of any individual risk factor will be associated with fewer positive parenting behaviors; and
 - b. Endorsement of any individual risk factor will be associated with more negative parenting behaviors.
3. Parenting behavior will be associated with cumulative sociodemographic risk experience, in that:

- a. Accumulation of sociodemographic risk factors will be associated with positive parenting behavior, in that higher scores on a sociodemographic risk index will be associated with less positive parenting behavior; and
 - b. Accumulation of sociodemographic risk factors will be associated with negative parenting behavior, in that higher scores on a sociodemographic risk index will be associated with more negative parenting behavior.
4. Parenting behavior will be associated with cumulative psychosocial distress experience, in that:
 - a. Accumulation of psychosocial distress risk factors will be associated with positive parenting behavior, in that higher scores on a psychosocial distress risk index will be associated with less positive parenting behavior; and
 - b. Accumulation of psychosocial distress risk factors will be associated with negative parenting behavior, in that higher scores on a psychosocial distress risk index will be associated with more negative parenting behavior.
5. Sociodemographic and psychosocial distress risk indicators in the sample will cluster into unique patterns of risk. A low- or no-risk class is expected to emerge, in addition to at least one, if not several, risk-characterized latent classes, through the use of latent class analysis.
6. Parenting behavior will differ by most likely latent class. It is expected that risk classes which include poverty will be associated with less positive and more negative parenting than classes characterized by low risk or that do not include poverty. These hypotheses are exploratory, however, and it is less clear how the unique contributions of the other risk factors in class membership will associate with parenting. This exploratory

hypothesis will examine how positive and negative parenting behaviors may predict latent class membership.

Chapter 2

Method

Sample

The current study used data from the Mothers and Preschools study in the greater New Orleans area, conducted in the three years after Hurricane Katrina hit the Gulf Coast. Mothers ($n = 167$, mean age = 25.3 years, 91% African-American), their 2-year-old children (mean age = 24.2 months, 55% female), and their Head Start-enrolled children (mean age = 49.0 months, 57% female) were recruited from area Head Start centers. A total of 2,022 families completed screening questionnaires, and 314 were deemed eligible due to participate given they had one Head Start-enrolled child and one younger child about to turn two years old. From eligible, screened mothers, 33% could not be reached to schedule an interview, 11% declined to participate following the screener, and 2% were excluded due to limited English proficiency. Families completed three annual in-home visits, roughly corresponding to the younger (target) child's second, third, and fourth birthday. Data from the first wave was utilized in the current study, with the exception of one variable. Mothers' reading ability was collected at the second wave (around the children's third birthday), having not been collected at the first wave. I did not expect this variable to change over the span of one year, and thus was a suitable proxy for maternal intelligence level.

Procedure

Trained research assistants typically visited participating families in their homes (a few families preferred to be interviewed outside their home, meeting either at Head Start centers or a laboratory setting). Mothers completed demographic questionnaires and surveys with the help of a research assistant, and engaged in interaction tasks with their children which were videotaped

for later behavioral coding. Among other tasks, mothers engaged with their children in a matching game (see below). Study visits lasted approximately 2.5 hours. Mothers were compensated for their time with \$100 cash, and each child received a small toy worth approximately \$5 for their time.

Matching task. Mothers and target children were instructed to play a game with twelve pairs of cookie game pieces. The cookie pairs separated into two pieces, one of which had a raised shape which fit into the matching piece. Mothers and children were given one side of all the cookie pairs, and the matching sides were placed in a “cookie jar”. They were instructed to reach into the jar to pick a matching piece. Mother and child played against one another until one of them matched all their cookies, and then played again. This game continued in the dyad for three minutes, at which time the examiner brought the older sibling into the room and instructed the mother to help her two children play the game together, which continued for an additional three minutes (Riley, Scaramella, & McGoron, 2014). As the present study is interested in mothers’ behaviors when engaged solely with the target child, only behaviors from the first half of the task (the first three minutes) were considered (Barnett & Scaramella, 2017).

Measures

Sociodemographic risk factors. In line with the available literature, seven potential sociodemographic risk factors were collected from the mother. These risk factors consisted of (1) mother’s marital status (married/non-married), (2) mother’s relationship status (in a relationship/not in a relationship), (3) mother’s age at first childbirth, (4) mother’s educational attainment, (5) mother’s receptive verbal ability (as assessed by the PPVT-R; Dunn & Dunn, 1981), (6) family income-to-needs ratio, and (7) the number of children in the home.

For creation of a sociodemographic risk index (SRI), the sociodemographic risk factors were dichotomized and summed (following Sameroff et al., 1993). The seven sociodemographic risk factors were first dichotomized into the following variables, with a score of 0 indicating the absence of that risk and a score of 1 indicating the presence of that risk: *unmarried mother* (67.7% of current sample; $n = 113$), *unpartnered mother* (55.7%; $n = 93$), *teen mother* (mother reported being 19 years old or younger at the birth of their first child; 8.4%; $n = 14$), *no high school/GED* (mother reported never graduating high school or receiving her GED; 20.4%; $n = 34$), *poor maternal receptive vocabulary* (mother's score on the PPVT-R at or below 66; Dunn & Dunn, 1981; 21.0%; $n = 35$), and *crowded home* (four or more children in the home; 31.1%; $n = 52$). For the income variable, a discrete variable of three levels was created, so that 0 indicated the family living above the poverty line, 1 indicated income-to-needs ratio at or below 1.0 but above 0.5; 53.3%; $n = 89$), and 2 indicated *deep poverty* (income-to-needs ratio at or below 0.5; 24%, $n = 40$). The full sample mean on the SRI was 4.13 ($SD = 3.07$) with a possible range of 0-8, indicating that the mothers endorsed, on average, experiencing more than half of the risks measured.

Psychosocial distress risk factors. Mothers reported on their current levels of four potential factors which were deemed measures of psychosocial distress. These psychosocial distress risk factors are (1) financial strain, (2) depressive symptoms, (3) anxiety symptoms, and (4) neighborhood safety. Financial strain was a composite score of three items, with higher scores on each indicating more strain in the past year. Mothers were asked to report their relative standard of living as compared to the previous year, how hard it was to pay their bills, and how much money the family has left over after paying bills each month. These three scores were averaged to create a total financial strain score. Mothers completed the Beck Depressive Index

(BDI; Beck, Steer, & Brown, 1996) and the Beck Anxiety Index (BAI; Beck, Epstein, Brown, & Steer, 1988) to assess depressive and anxiety symptoms, respectively. Neighborhood safety was reported by mothers on the Me & My Neighborhood safety subscale (Pittsburgh Youth Study, 1991).

For creation of the psychosocial distress cumulative risk index (PDRI), the four psychosocial distress risk factors were dichotomized into the following four variables, with a score of 0 indicating the absence of a risk and a score of 1 indicating the presence of that risk: *high financial strain* (top quartile of sample; 30%; $n = 49$), *high depressive symptoms* (BDI score of or greater than 17; Smarr & Keefer, 2011; 16%; $n = 26$), *high anxiety symptoms* (BAI score of or greater than 19; Julien, 2011; 13%; $n = 22$), and *low neighborhood safety* (bottom quartile of sample; 35%; $n = 58$). The mean of the PDRI was 1.36 (SD = 0.75) with a possible range of 0-4. This suggests that the average mother endorsed one or more psychosocial risk factors.

Parenting behavior. Trained research assistants coded the videotaped matching game task for aspects of parental, child, and dyadic behaviors, based on scales developed in the Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD) Study of Early Child Care and Youth Development (SECCYD; NICHD Early Child Care Research Network, 1999). Of particular relevance for this study were parent-only behavior codes, which coded the presence of mothers' behaviors when interacting with her child on a 7-point scale in which higher scores indicated a greater demonstration of the target behavior. These six codes were: (1) maternal sensitivity (mother's behavior is child-centered and highly responsive), (2) positive regard toward the child (use of positive reinforcement, physical affection, warmth of tone), (3) cognitive stimulation (stimulating of the child's cognitive development in age-appropriate ways), (4) intrusive behaviors (mother's behavior is controlling and/or overly-

stimulating), (5) negative regard toward child (harsh, affectively negative behavior), and (6) detachment (mother appears uninvolved with or disengaged from child, or unaware of the child's needs), which was reverse-scored and renamed "engagement" for conceptual clarity.

Data Analysis

Variable-Centered Approach

The first step of the current analysis was to examine the additive nature of risk experience. First, I conducted bivariate correlations between poverty-related and maternal distress risk factors in order to assess inter-relations between these variables. In order to assess potential underlying latent parenting variables, factor analyses were conducted on observed parenting scores. These analyses and the existing literature were used in determining how to proceed with creating the broad parenting factor(s) used thereafter. Next, a series of bivariate correlations were conducted between poverty-related and maternal distress risk factors and observed measures of parenting behavior.

Information from correlation analyses informed the creation of two cumulative risk indices: a sociodemographic risk index (SRI) and a psychosocial distress risk index (PDRI). I assessed the bivariate associations between these risk indices and parenting factors to examine how additive measures of risk experience relate to parenting behavior. Given that both risk indices were expected to be associated with parenting, I then tested associations between observed parenting behavior and risk indices. This step utilized linear regression, in order to further understand how parenting behaviors may be associated with mothers' risk experience. Each risk index was entered as a covariate for the other as predictors: when regressing positive parenting onto the SRI, the PDRI was entered as a covariate, and vice versa. This allowed me to explore the value of each parenting behavior controlling for the influence of the other.

Person-Centered Approach

The second step in the plan of analysis was to complement the information on constellations of risk via latent class analysis (LCA). Latent class analysis is one person-centered approach that has been adopted by developmental researchers (Collins & Lanza, 2010). This method assigns individuals in an empirical dataset into their most likely subgroup based on their response rates to observed variables of interest. Individuals are grouped into an exploratory number of mutually exclusive and exhaustive latent classes, and models are tested for parsimony and model fit. LCA is especially useful for exploring exposure to multiple risk, as it allows identification of families experiencing particular combinations of risk factors, which may interact in ways cumulative risk indices fail to illuminate. Further, once I decided on the most parsimonious model, I compared if and how levels of positive and negative parenting differed across latent classes.

Estimating latent models. Latent class models were estimated using Mplus version 7.11 (Muthen & Muthen, 2012). A series of models were estimated, beginning with a one-class solution. Model selection was guided by the following criteria: information criteria (i.e., AIC [Akaike information criterion], BIC [Bayesian information criterion], and sample-size adjusted [ssa-] BIC), entropy, the bootstrapped likelihood ratio test (BLRT), and conceptual clarity.

Lower values of information criteria indicate better model fit. The AIC, BIC, and ssa-BIC are fit indicators that indicate a better balance of fit and parsimony when values are low. Higher entropy values, on the other hand, indicate greater classification accuracy, with values greater than 0.80 preferred for model selection (Berlin et al., 2014). The BLRT uses bootstrapped samples to estimate the distribution of the log-likelihood difference between k and $k-1$ classes, and provides a p -value which shows the value of adding the additional class. In addition to these

quantitative criteria, parsimony and interpretability of the selected model were emphasized (Collins & Lanza, 2010).

The above criteria were used to decide between a two-step and a three-step approach to latent class membership assignment. The two-step approach, often referred to as *classify-analyze*, is a common technique in assigning individuals to latent classes (Clogg, 1995). The two-step approach involves first classifying individuals into latent classes, based on their most likely class membership (i.e., each case is assigned to the latent class with which they have the highest conditional probability, relative to other latent classes). Then, a subsequent analysis is performed in which latent class membership is treated as an observed variable in a larger model of interest. When entropy is high (i.e., greater than 0.8, indicating better latent class separation), the two-step approach may be preferred due to its straightforward nature and ease of interpretation.

The two-step model may lead inappropriate classifications when entropy is not extraordinarily high, however. This is due to the introduction of error when individuals are assigned to latent classes as if these classes are observed variables. Latent variables are modeled with measurement error, whereas manifest or observed variables are assumed to be free of measurement error (even when this is unlikely). Most likely latent class membership is a valuable endogenous variable in the proposed final analyses, but it is not observed. Even with high entropy, unnecessary measurement error is introduced by treating latent class membership as known. For example, while individuals may have very high probabilities of belonging to their assigned latent classes (e.g. $p = .95$ or 95% certainty), even a small amount of uncertainty (in this example, .05 or 5% uncertainty) can influence the resultant regression model. The three-step approach, in contrast, allows for classification error to be estimated, and treated as a weight based on the strength of the posterior probabilities. For the current analyses, latent class

membership was used as the outcome variable, and thus the addition of measurement error would only obscure relations between latent class membership and parenting behavior. I therefore opted to utilize the three-step approach regardless of latent model fit or separation. Further, rather than continuing to parse a modestly-sized dataset into groups of individuals and then comparing outcomes, using the three-step approach allowed me to use the continuous posterior probabilities as the predictor variable in the regression analysis and thus retain the full sample size.

Latent classes as distal outcomes. Once a latent model was identified and selected, parenting factors, as determined by the planned factor analyses, were added into the model. By including parenting behaviors in the latent class analysis, I will be able to determine if and how parenting differs the likelihood of being placed in a certain latent class.

Finally, the relative utility of the cumulative risk indices and the latent classes was compared. The results of each regression model were compared, in order to assess the relative explanatory value of the two approaches (the quantitative, variable-based approach and the qualitative, person-centered approach) on parenting behavior in early childhood.

Chapter 3

Results

Factor Analyses

In order to assess the number and construction of parenting composites for the outcome variables, a series of exploratory factor analyses were conducted using geomin rotation. Based on theoretical background and use of these constructs in the existing literature, factor analyses extracting one- and two-factor solutions were conducted and compared. Model fit information can be seen in Table 1, and suggests that the one-factor model has poorer fit to the data ($p < .001$) than the two-factor model ($p = .15$). Notably, in a factor analysis comparison, the null hypothesis is that the data is not significantly different than expected by the model, and thus a p value of $> .05$ is preferred (Kline, 2016).

In examining the eigenvalues of the factor analysis (Table 2), it is noted that the first factor model has an eigenvalue of 3.339 and the second factor model an eigenvalue of 0.994. An eigenvalue of 1 is an oft-used minimum in deciding to retain extracted factors (Kaiser, 1960), as eigenvalues represent the amount of variation explained by a factor. There is significant theoretical relevance, however, of assessing two separate, oblique parenting constructs (i.e., positive and negative parenting behaviors). Given this, and the fact that the eigenvalue of the second factor is very close to 1, I decided to retain the two-factor model, representing positive parenting (Sensitivity, Positive Regard, Engagement, and Cognitive Stimulation) and negative parenting (Intrusion and Negative Regard). The scores for each factor were averaged, resulting in a Positive Parenting factor ($M=3.89$, $SD = 0.99$) and Negative Parenting factor ($M=3.30$, $SD = 1.25$) which were retained for correlational, regression, and distal outcome analyses.

Table 1

Model Fit Information Informing Factor Analyses

Model	P	χ^2	df	RMSEA	CFI	TLI	SRMR
1-factor	18	47.913***	9	0.163	0.896	0.827	0.065
2-factor	23	7.039	4	0.068	0.992	0.970	0.021
Models Compared		39.425***	5				

Note. P = free parameters. df = degrees of freedom. RMSEA = root mean square error of approximation. CFI = comparative fit index. TLI = Tucker-Lewis index. SRMR = square root mean residual. *** $p < .001$.

Table 2

Geomin Rotated Factor Loadings

Variable	<u>1-factor model</u>	<u>2-factor model</u>	
	1	1	2
Sensitivity	0.974*	0.720*	-0.320
Intrusive	-0.656*	0.003	0.899*
Engagement	0.684*	0.743*	0.000
Positive Regard	0.650*	0.775*	0.080
Negative Regard	-0.567*	-0.128	0.600*
Cognitive Stimulation	0.554*	0.570*	-0.023
Eigenvalues:		3.339	0.994

Note. * $p < .05$

Descriptive Analyses

In traditional cumulative risk work, continuous indicators variables are discretized (i.e., divided into two or more groups) to indicate “risk”. After discretization of continuous indicator variables for the creation of the risk indices, descriptive analyses were conducted to assess the relative prevalence of each risk indicator. Table 3 shows the prevalence of these 12 variables. Some were relatively common in the sample, such as being unmarried (68%) or using any form of public assistance (84%), while others were less common, such as being a poor reader (22%), and high depression (16%) or anxiety (13%) symptoms. Table 3 also lists the skewness and kurtosis values for each continuous variable (absolute values above 1 indicate a skewed distribution). As expected, several of my variables of interest were skewed, including mother’s age at first childbirth, the number of children living in the home, and depression and anxiety symptoms. These skewness values are necessary in determining how to use these variables as indicators in later latent class analyses, as assumptions concerning univariate normality must be met.

Bivariate Analyses

In order to assess the degree and direction of relations between the variables of interest, a series of bivariate correlations was conducted (see Table 4). Of particular note is that the SRI and PDRI are largely uncorrelated with one another ($r = .06$, *ns*). Additionally, both risk indices were uncorrelated with the scores from which the other was created (with the exception of the neighborhood safety variable, which was roughly equally associated with both indices). In other words, the SRI is created from sociodemographic variables and does not correlate with psychological distress variables, and vice versa for the PDRI.

Table 3

Descriptive Statistics of Original and Discretized Indicator Variables

Variable	% of sample	<i>n</i>	Mean (<i>SD</i>)	Skewness	Kurtosis
Mom single	56	166			
Mom unmarried	68	166			
Mom age first birth		167	20.32(3.25)	1.26(.19)	3.02(.37)
Mom was teen mom	51	167			
No HS dipl/GED	26	125			
Maternal reading ability		146	79.98(11.48)	-0.74(.20)	2.08(.40)
Mom poor reader	22	146			
Number children in home		166	3.19(1.46)	1.58(.19)	3.05(.38)
Crowded home	31	167			
Number on public assistance		161	1.21(.75)	0.27(.19)	-0.14(.38)
Any public assistance	84	161			
Income to needs ratio		161	0.99(.65)	0.87(.19)	0.64(.38)
Low income†		161			
Poverty	20	161			
Deep poverty	25	161			
Financial strain		165	3.31(.95)	0.03(.19)	0.68(.38)
High financial strain	30	165			
Depressive symptoms		163	0.47(8.41)	1.38(.19)	1.67(.38)
High depressive symptoms	16	163			
Anxiety symptoms		166	7.48(9.21)	1.70(.19)	2.56(.38)
High anxiety symptoms	13	166			
Neighborhood safety		166	2.88(.71)	-0.21(.19)	-0.39(.38)
Low neighborhood safety	35	166			

Note. † Percentages for each category of “poverty” are mutually exclusive.

Table 4
Relations Between Study Variables

Variable	M / %	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
<i>Sociodemographic factors</i>																
1. Mom single	56%	-														
2. Mom unmarried	68%	.78	-													
3. Mom at age first birth	20.32	-.20	-.27	-												
4. Mom no HSD/GED	27%	.06	.07	-.14	-											
5. Mom PPVT score	80.22	-.24	-.18	.05	-.20	-										
6. No. children in home	3.19	-.06	-.09	-.16	.06	-.16	-									
7. No. public assistances	1.19	.21	.21	-.07	-.05	-.23	.29	-								
8. Income-to-needs ratio	1.00	.02	.08	-.06	-.21	.15	-.15+	-.24	-							
<i>Psychosocial distress factors</i>																
9. Financial strain	3.32	.06	.01	.11	.07	-.08	-.04	.18	-.15	-						
10. Mom depr symptoms	8.62	.03	.01	.12	.10	.01	-.02	.06	-.05	-.56	-					
11. Mom anxi symptoms	7.46	-.14+	-.14+	.02	.11	-.03	-.03	-.07	-.11	.34	.48	-				
12. Neighborhood safety	2.88	.18	.11	-.08	.07	-.10	.08	.09	-.10	.01	-.08	-.06	-			
<i>Cumulative risk indices</i>																
13. SRI	4.05	.58	.56	-.40	.44	-.44	.32	.39	-.43	.08	.01	-.07	.24	-		
14. PDRI	1.36	.10	.01	.11	.04	-.11	-.06	.07	-.12	.66	.67	.55	.25	.06	-	
<i>Parenting factors</i>																
15. Positive parenting	3.90	-.21	-.30	.16	-.13+	.14+	.00	.00	-.08	-.02	-.08	-.09	-.03.	-.24	-.15	-
16. Negative parenting	3.30	.14+	.17	.02	-.02	-.06	-.12	.06	-.03	.01	.07	.09	.04	.13+	.15	-.53

Note. Mom no HSD/GED = Mother reported not having a high school diploma or General Education degree. PPVT = Peabody Picture Vocabulary Test-Revised; Dunn & Dunn (1981). SRI = sociodemographic risk index. PDRI = psychosocial distress risk index. Critical *r* value is +/- 0.152 and is bolded if exceeds $p < .05$. + $p < .1$.

Further examination of Table 4 shows that while the individual risk factor variables ranged in their level of association to the parenting factors, an expected pattern emerged when examining the correlations between these parenting factors and the risk indices. Higher scores on the SRI were associated with lower scores on positive ($r = -.24$) parenting factors, but trended towards being associated with more negative parenting ($r = .13$). Meanwhile, higher PDRI scores were associated with both more negative ($r = .15$) and less positive ($r = -.15$) parenting.

Regression Analyses

The SRI was regressed onto positive and negative parenting behavior, in order to assess the unique association of this risk index on each composite of parenting behavior. A similar regression analysis was conducted with the PDRI, and both analyses are presented in Table 5. Greater positive parenting was associated with less sociodemographic and psychosocial distress risk experience, while greater negative parenting was associated more psychosocial distress, but not sociodemographic, risk experience.

Latent Class Analysis

The final set of analyses were conducted in Mplus version 7.11. Models with one through five risk classes were fit and compared on the basis of information criteria (AIC, BIC, and sample size-adjusted BIC), entropy, bootstrapped likelihood ratio tests (BLRT) for c number of classes as compared to $c-1$ number of classes, and conceptual clarity (see Table 6). Information criteria were used holistically to determine both the minimum and maximum number of classes to examine. The BIC ceased to decrease with the continued addition of classes at the 3-class model, suggesting a model with a minimum of 2 latent classes (Nylund, Asparouhov, & Muthen, 2007). As the BIC tends to underestimate the number of classes in the model (Mclaughlan & Peel, 2000), particularly when sample size is not large (Nylund et al, 2007), it was but one

Table 5
Risk Indices Regressed onto Parenting Behaviors

Predictor	<u>Positive Parenting</u>			<u>Negative Parenting</u>		
	b	bse	β	b	bse	β
SRI	-0.104*	0.042	-0.189	0.056	0.050	0.087
PDRI	-0.176*	0.086	-0.159	0.220*	0.102	0.170

Note. SRI = sociodemographic risk index. PDRI = psychosocial distress risk index. * $p < .05$.

Table 6

Summary of Model Selection Information

Classes	P	AIC	Δ AIC	BIC	Δ BIC	SSA-BIC	Δ SSA-BIC	Entropy	BLRT (<i>p</i> -value)
1	19	2378.019	-	2418.553	-	2377.393	-	-	-
2	27	2256.611	117.552	2340.797	73.9	2255.311	118.227	.897	.0000
3	41	2227.838	29.042	2355.675	-14.61	2225.863	29.716	.899	.0000
4	55	2219.907	10.171	2391.397	-33.48	2217.258	10.845	.907	.0200
5	69	2219.729	-5.048	2434.871	-48.7	2216.407	-4.374	.925	.6000

Note. P = parameters estimated. AIC = Aikean information criteria. BIC = Bayesian information criteria. SSA-BIC = sample size adjusted BIC. BLRT = bootstrapped likelihood ratio test.

measure of information criteria used in model selection. The AIC ceased to decrease with the continued addition of classes at the 5-class model, suggesting a model with a maximum of 4 latent classes (Dziak, Coffman, Lanza, & Li, 2012; the sample-sized adjusted BIC concurred with the AIC, ceasing to decrease at the 5-class model). Entropy stayed roughly level across the 2, 3, and 4 class solutions, with values of .897, .899, and .907, respectively. Asparouhov and Muthen (2014) suggests an entropy value of at least .8 to indicate high latent classification. The BLRT, testing the comparative fit of each model to the prior model with one fewer class, ceased to reach statistical significance in the five-class model. This signifies that the addition of a fifth class is not necessary (Nylund et al., 2007). Thus, the 2, 3, and 4 class solutions will be discussed in terms of conceptual clarity in order to select the most appropriate model.

The 2-class solution. The two-class solution is presented in Table 7. Class 1 contained 42% ($n = 70$) of the dataset, and is characterized by relatively low levels of all risk factors assessed, excepting being on public assistance (73% of the class). Given the low-income sample and recruitment method (i.e., recruitment from Head Start centers, which oversample low-income families), however, this is unsurprising; Class 1 was therefore labeled “low risk”. Class 2, in contrast, included mothers who endorsed several sociodemographic risk indicators, including being single and unmarried. Nearly all mothers in Class 2 were on public assistance (92%), and they were more likely than not to report having their first child in their teenaged years (57%). Neither group had high probabilities of reporting psychosocial distress. Class 2 was labelled “sociodemographic risk.”

The 3-class solution. The three-class solution is presented in Table 8. A “low risk” class is retained (Class 1), although now it was smaller in size (32%, $n = 53$). A “sociodemographic risk” class was also retained (Class 3), with nearly the same class size (54%, $n = 91$) and similar

Table 7

Prevalences of Two Latent Classes and Probability of Reporting Indicators Given Latent Class

	Latent class	
	1	2
Proportion in each latent class	.58	.42
<i>n</i> in each latent class	97	70
<i>Item-response probabilities for each indicator given latent class</i>		
<u>Sociodemographic risk factors</u>		
Mother is unpartnered	0.940	0.000
Mother is unmarried	1.000	0.209
Mother was ≤ age 19 at first birth	0.576	0.413
Mother did not obtain diploma or GED	0.288	0.238
Mother is poor reader	0.279	0.176
Family receives public assistance	0.922	0.731
4+ children in home	0.302	0.330
Family income		
Below poverty line	0.272	0.351
“Deep” poverty	0.234	0.269
<u>Psychological distress risk factors</u>		
High financial strain	0.323	0.258
High maternal depressive symptoms	0.198	0.102
High maternal anxiety symptoms	0.122	0.163
Low subjective neighborhood safety	0.280	0.452

Note. Proportions above .5 bolded for ease of interpretation.

Table 8

Prevalences of Three Latent Classes and Probability of Reporting Indicators Given Latent Class

	Latent class		
	1	2	3
Proportion in each latent class	.32	.14	.54
<i>n</i> in each latent class	53	23	91
<i>Item-response probabilities for each indicator given latent class</i>			
<u>Sociodemographic risk factors</u>			
Mother is unpartnered	0.000	0.960	0.794
Mother is unmarried	.020	1.000	1.000
Mother was ≤ age 19 at first birth	0.363	0.386	0.635
Mother did not obtain diploma or GED	0.225	0.352	0.270
Mother is poor reader	0.196	0.321	0.243
Family receives public assistance	0.706	1.000	0.887
4+ children in home	0.339	0.182	0.335
Family income			
Below poverty line	0.310	0.163	0.340
“Deep” poverty	0.306	0.485	0.145
<u>Psychological distress risk factors</u>			
High financial strain	0.288	0.864	0.142
High maternal depressive symptoms	0.116	0.767	0.019
High maternal anxiety symptoms	0.174	0.182	0.081
Low subjective neighborhood safety	0.455	0.533	0.232

Note. Proportions above .5 bolded for ease of interpretation.

proportions of risk indicators. In the three-class solution, however, Class 2 now provides us with indicators loading on both sociodemographic and psychosocial risk indicators. Class 2 consists of mothers who are single and unmarried, who reported high levels of financial strain and depressive symptoms and low levels of neighborhood safety. Of crucial interest to the current study, all reported being on public assistance and nearly half (49%) reported income levels which placed them in “deep poverty.” Class 3 is thus labelled “multi-risk poverty.”

The 4-class solution. The four-class solution is presented in Table 9. Close inspection of these classes and their associated proportions show that the four-class solution is nearly identical to the three-class solution, except the division of the low risk class into a smaller low risk class (Class 1) and a class marked by solely sociodemographic indicators (Class 3). Class 1 was labelled “low risk” and constituted 22% ($n = 36$) of the sample. Class 3, in comparison, consists of mothers who report being in relationships and experiencing low levels of psychosocial distress, but experiencing such risks as being young at the time of first childbirth (61%), and living in homes with 4 or more children (100%), and lower income (as indicated by levels of living either below the poverty line [47%] or, separately, living in deep poverty [41%]). This can be contrasted with the pattern of risk indicators endorsed by Class 4, the “sociodemographic risk” class: mothers in this class were likely to be single, unmarried, young moms, and on public assistance. Class 4 moms (52%, $n = 87$) were not, however, likely to live in poverty or in crowded homes. Finally, Class 2 (14%, $n = 24$) corresponds to the previous “multi-risk poverty” class, which reported high levels of financial strain and depressive symptoms, low neighborhood safety, lived on public assistance (100%) and possibly in deep poverty (48%), and were single/unmarried. Thus, the class structure of the 3-class model was largely retained in the 4-

Table 9

Prevalences of Four Latent Classes and Probability of Reporting Indicators Given Latent Class

	Latent class			
	1	2	3	4
Proportion in each latent class	.22	.14	.12	.52
<i>n</i> in each latent class	36	24	20	87
<i>Item-response probabilities for each indicator given latent class</i>				
<u>Sociodemographic risk factors</u>				
Mother is unpartnered	0.000	0.962	0.000	0.811
Mother is unmarried	0.000	1.000	0.093	1.000
Mother was ≤ age 19 at first birth	0.232	0.394	0.611	0.639
Mother did not obtain diploma or GED	0.234	0.346	0.185	0.275
Mother is poor reader	0.188	0.321	0.197	0.246
Family receives public assistance	0.554	1.000	1.000	0.888
4+ children in home	0.000	0.182	1.000	0.326
Family income				
Below poverty line	0.232	0.161	0.476	0.341
“Deep” poverty	0.251	0.478	0.409	0.141
<u>Psychological distress risk factors</u>				
High financial strain	0.349	0.864	0.178	0.129
High maternal depressive symptoms	0.143	1.000	0.053	0.020
High maternal anxiety symptoms	0.201	0.739	0.107	0.084
Low subjective neighborhood safety	0.451	0.529	0.473	0.222

Note. Proportions above .5 bolded for ease of interpretation.

class model, with the addition of the unique experiences of Class 3, labelled “crowded teen moms in poverty.”

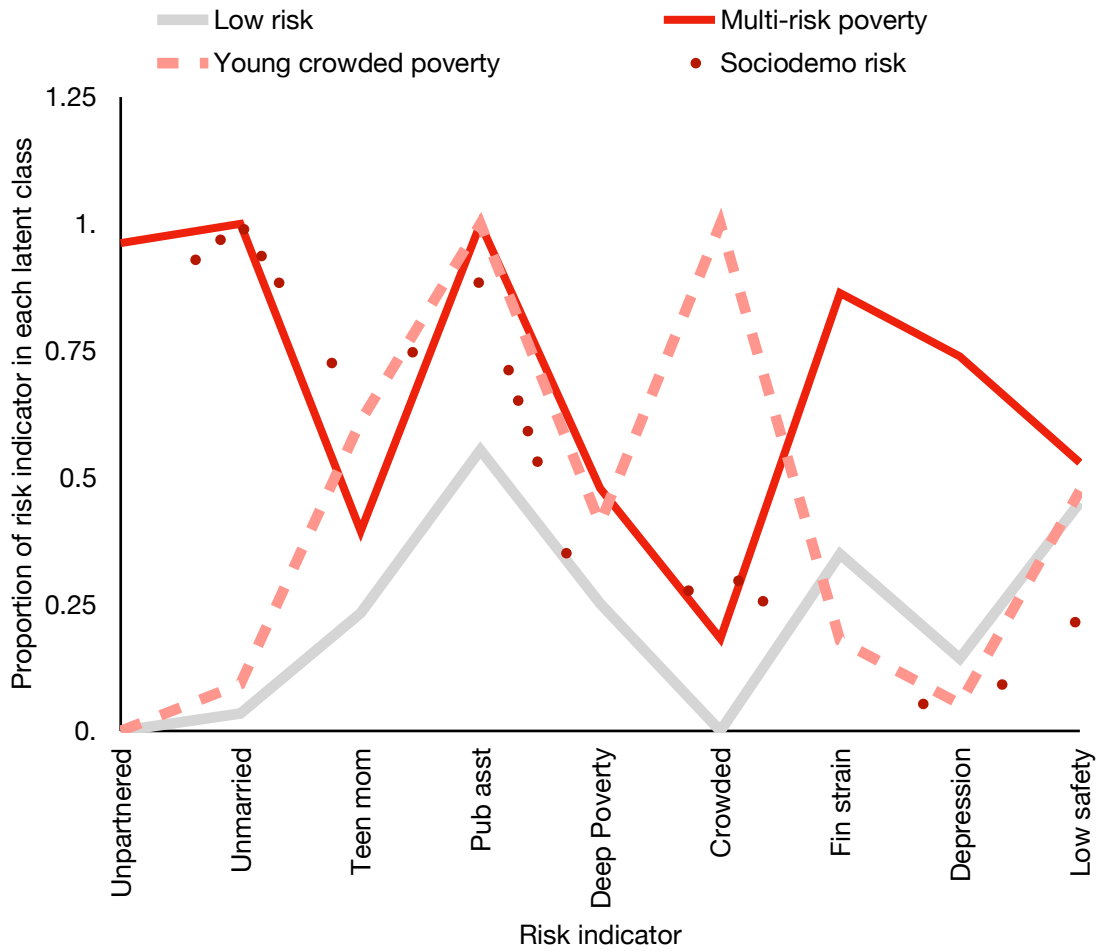
Selection of latent class model. After careful consideration of model fit and the conceptual clarity and meaningfulness of the two-, three- and four-class models, the four-class model was retained for further discussion and analysis. The nearly-even partitioning of the “low risk” class into a class of mothers reporting certain sociodemographic risk indicators suggests that these mothers may have unique risk experiences which are not captured in the 3-class model. Figure 1 depicts the prevalence of important indicators by most likely class membership.

Latent Class Analysis with Distal Outcomes

The final step in my analytic approach was to assess the ability of the latent class structure identified above to differentiate by parenting behavior. This step utilized the BCH method of weighting the latent class variable by estimated measurement error. As such, individuals are placed in the most likely latent class, but measurement error due to incorrect classification is minimized due to the weights. A chi-square test then compares differences between class means, with statistical significance indicating mean differences.

Table 10 shows the results of the BCH analysis of equality of means. Positive parenting differed across classes ($\chi^2 = 16.49, p < .001$), but negative parenting did not ($\chi^2 = 5.95, ns$). When considering the differences between sets of classes, further chi-square analyses showed that the low-risk class ($M = 4.45$) exhibited significantly higher positive parenting than the multi-risk class ($M = 3.52; \chi^2 = 11.02, p < .001$), the crowded teen moms class ($M = 3.89; \chi^2 = 5.62, p < .05$), and the sociodemographic risk class ($M = 3.78; \chi^2 = 12.19, p < .001$). However, when the three high-risk classes were compared, means of positive parenting did not differ significantly (see Table 10).

Figure 1
Prevalence of Indicator Variables by Latent Class



Note. Not shown are 3 indicator variables, which were consistently low in their prevalence (i.e., education, reading ability, and anxiety symptoms).

Table 10

Equality Tests of Means of Parenting Across Latent Classes

	Positive Parenting	Negative Parenting
	χ^2	χ^2
Overall test of means	16.79***	5.95
Low risk class v.		
Multi risk class	11.02***	-
Crowded teen class	5.62*	-
Sociodemographic risk class	12.19***	-
Multi-risk class v.		
Crowded teen class	1.63	-
Sociodemographic risk class	0.94	-
Crowded teen class v.		
Sociodemographic risk class	0.27	-

Note. *** $p < .001$. ** $p < .01$. * $p < .05$.

Chapter 4

Discussion

The present study set out to determine the relative value of the additive and the qualitative approaches to assessing and understanding risk experience in a low-income sample. In a series of analyses, individual, cumulative, and latent considerations of risk experience were analyzed in a high-risk sample of mothers and their two-year-old children. By using two measures of cumulative risk, rather than lumping all risk together, I was able to see that parenting behavior was differently associated with two different types of cumulative risks experienced. Further, when these risk indicators were analyzed in a latent class analysis, we found that four unique classes made up our sample: a relatively low risk group, a group categorized by sociodemographic (but not psychosocial distress) risk, a multiple-risk (i.e., both sociodemographic and psychosocial distress), group, and a group which reported specific sociodemographic risks (poverty, young mothers, single parenthood) but not others.

Hypotheses

Hypothesis 1: Poverty-related risk factors will correlate positively with one another.

Most individual risk factors were related to one another, in that more risk in one domain was associated with more risk in another area. Table 4 shows that patterns of experience emerged in these correlations. Some types of risk factors were more likely to correlate together than others: for example, sociodemographic and psychosocial risk factors tended to correlate with one another, respectively, but little cross-correlation between the two risk factor categories was seen.

Hypothesis 2: Individual poverty-related risk factors will correlate with observed parenting. Several risk factors were associated with parenting behavior: more positive parenting was observed in mothers who were partnered or married, older, more educated and better

readers, whereas more negative parenting was observed in mothers who were single or unmarried. Surprisingly, however, many individual risk factors were unrelated to parenting behavior. For example, though residential crowding (Johnson, Martin, Brooks-Gunn, & Petrill, 2008), income (Towe-Goodman et al., 2014), and maternal psychiatric symptoms (Seifer et al., 1996) have historically been reported as associated with parenting, the present study did not find this to be so.

Hypothesis 3: Parenting behavior will be associated with cumulative sociodemographic risk experience. When the sociodemographic risk factors were summed to create the SRI, greater sociodemographic risk overall was associated with less positive parenting and trended towards significance for more negative parenting. Regression analyses showed that, when controlling for levels of psychosocial distress risk experience, sociodemographic risk experience continued to be associated with less positive parenting. However, there was no difference in levels of negative parenting by sociodemographic risk experience.

Hypothesis 4: Parenting behavior will be associated with cumulative psychosocial distress experience. The summed psychosocial distress risk factors correlated with both forms of parenting behavior, in that more psychosocial risk was associated with less positive parenting and more negative parenting. When controlling for sociodemographic risk experience, mothers who reported greater psychosocial distress risk experience exhibited less positive parenting and more negative parenting.

Hypothesis 5: Sociodemographic and psychosocial distress risk indicators in the sample will cluster in unique patterns of risk. The most parsimonious and best-fitting model had four latent classes of risk experience: the (relatively) low risk class, the multi-risk poverty class, the crowded teen mom in poverty class, and the sociodemographic risk class. Table 9 lists the

prevalence of indicators variables by most likely latent class, and a pattern of heterogeneity emerged between the classes. Rather than four classes of increasing risk experience, I found that mothers experienced qualitatively different constellations of risk. The most prevalent class, with more than half the sample, was the sociodemographic risk class. These mothers were likely to report risks associated with traditional contextual risks, such as being unpartnered and young at the birth of their first child, in the absence of psychosocial distress risks. The size and characteristics of this class are unsurprising given the community from which the sample was drawn. In hindsight, the sociodemographic class should have been as expected as the relatively-low risk class, in which mothers were unlikely to endorse any of the risk indicators (except for public assistance).

The remaining quarter of the sample was most likely to be in one of two classes. The multi-risk poverty class, similar to that described in Lanza and colleagues' work (e.g., Lanza et al., 2011; Lanza, Rhodes, Nix, Greenberg, & the Conduct Problems Prevention Research Group, 2010), endorsed several sociodemographic risks as well as all of the psychosocial distress risk indicators. Additionally, this class had highest prevalence of deep poverty: 48% of the sociodemographic class lived on less than half as much income as needed. These mothers are reporting depressive and anxiety symptoms, live in neighborhoods they feel are unsafe, report financial strain, and are living without the material necessities to care for their families. Comparatively, the crowded poor teen moms group lived largely in poverty in crowded homes and all of these mothers received at least one form of government assistance, yet reported little distress.

Hypothesis 6: Parenting behavior will differ by most likely latent class. Levels of positive parenting behavior differentiated the low-risk class from all others, with the low-risk class being

predicted by higher levels of positive parenting behavior than the multi-risk, the crowded young teen, or the sociodemographic risk classes. Surprisingly, there were no differences between classes in terms of negative parenting, nor of either type of parenting behavior between the three risk classes.

Parenting in poverty is unique due to the multitude of factors assailing mothers on a regular basis. Traditionally it has been enough to state that the more risk exposure a family has, the worse the parenting behavior should be. However, we know that risk experience is not entirely additive. Rather, families and individuals experience unique combinations of these risks, and these combinations have been shown to predict outcomes differently than just “more is worse.” The current study showed that poor families in New Orleans experience poverty and its related risks in unique ways: rather than more or less risk experience, a pattern of four unique constellations emerged. Not only did these groups differ qualitatively from one another, but this sample of mothers were unique in that they consisted of groups that may be unique to New Orleans or other urban areas. As expected, a relatively low risk class emerged. It is important to note that, due to the sampling from Head Start centers, even the low risk class consisted of mothers raising poor families: these mothers were more likely than not to receive public assistance, and 40% of the families live below the poverty line and rated their neighborhoods as unsafe. The label of “low risk” needs to be applied to this group sensitively, as they still experience more sociodemographic risk than the average American family. Even so, this group has the most positive parenting and the least negative parenting in the sample, as compared to the three risk classes.

Implications

By assessing combinations of these experiences, we can better target intervention in the communities hit hardest by poverty and risk. The regression analyses and latent class analysis agree: the presence of relative high levels of sociodemographic risk, regardless of levels of psychosocial distress risk, is associated with differences in positive, but not negative, parenting behaviors. While the LCA revealed four unique classes of mothers, the only differences in parenting between these mothers existed between the low-risk class and the other three risk-defined classes. It can therefore be assumed that it is the presence or absence of sociodemographic factors centered on economic deprivation that is leading to differences in these mothers' interactions towards their young children.

Strengths

The present study, to the author's knowledge, is the only one in which two separate additive indices of risk were created, in order to assess the differential association between objective and subjective risk factors for mothers living in or around poverty. Surprisingly, these indices did not seem to overlap, as seen by their lack of correlation, suggesting that multiple indices of risk may be incredibly useful in better understanding overall experience. Further, the dual indices were associated with different patterns of parenting, a finding which would have been overlooked had the two been combined into one index.

The mothers in this study, by design, were living roughly just at the poverty line, and sampled in order to better understand the experiences of this unique group of New Orleanian families. This oversampling allowed the present study to gain a nuanced view of the high levels of risk experience in this community. The focus on Head Start centers for recruitment nearly guaranteed more intensive risk experience than sampling from the larger community. While the

findings of the present study are not generalizable to families at large, they offer important insight about the families who may benefit most from targeted parenting interventions.

Limitations

While the present study gives insight to the unique experiences of these families, it is not without limitations. The sample is small and, while heterogeneous, truncated in terms of income and risk experience by selecting only from Head Start families. This limits the generalizability of findings to both more diverse populations as well as the larger population from which this subsample was pulled. Additionally, the unique classes identified in the latent class analysis are generalizable only to this group of families. Other communities may have different constellations of risk, even if one were to examine the same indicators.

Future Directions

To battle these limitations, future studies should expand the sampling criteria when exploring the effects of risk experience on parenting. A larger sample may have ample power to discern differences between the three risk classes that the present study was unable to do. In fact, that there may be subtle differences in parenting between these three classes is suggested by the regressions of parenting onto the two additive risk indices. Only sociodemographic risk was associated with parenting—and then, only with positive parenting. Furthermore, the main difference that emerged in comparing parenting by latent class membership was in sociodemographic risk, and then only in positive parenting. A larger sample would also allow for researchers to further explore the puzzling contradiction of the young crowded class, which reports low levels of distress but relatively high likelihood of poverty or deep poverty and residential crowding. One possibility is that these women gave birth to their first child while teenagers, and relied on older family members for support. Particularly in New Orleans, it is not

uncommon for African American families to live in multi-generation homes. This may help explain the high rates of single status among this group, as well as the residential crowding as indicated by four or more minor children in the home. It may be that while this group reported several traditional indicators of risk, they and their parenting are protected by the high levels of social support available to them.

In addition to a larger overall sample, a more diverse, community-based sample without income or needs-based exclusion criteria would allow more variability and greater generalization of the findings. While this study purposefully oversampled high-risk families to learn more about the specifics of deep poverty, allowing a distribution of income and risk in the sample that is more representative of the overall community. For example, subjective financial strain is not limited to those living under or near the poverty line, nor are the other psychosocial distress risk indicators exclusive to being poor. Rather, it may be that a more economically diverse sample includes a latent class of families who are living without sociodemographic risk but experiencing high levels of psychosocial distress, which in turn may be associated with their parenting.

The present study intended to compare analytic approaches to risk experience, particularly contrasting the utility of quantitative and qualitative approaches to examine the effects of familial risk on parenting behavior. Rather than deciding that one approach is “better” than another, the overall story of these findings is to consider what the research question at hand is and to carefully choose the analytic approach that will best answer that specific question. The regression analyses tell us that it is sociodemographic risk, not psychosocial risk, experience by mothers that is associated with differences in parenting behavior, and these differences are in less positive, rather than more negative, interactions with their children.. The latent class analyses show us that there are four unique subgroups in this sample, and that differences in positive

parenting exist only between the low-risk class and the three risk groups. The theoretical difference between these sets of findings depends on the question being asked. If one is interested in the accumulation of risk in families, the cumulative risk approach should be used (and researchers should carefully consider the qualitative types of variables included in their risk index). If the question is about unique combinations of this accumulated risks, a person-centered analysis such as LCA will be more useful.

Conclusion

Despite the limitations brought about via a modest-sized and somewhat homogenous sample, the present study brings to light important information concerning the parenting behaviors and risk experiences of mothers in New Orleans and surrounding areas. Families experiencing more sociodemographic risk engaged in less positive parenting behavior, whereas families experiencing more psychosocial distress engaged in less positive parenting behavior and more negative parenting behavior. When compared across latent classes, however, only positive parenting differentiated among mothers experiencing different patterns of risk. While the cumulative risk approach and person-centered approach resulted in similar findings, an important conclusion can be made: different groups of mothers exist in this community, varying in their experience of psychological factors as well as economic hardship. As early as in their child's second year of life, parenting differences emerged, and future studies of families with older children and ampler sample size may find these differences continue to diverge and may even become exasperated with time and experience. Clearly, the findings of the current study point to the importance of early family intervention, and suggest that reduction of sociodemographic risk may have great influence on parenting in the context of poverty.

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Vita

The author was born in Jeannette, Pennsylvania. She obtained her Bachelor's degree in psychology from North Carolina State University in 2006, and her Master's degree in psychology from the College of William & Mary in 2010. She joined the University of New Orleans psychology department in 2018 to pursue a doctoral degree in Applied Developmental Psychology. During her time at UNO, she became a member of Dr. Sarah Black's laboratory.