

Bowling Green State University
The Center for Family and Demographic Research

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Phone: (419) 372-7279 cfdr@bgsu.edu

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**CHILDREN'S PEER AGGRESSION AND MOTHERS' MENTAL HEALTH:
VARIATION IN STRESS PROLIFERATION BY MATERNAL EDUCATION***

Kei Nomaguchi

and

Marshal Neal Fetto

Department of Sociology &
Center for Family and Demographic Research
Bowling Green State University
Bowling Green, OH

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Children's Peer Aggression and Mothers' Mental Health:
Variation in Stress Proliferation by Maternal Education

ABSTRACT

Although much research examines the effects of peer aggression—perpetration or victimization—on children's mental health, how it relates to mothers' mental health remains unclear. Researchers tend to see children's peer problems as consequences of mothers' poor mental health, ignoring the possibility that these problems act as parental strain affecting mothers' mental health negatively. Using data from the NICHD Early Child Care and Youth Development ($N = 803$), we examine cross-lagged associations between children's peer aggression and mothers' mental health with a focus on variation by maternal education. For mothers with a college degree, children's peer aggression perpetration or victimization relates to mothers' subsequent depression and anger. For mothers without a college degree, mothers' depression and anger are more likely to precede children's perpetration or victimization of peer aggression than to be affected by children's peer aggression. These findings underscore social class differences in dynamics of stress proliferation across generations.

Key words: Anger, depression, life course approach, linked lives, parenting role strain, peer aggression, peer victimization, social class, stress proliferation

Peer aggression, or bullying, imposes major challenges for children (Olweus 1994). Since the 1990s, peer aggression among school-age children and adolescents has been increasingly recognized as a public health issue (National Institute of Child Health and Human Development [NICHD] 2016; Smokowski and Kopasz 2005). Past research has shown that victimization of peer aggression, defined as the receipt of any act of unwanted aggression from similar-age peers, has serious consequences for children's mental or behavioral health (Card and Hodges 2008; Gini and Pozzoli 2013; Hawker and Boulton. 2000; Ladd and Kochenderfer-Ladd 2002; Nixon et al. 2011). Perpetration of peer aggression is also related to children's poor mental or behavioral health outcomes (Gini and Pozzle 2009; Scholte et al. 2007; Turner et al. 2013). These findings underscore serious implications of peer aggression experiences for children's well-being. Researchers and policy makers have been debating how to solve or prevent the problems of peer aggression among school-age children and adolescents (e.g., NICHD 2016).

The experts and the public typically expect parents to play a central role in this public health initiative (Bowes, et al. 2010; Gladden et al. 2014; Novak 2017). Little research has examined how children's peer aggression problems affect parents' mental health, however. Yet, there are reasons for why such research is important. First, past research has found that challenges faced by one family member can be easily transmit to other family members (Pearlin 1999). Given the strong interdependence between children and parents, such transmission of stress, or *stress proliferation* (Pearlin 1999; Pearlin et al. 2005), likely occurs between children and parents (Barr et al. 2017; Thoits 2010). Second, the parenting norm in contemporary U.S. society, reflecting the neoliberal context, emphasizes individual parents', especially mothers', responsibility for ensuring that children do well in life and become successful adults (Hays 1996). Thus, when children have problems, it becomes emotional burdens for their parents

(Rizzo et al. 2013; Wall 2010). Past research has shown that children's health, emotional, or behavioral problems are related to more parental strain, poor subjective well-being, and poorer mental health for parents (Barr et al. 2017; Early, Gregoire, and McDonald 2002; Milkie, Nomaguchi, and Schieman 2018; Milkie et al. 2010; Nomaguchi and Brown 2011). As peer aggression is a major interpersonal problem that school-age children may commit or have to deal with (Eccles 1999; NICHD 2016), children's involvement in peer aggression, either perpetration or victimization, may be a chronic stressor, or specifically, parental strain (Pearlin 1983), for their parents.

To what extent parents' mental health is affected by their children's peer aggression experience may depend on socioeconomic status (SES). Past research has shown that types and degrees of challenges that parents face in raising children differ by SES (Elliott and Aseltine 2013; Nelson 2010; Nomaguchi and Brown 2011). Parents with lower SES may have to be worried about providing children with basic needs—food, clothes, health care, and safety—(Elliott and Bowen 2018; Nomaguchi and Brown 2011), whereas parents with higher SES are more likely to be concerned about managing children's academic and social life to optimize their children's personal opportunities (Milkie and Warner 2014; Nelson 2010). Thus children's problems with their peers, which are arguably secondary to more immediate financial strains that are present among lower SES families, could be a stressor to which parents with higher SES are more susceptible than are parents with lower SES.

In this paper, we use data from the NICHD Study of Early Child Care and Youth Development (SECCYD) to estimate the association between children's peer aggression—perpetration or victimization—and mothers' mental health—depression and anger—when children are in third, fifth, and six grades ($N = 803$). We focus on mothers because data on

fathers in the SECCYD are limited. We examine two questions: (a) Does children's perpetration or victimization of peer aggression relate to mothers' subsequent depression and anger?; and (b) does the association between children's peer aggression and parents' mental health varies by SES? We use mothers' level of education as the measure of SES, as prior research has shown that maternal education is a good indicator of SES in understanding SES variation in mothers' parenting experiences as well as their vulnerability to particular stressors (Augustine and Crosnoe 2010; Mirowsky and Ross 2015; Nomaguchi and Brown 2011; Turney 2011).

Finally, past research on stress proliferation between mothers and children tends to conceptualize mothers' problems as the primary stressor that affects their children's behaviors and mental health negatively (Meadows, McLanahan, and Brooks-Gunn 2007; Turney 2011). Thus, we examine the possibility that the association is reverse: mothers' poor mental health is related to children's subsequent perpetration or victimization of peer aggression, using cross-lagged structural equation models (SEM) (Allison, Williams, and Moral-Benito 2017).

The findings of the present analysis provide important insights into SES variation in dynamics of stress proliferation across generations. The findings also inform practitioners and policy makers about the importance of considering the possibility of parents as "second victims" of children's peer aggression (Amber 1994) as well as the possibility of parents' mental health issues as the primary stressor for their children's peer problems when encouraging parents to be allies of antibullying programs.

Children's Peer Aggression Experience as Mothers' Parental Strain

The stress proliferation approach (Pearlin 1999; Pearlin et al. 2005; Thoits 2010) guides us to conceptualize peer aggression problems that children experience as a chronic stressor that affects mothers' mental health. Stress proliferation refers to the situation where stressful life

circumstances transmit into other stressful life circumstances (LeBlanc, Frost, and Wight 2015; Pearlin 1999; Pearlin, Aneshensel, and Leblanc 1997). Researchers have examined similar ideas with different terms, such as stress spillover (Bolger, DeLongis, Kessler, and Wethington 1989; Carr and Umberson 2013), stress crossover (Bolger et al. 1989; Nelson et al. 2009), and stress contagion (Barr et al. 2018; Wethington 2000). Stress proliferation can occur within individuals or between individuals (Thoits 2010). The present analysis focuses on the latter. Past research has shown that, not surprisingly, family members often experience stress proliferation from one another. As their lives are closely interconnected, stress experienced by one family member in day-to-day activities can be shared by or spread across other family members (LeBlanc, Frost, and Wight 2015). Some of the examples of studies include one spouse's work stress leading to poor quality of relationship in his/her partnership (LeBlanc, Frost, and Wight 2015; Rodriguez-Munoz et al. 2017) and fathers' job loss increasing conflict and harshness among family members (Conger et al. 1994).

The present analysis examines stress proliferation between mothers and children with the specific focus on children's peer aggression experience becoming parental strain for their mothers. Parental strain is a chronic stressor in the parenting role, generally defined as individuals' perceptions of difficulty in meeting the tasks and expectations in the parenting role (Pearlin 1983). Understanding children's problems as mothers' parental strain is increasingly relevant in contemporary U.S. society. The intensive mothering ideology, which emerged in the 1980s and was established by the 2000s, emphasizes the critical role of mothers' careful interventions to protect their children from any harms that may negatively influence their children's developmental outcomes (Hays 1996). Qualitative research has indicated that today's mothers feel tremendous pressure to be responsible for every aspect of their children's proper

development, including physical, cognitive, social and interpersonal skills (Sutherland 2010; Nelson 2010; Wall 2010). More quantitative research is needed to examine how mothers' evaluations of how their children are succeeding with peers, with teachers and other mentors, and with schoolwork relate to their mental health (Nomaguchi and Milkie 2017).

Some quantitative studies have shown that problems that children face appear to affect mothers' behaviors and mental health. Children's difficult temperament, negative emotion, and problem behaviors are related to mothers' perceptions of difficulty in dealing with their children, which result in mothers' negative responses to, or disengagement with, their children (McBride, Schoppe, and Rane 2002; Nelson et al. 2009). Milkie et al. (2018) found that children's health, school, or friend problems are related to their parents' depression, anger, and sleep problems. Barr et al. (2018) showed that challenges that children encounter during the transition to adulthood in various life domains, such as work, schooling, and romantic relationships, can proliferate into stress in mothers' lives which influences their physical and mental health. These studies indicate that children's challenging life circumstances can be major stressors for mothers.

During middle childhood and early adolescence, as children's social world expands, developing friendships and navigating interpersonal relationships with peers are major concerns for children (Eccles 1999; U.S. Center for Disease Control. 2018). Accordingly, mothers' parental strains at this stage of children's life center on issues regarding children's peer relationships, including how well their children get along with their peers (Eccles 1999; Furstenberg et al. 1999; Pearlin 1983). As public awareness of mental health consequences of peer aggression experiences has increased (NICHD 2016), children's experiences of these problems must be of central concern for mothers.

Limited research has examined the association between children's peer aggression and mothers' mental health. A couple of studies have suggested that children's peer aggression or victimization affects parents (Amber 1994; Ladd 1999). In her qualitative research, Amber (1994) has argued that parents are "second victims" of peer aggression that their children experience at school, as they suffer in sympathy with their children. These mothers also feel frustrated or powerless while they are expected or even blamed by clinicians to intervene or prevent their children's peer aggression problems. When children have peer problems, parents tend to feel as if they should spend more time with their children (Milkie, Nomaguchi, and Schieman 2018), perhaps because they may feel the responsibility for solving the problems with their children. Past studies also suggest that children bring the negative mood created by the peer disappointment home, which often directly leads to conflict with their parents (Amber 1994; Ladd 1999). Children's aggression toward other children, too, can be a source of concern for mothers, as most mothers do not wish their children to be aggressors who cause trouble with other people (Pearlin 1983). Children who bully their peers tend to be more hostile or withdrawn with their parents (Ladd 1999). Because mother-child conflict is related to mothers' poor mental health (Nomaguchi 2012), it is likely that children's peer aggression involvement is related to mothers' poor mental health.

SES Variation in Mothers' Vulnerability to Children' Peer Aggression Experience

The association between children's peer aggression and mothers' mental health may vary by SES, often measured by maternal education. Stress research has shown that individuals with higher SES tend to have more material, social, or psychological resources that they can use to deal with stressful situations, leaving them less vulnerable compared with those with lower SES (Pearlin 1999). Consistent with this argument, Cooper and colleagues (2009) found that

relationship dissolution, a major stressor in life, was associated with more parenting stress for mothers with lower levels of education, but not for mothers with higher levels of education. Research on SES differences in parenting suggests SES disparities in mothers' social and cultural capital (Lareau 2003). Mothers with higher levels of education are more likely than mothers with lower levels of education to feel comfortable approaching their children's teachers or school administrations to discuss concerns and difficulties that their children face at school (Calarco 2014; Lareau 2003). Thus, from the *differential resources* perspective, we expect that the association between children's peer aggression problems and maternal mental health is weaker among more educated mothers than less educated mothers.

Alternatively, the salience of a particular stressor to which individuals are vulnerable may vary by SES, in part because of SES differences in the presence of other, perhaps more serious, stressors (Pearlin 1999). Prior research has shown that types of parental strain that mothers experience differ by their education level. Whereas mothers with lower levels of education report concerns regarding basic needs such as their children's safety and whether they might get into trouble, mothers with a college degree report lack of personal time due to childcare commitment as a major difficulty in the parenting role (Nomaguchi and Brown, 2011). In a similar fashion, the extent to which children's peer aggression act as the primary parental strain that affect mothers' mental health may vary by SES. Mothers with lower levels of education are more likely than mothers with higher levels of education to face a myriad of other challenges, such as unemployment, relationship problems, and financial strain. For mothers with lower SES, providing children with basic needs—shelter, food, clothes, healthcare, and affection—can be challenging (Elliott and Bowen 2018; Lareau, 2003). Their daily life is filled with struggles to protect children from homelessness, drugs and alcohol, or arrests (Elliot, Powell, and Brenton

2015). Under such conditions, children's problems with peers may be pushed down to the end of the list of concerns that mothers have to endure. In contrast, for mothers with higher SES, because of the absence of other immediate challenges, children's peer aggression problems may be one of the most salient stressors they experience. In sum, from the *differential salience of stressors* perspective, we expect that the association between children's peer aggression problems maternal mental health is greater among more educated mothers than less educated mothers.

Potential Reversal Relationship Between Children's Peer Aggression and Mothers' Mental Health

Past research suggests the possibility that the association is reverse, that is, mothers' poor mental health may be the primary stressor that proliferates as children's subsequent peer aggression involvement, either perpetration or victimization. Sociological studies have examined more general measures of children's problems rather than specific aspects of children's problems such as peer aggression. Studies using data from the Fragile Families and Child Wellbeing Study (FFCWS) found that mothers' depression and anxiety was related to their children's internalized problems (e.g., anxiety or depression) and externalizing problems (e.g., oppositional defiant behavior) when the study children were three years old (Meadows, McLanahan, and Books-Gunn 2007) and five years old (Turney 2011, 2012). Past research on family or child characteristics that are related to the odds that children become bullies or victims of bullying, mostly using small samples, has suggested that withdrawn or harsh parenting is related to children's perpetration of peer aggression, whereas children's low self-esteem and feeling insecure are related to higher odds of victimization of peer aggression (Georgiou, 2008. Lindsey et al. 2009; Smokowki and Kopaz 2005). Given that mothers' depression and anger are related to

these characteristics that are associated with children's perpetration and victimization of peer aggression (Turney 2011; 2012), we recognize the possibility that mothers' poor mental health is the primary stressor that proliferates as children's subsequent perpetration or victimization of peer aggression. As we considered in the case of the proliferation of children's peer aggression to mothers' mental health, the proliferation of mothers' mental health to children's peer aggression experience may vary by mother's level of education. Although looking at different child outcomes, Augustine and Crosnoe (2010) found that maternal education buffers the negative effects of maternal depression on children's educational attainment. The authors speculated that highly educated mothers are more likely than less educated mothers to send their children high-quality after-school care or extracurricular activities that tend to help cultivate their children's self-esteem and interpersonal skills (Lareau 2003; Turney 2011). Such differences in parenting resources may buffer the effects of maternal depression on children's emotional and behavioral health. These past findings suggest the possibility that the association between mothers' poor mental health and children's subsequent perpetration or victimization of peer aggression may be found among lower SES families more than higher SES families. In sum, we take into account the potential reserve association in the present analysis.

THE PRESENT STUDY

Using longitudinal data from the SECCYD, this paper examines the association between children's peer aggression and mothers' subsequent mental health when children were in third, fifth, and sixth grades. Our first hypothesis is that children's perpetration and victimization of peer aggression in third and fifth grades are related to mothers' depression and anger in fifth and sixth grades respectively (H1). Our second set of hypotheses are on SES variation in the association. Prior research led us to two contrasting hypotheses. From the differential resource

perspective, the effects of children's perpetration and victimization of peer aggression on mothers' mental health are greater for mothers without a college degree than mothers with a college degree (H2a). Alternatively, from the differential salience perspective, the effects of children's perpetration and victimization of peer aggression on mothers' mental health are greater for mothers with a college degree than mothers without a college degree (H2b). We also examine the possibility of the reverse association. Our third hypothesis predicts that mothers' depression and anger in third and fifth grades are related to children's perpetration and victimization of peer aggression in fifth and sixth grades respectively (H3). For SES variation, we expect that the effects of mothers' mental health on children's perpetration and victimization of peer aggression are greater for mothers with lower levels of education than mothers with higher levels of education (H4).

All analyses are controlled for background characteristics that are related to children's peer aggression and mothers' mental health, such as mothers' weekly work hours, race-ethnicity, age at childbirth, marital status, family income, the number of children in the household, and children's gender (Meadows, McLanahan, and Brooks-Gunn 2007; Turney 2011). As we detail in the Method section, we use a statistical technique that allows us to examine possible reciprocal associations while controlling for correlations among dependent or independent variables across waves.

METHOD

Data

The SECCYD is a longitudinal study of 1,364 children and their families that was originally designed to examine the link between non-maternal child care and child developmental outcomes. This study began in 1991 when families of newborns were recruited

from hospitals in 10 cities in 9 states in the United States (see NICHD Early Child Care Research, or NICHD ECCRN 2005 for detailed information about the data). The SECCYD collected information about peer aggression involvement and maternal mental health when children were in third, fifth, and sixth grades. For the present analysis, we selected cases where mothers participated in all three surveys ($n = 963$). List-wise deletion was used to deal with missing variables, which resulted in the sample size of $N = 803$. Those who remained in the analytical sample were more likely than those who did not to be married, White, and more educated (data not shown).

The SECCYD is not a nationally representative sample of children and their mothers. Because disadvantaged groups, such as mothers under 18 years old, mothers not fluent in English, mothers with substance abuse problems and families who lived in dangerous neighborhoods, were not included in the study, families in the SECCYD were more economically advantaged than their counterparts in the general U.S. population, as reflected in higher maternal education, maternal employment rates, and family income (NICHD ECCRN 2005). Given that lower SES is related to mothers' poor mental health (Meadows, McLanahan, and Brooks-Gunn 2007; Turney 2012), the findings presented here may underestimate the degree of the effects of mothers' mental health on children's peer aggression problems. We discuss limitations of the present analysis in the discussion section.

Measures

Mothers' mental health includes two indicators. *Maternal depression* is measured as a modified version of the Center for Epidemiological Studies Depression Scale (CES-D), the sum of 20 items ($\alpha = .91, .90$, and $.91$ at T1, T2, and T3 respectively) asking mothers about the previous week (0 = *less than once a week*, 1 = *1 to 2 days a week*, 2 = *3 to 4 days a week*, 3 =

most or all week). *Maternal anger* was measured as the sum of 10 questions regarding their feelings about the previous week ($\alpha = .90, .91, \text{ and } .92$ at T1, T2, and T3 respectively), including (a) “I was furious”; (b) “I felt like banging on the table”; (c) “I felt angry”; (d) “I felt like yelling at somebody”; (e) “I felt like breaking things”; (f) “I was bad”; (g) “I felt irritated”; (h) “I felt like hitting someone”; (i) “I was burned up”; (j) “I felt like swearing” (1 = not at all, 2 = somewhat, 3 = moderately, and 4 = very much).

Children’s peer problems include two indicators—peer aggression perpetration and victimization. *Child’s perpetration of peer aggression* is the average of six questions ($\alpha = .74, .75, \text{ and } .78$ at T1, T2, and T3 respectively) including (a) “When mad at a peer, my child gets even by excluding the peer from the group”; (b) “My child spreads rumors or gossips about some peers”; (c) “When angry at a peer, my child tries to get other children to stop playing with that child”; (d) “When mad at a peer, my child ignores or stops talking to that child”; (e) “My child threatens to stop being someone’s friend in order to hurt that child or to get what is wanted from that child”; and (f) “My child tries to exclude certain peers from group activities” (0 = not true; 1 = sometimes true, and 2 = often true). (Crick, 1996). *Child’s victimization of peer aggression* is the average of seven questions ($\alpha = .89, .91, \text{ and } .91$ at T1, T2, and T3 respectively), including (a) “My child is ridiculed by peers”; (b) “My child is picked on by other children”; (c) “My child is called names by peers”; (d) “My child is pushed around by other children”; (e) “Peers say negative things about him/her to other children.”; (f) “My child is teased or made fun of by peers”; (g) “My child is hit or kicked by other children” (0 = not true; 1 = sometimes true, and 2 = often true). (Ladd and Profilet 1996).

These indicators are measured by mothers’ report. The SECCYD also asked children about their peer aggression and victimization. We decided to use mothers’ report in part because

children tend to underreport their own aggression toward peer: only about 10 % of children reported any perpetration of peer aggression, whereas 67 % of mothers reported some indication of their children's relational aggression toward their friends. In addition, because we are interested in mothers' mental health, we would like to make sure that mothers were aware of their children's perpetration or victimization of peer aggression. Prior research has shown that mothers are likely to be aware of their children's peer aggression involvement (Shakoor et al. 2011).

Mother's education is measured as an ordinary variable at the first month interview including 1 = *less than high school*, 2 = *high school*, 3 = *some college*, 4 = *college degree*, and 5 = *advanced degree*.

We include four time-varying variables as controls. *Family income* is a composed variable by NICHD ECCRN. *Mother's partnership status* is measured as three dummy variables including married, cohabiting, and single. *Mother's weekly paid work hours* is measured based on a self-report of current employment hours. *The number of children in the household* is an ordered variable. In addition we control for three time invariant variables including maternal age at the child's birth (in years), race/ethnicity (white, black, and other race), and child's gender (girls = 1).

Analytical Plan

We employ cross-lagged SEM with fixed effects (Allison, Williams, and Moral-Benito 2017). Figure 1 presents the conceptual model. We considered the associations between children's peer aggression and mothers' mental health across third, fifth, and sixth grades where a, b, c, and d represents the cross-lagged paths. The cross-lagged models allow for examination of the primary direction of the causal influence in the association between two factors where

there are potential reciprocal effects. All analyses are controlled for time-varying indicators of mothers' weekly work hours, family income, marital status, and the number of children in the household as well as time-invariant variables of mothers' race/ethnicity, age at childbirth, and children's gender. Several complementary fit indices are used to assess the overall fit of the models, including the Comparative Fit Index (CFI) and Root Mean Square Error of Approximation (RMSEA). A CFI greater than or equal to .90 (Bentler 1990) and an RMSEA less than or equal to .08 (Browne and Cudeck 1993) indicate that the model provides an acceptable fit to the data.

[Figure 1 around here]

RESULTS

Descriptive statistics for variables in the analyses for the total sample and by maternal education are presented in Table 1. For the total sample, the average age of mothers at the focal children's birth is approximately 29 years old. Eighty-three percent are White, 11 percent are Black and 7 percent are Hispanic or other race. Six percent did not complete high school, 21 percent have a high school diploma, 33 percent have some education beyond high school, 23 percent have a 4-year college degree, and 17 percent have a degree beyond a Bachelor's degree. The average scores for mothers' depression and anger vary little across the three waves. The average scores for children's perpetration or victimization also change little across the three waves. Variation in mothers' mental health as well as children's involvement in peer aggression by SES is evident. The average scores for mothers' depression and anger are higher for those without a college degree than those with a college degree. Mothers without a college degree are more likely than mothers with a college degree to report higher scores for their children's perpetration and victimization of peer aggression.

[Table 1 around here]

Summaries of the results from cross-lagged SEM models are presented in Table 2. For maternal depression, in the total sample, children's peer victimization in third and fifth grade is positively related to mothers' depression in subsequent years respectively. Complementary fit indices show that the models are a good fit to the data ($\chi^2 = 145.26$; $df = 33$; CFI = .985; RMSEA = .065). In the total sample, controlling for mothers' age, race-ethnicity, work hours, family income, marital status, the number of children, and the child's gender, mothers' depression in third or fifth grade is positively related to children's perpetration and victimization of peer aggression in fifth or sixth grade respectively. The beta (standardized) coefficients suggest that overall, the effects of mothers' depression on children's peer aggression and victimization in subsequent years are stronger than the effects of children's peer victimization on mothers' depression in subsequent years.

These patterns differ by SES measured by mothers' education level. The complementary fit indices suggest a better fit for mothers with a college degree ($\chi^2 = 68.52$; $df = 33$; CFI = .987; RMSEA = .058) than for mothers without a college degree ($\chi^2 = 120.23$; $df = 33$; CFI = .978; RMSEA = .074). For mothers without a college degree, children's victimization of peer aggression in third grade is related to mothers' depression in fifth grade, but there are no significant associations between children's victimization in fifth grade and mothers' depression in sixth grade. There are no associations between children's perpetration of peer aggression and mothers' depression in both years. In contrast, more significant associations are found for the reverse associations: Mothers' depression in third grade is related to children's victimization in fifth grade. Mothers' depression in fifth grade is related to children's perpetration and victimization of peer aggression in sixth grade. The patterns are different for mothers with a

college degree. For the higher education group, children's perpetration of peer aggression in third grade is related to mothers' depression in fifth grade; and children's victimization of peer aggression in fifth grade is related to mothers' depression in sixth grade. We will discuss possible reasons for this finding of differences by child age in the discussion section. There are no associations between mothers' depression in third or fifth grades and children's perpetration or victimization of peer aggression in fifth or sixth grade respectively. For mothers' anger, the patterns of findings are very similar to those for mothers' depression.

In sum, the results suggest a sharp SES variation in the association between children's peer aggression or victimization and mothers' depression or anger. For mothers without a college degree, mothers' depression or anger is more likely to precede than to be affected by children's peer aggression or victimization. In contrast, for mothers with a college degree, mothers' depression or anger is not related to children's subsequent peer aggression or victimization. Children's peer aggression in third grade is related to mothers' depression or anger in fifth grade, whereas children's peer victimization in fifth grade is related to mothers' depression or anger in sixth grade.

[Table 2 around here]

We conducted supplemental analyses to examine robustness of the findings (data not shown). In the background section, we discussed prior research (Ladd 1999) showing that children's peer aggression, either perpetration or victimization, leading to more hostile or withdrawn mother-child interactions; and quality of the mother-child relationship is a key factor that affects mothers' mental health (Nomaguchi 2012; Umberson 1992). Thus, we examined whether the mother-child relationship quality might mediate the association between children's peer aggression and mothers' mental health. For the effects of children's peer aggression on

mother-child relationship strain, we found that children's perpetration of peer aggression in fifth grade was related to more mother-child relationship strain—measured using mothers' report—in sixth grade regardless of mothers' education levels. For mothers without a college degree only, children's perpetration of peer aggression in third grade was also related to more mother-child relationship strain in fifth grade. For the effects of the mother-child relationship strain on children's peer aggression, the mother-child relationship strain in third grade was related to children's perpetration of peer aggression in fifth grade among mothers with a college degree and related to victimization in fifth grade among mothers without a college degree. Strain in mother-child relationship in fifth grade was related to perpetration of peer aggression in sixth grade for mothers without a college degree only. Taken together, the mother-child relationship strain was both a contributor and an outcome of children's peer aggression, and this was more so for mothers without a college degree than mothers with a college degree. Including the mother-child relationship strain did not alter the direct associations between child peer aggression and mothers' mental health presented earlier.

DISCUSSION

As awareness of peer aggression among school-age children as a public health issue has increased (NICHD 2016), the association between children's peer aggression and mothers' mental health has important scholarly and policy implications. The main objective of the present analysis was to assess the possibility that children's peer aggression problems, either perpetration or victimization, could be experienced by mothers as parental strain which affects mothers' mental health negatively. Following prior findings in research on parental strain (Cooper et al. 2009; Nomaguchi and Brown 2011), we expected that the association might vary by SES measured by mothers' education. We also examined the possibility of the reverse association:

mothers' poor mental health is related to children's subsequent perpetration or victimization of peer aggression. Key findings of the present analyses, as we discuss in this section, contribute to the literatures of stress proliferation as well as parental strain, and have policy implications.

In the era of intensive mothering ideology, it is likely that children's problems act as a chronic stressor affecting their mothers' mental health negatively (Barr et al. 2018; Milkie, Nomaguchi, and Schieman 2018; Sutherland 2010; Wall 2010). The findings of the present analyses support this idea only for mothers with higher SES. For mothers with a college degree, children's peer aggression problems relate to their mothers' subsequent poor mental health, while mothers' poor mental health does not relate to their children's subsequent peer aggression problems. In contrast, for mothers with lower SES, the conventional idea that mothers' poor mental health leads to problems in their children's life was supported. We found that although children's victimization affects their mothers' subsequent mental health, it is more likely that mothers' poor mental health leads to their children's peer problems.

These findings are consistent with the idea that the salience of a particular stressor varies by SES (Cooper et al. 2009; Nomaguchi and Brown 2011). Differences in levels of resources by SES may lead to differences in the most salient stressors that mothers are vulnerable to. These findings also seem to go along with the notion that the intensive mothering ideology is more prone to mothers with a college degree than mothers without a college degree (Lareau, 2003). Yet, it may not mean that mothers with lower levels of education do not care about their children's peer aggression issues. Rather, because of other serious challenges that mothers with lower levels of education face in life, many of which are financial, the salience of children's peer aggression issues as a stressor may be seen as secondary. Yet, prior research did not find SES difference in the association between mothers' depression and children's externalizing or

internalizing problems (Turney 2011). These studies did not account for the effects of children's problems on mothers' mental health, which are more prevalent among higher SES mothers and thus may have suppressed the greater effects of mothers' depression on children's problems among lower SES mothers.

Theoretically, the findings of the present analyses two key insights for future research. First, children's peer aggression problems, along with other types of problems, should be included in the study of parental strain or parenting stress (Nomaguchi and Milkie 2017). Second, it is imperative to consider SES differences in dynamics of stress proliferation across generations. Given the strong interdependence between children and mothers, stressors experienced by children are likely to affect their mothers' mental health as much as stressors faced by mothers are likely to influence their children's emotional and behavioral lives. As Pearlin (1999) noted, it is critical to examine what the primary stressor—the stressor that originates the chain of other stressors—is within stress proliferation dynamics across parents and children processes to better understand how the chain of stressors can be buffered. Because of differences in economic, social, and cultural resources, the key primary stressor may vary by SES and thus programs that may help parents buffer such chain of stressors may differ by SES.

We found age differences in types of peer aggression that relate to mothers' mental health: children's perpetration of peer aggression, but not victimization, affects mothers' mental health when children are in third grade, whereas children's victimization, not perpetration, affects mothers' mental health when children are in fifth grade. We did not expect these differences by children's age. We suspect that children's aggressive behavior in third grade—i.e., ages 8 to 9—is concerning to their mothers because, as children generally acquire self-control by this stage of their lives, parents may recognize children's aggressive behavior at this age as a

sign for the lack of self-control that has potential to lead to more serious problems in the future (Hirschi and Gottfredson, 2001). In contrast, victimization of peer aggression may be more concerning for mothers as children get into preteen years when consequences of peer aggression victimization for children's mental health appear to become more serious (Olweus 1994; Rigby 1996). Differences in mothers' interpretations of children's peer dynamics and their implications for their mental health need to be investigated in future research.

Policy makers and practitioners who deal with children's peer aggression tend to encourage parents to be on the alert for any signs of bullying issues and stop them (e.g., Novak 2017). This is a reasonable recommendation as prior research has shown that it would help buffer the negative effects of bullying on children's internalizing problems if children feel it easy to talk to their parents about things that bother them (Bowes et al. 2010; Ledwell and King 2015). The findings presented here suggest that parents may need resources to do so and types of such resources may differ by SES. Parents with lower SES tend to need support to deal with their mental health issues in order to prevent them from causing their children's peer aggression involvement. Parents with higher SES tend to need support to buffer the effects of their children's peer aggression involvement on their mental health. In either case, it is critical to understand types of resources that parents may need to combat or prevent their children's peer aggression problems.

The present analysis has limitations that future research should address. First, the concepts and the measures of children's peer aggression, although they were used in prior research, could be clarified and expanded. We did not distinguish the severity of peer aggression. In addition, since the early 2000s when children in the present analyses were preteens, forms of peer aggression have expanded due to the diffusion of social media (e.g., Hinduja and Patchin

2013). The potential threat of cyberbullying today may cause greater anxiety and concern for parents than ever before. Examining various types of peer aggression in their relations to mothers' mental health is vital. Second, although the SECCYD included children and their families with diverse background characteristics living in different regions of the country, future research using a representative sample of U.S. children is warranted.

Despite the limitations, the present analysis contributes to multiple areas of research, providing important insights into social class differences in the primary stressor in stress proliferation dynamics between parents and children. It appears that resources that higher SES mothers have may buffer mothers' poor mental health from leading to children's peer aggression problems. Yet, such resources make children's peer aggression problems, when they occur, make more salient as a stressor that affect mothers' mental health negatively. In either case, parents need support to prevent or solve peer aggression problems that their children experience.

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Table 1. Descriptive Statistics for Variables in Analyses ($N = 803$)

	Range	Total Sample		No College		College Degree	
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Mother's mental health							
Depression G3	0 - 60	8.82	(8.56)	10.07	(9.14)	6.97***	(7.25)
Depression G5	1 - 60	8.65	(8.35)	9.65	(8.97)	7.15***	(7.08)
Depression G6	2 - 60	8.74	(8.71)	9.84	(9.11)	7.11***	(7.81)
Anger G3	10 - 40	13.62	(4.06)	13.97	(4.44)	13.11**	(3.36)
Anger G5	10 - 40	13.72	(4.05)	14.07	(4.45)	13.21**	(3.32)
Anger G6	10 - 40	13.87	(4.42)	14.29	(4.93)	13.26**	(3.44)
Child's peer aggression experience							
Perpetration G3	0 - 2	0.29	(0.31)	0.31	(.32)	0.26*	(.29)
Perpetration G5	0 - 2	0.28	(0.31)	0.31	(.33)	0.24**	(.28)
Perpetration G6	0 - 2	0.30	(0.34)	0.34	(.36)	0.24***	(.29)
Victimization G3	0 - 2	0.23	(0.36)	0.25	(.36)	0.16***	(.27)
Victimization G5	0 - 2	0.22	(0.34)	0.27	(.37)	0.14***	(.27)
Victimization G6	0 - 2	0.21	(0.33)	0.27	(.38)	0.17***	(.31)
Controls							
Family income G3	2.5 - 500	77.66	(68.31)	52.88	(36.67)	114.49***	(85.70)
Family income G5	2.5 - 500	86.45	(75.96)	60.05	(44.80)	125.68***	(93.82)
Number of children G3	1 - 7	2.40	(0.95)	2.44	(1.01)	2.34	(.83)
Number of children G5	1 - 7	2.45	(0.99)	2.51	(1.06)	2.37	(.88)
Weekly work hours G3	0 - 81	26.49	(18.78)	27.22	(18.77)	25.39	(18.77)
Weekly work hours G5	0 - 81	27.85	(18.62)	28.62	(18.77)	26.71	(18.37)
Married G3	0 - 1	0.78		0.70		0.89***	
Cohabiting G3	0 - 1	0.04		0.06		0.02***	
Single G3	0 - 1	0.18		0.24		0.09***	
Married G5	0 - 1	0.77		0.70		0.88***	
Cohabiting G5	0 - 1	0.05		0.07		0.01***	
Single G5	0 - 1	0.18		0.23		0.11***	
White	0 - 1	0.83		0.77		0.91***	
Black	0 - 1	0.11		0.16		0.02***	
Hispanic or other race	0 - 1	0.07		0.07		0.06	
Girls	0 - 1	0.50		0.48		0.52	
Mothers' age at childbirth	18 - 46	28.75	(5.50)	26.86	(5.55)	31.55***	(4.05)
Mothers' education at childbirth	1 - 5	3.24	(1.15)				
< high school	0 - 1	0.06					
High school	0 - 1	0.21					
Some college	0 - 1	0.33					
College degree	0 - 1	0.23					
Advanced degree	0 - 1	0.17					

Notes. Differences by maternal education are significant at * $p < .05$; ** $p < .01$; *** $p < .001$ (t-test). "G3" stands for third grade; "G5" stands for fifth grade; and "G6" stands for sixth grade.

Table 2. Cross-Lagged Associations between Children's Peer Aggression Experience and Mothers' Mental Health

			Total Sample			No college degree			College Degree		
			N = 803			N = 480			N = 323		
Mothers' Depression			b	SE	Beta	b	SE	Beta	b	SE	Beta
Child perpetration G3	→	Mother depression G5	1.340	(.820)	.049	-.025	(1.124)	-.001	3.560**	(1.141)	.145
Child victimization G3	→	Mother depression G5	1.988*	(.781)	.078	3.534***	(1.011)	.141	-1.028	(1.227)	-.040
Child perpetration G5	→	Mother depression G6	1.415	(.868)	.051	1.795	(1.131)	.065	.935	(1.333)	.034
Child victimization G5	→	Mother depression G6	1.691*	(.801)	.066	.763	(.993)	.031	3.669**	(1.368)	.128
Mother depression G3	→	Child perpetration G5	.002*	(.001)	.061	.002	(.001)	.069	.001	(.002)	.031
Mother depression G3	→	Child victimization G5	.004**	(.001)	.091	.004**	(.002)	.102	.002	(.002)	.054
Mother depression G5	→	Child perpetration G6	.003**	(.001)	.076	.004**	(.001)	.104	.001	(.002)	.020
Mother depression G5	→	Child victimization G6	.004***	(.001)	.091	.005***	(.001)	.116	.002	(.002)	.051
$\chi^2(df)$			145.261 (33)			120.230 (33)			68.516 (33)		
CFI			.985			.978			.987		
RMSEA			.065			.074			.058		
Mothers' Anger			b	SE	Beta	b	SE	Beta	B	SE	Beta
Child perpetration G3	→	Mother anger G5	1.357**	(.437)	.103	1.177	(.619)	.084	1.727**	(.575)	.150
Child victimization G3	→	Mother anger G5	1.084**	(.415)	.088	1.344*	(.553)	.108	.793	(.619)	.065
Child perpetration G5	→	Mother anger G6	.385	(.444)	.027	.654	(.610)	.043	-.110	(.613)	-.009
Child victimization G5	→	Mother anger G6	1.431***	(.404)	.111	1.110*	(.527)	.084	1.920**	(.621)	.152
Mother anger G3	→	Child perpetration G5	.006**	(.002)	.081	.006*	(.003)	.088	.005	(.004)	.061
Mother anger G3	→	Child victimization G5	.010***	(.003)	.116	.010**	(.003)	.123	.008	(.004)	.094
Mother anger G5	→	Child perpetration G6	.011***	(.002)	.134	.013***	(.003)	.166	.005	(.004)	.056
Mother anger G5	→	Child victimization G6	.005*	(.002)	.055	.006*	(.003)	.073	.002	(.004)	.016
$\chi^2(df)$			167.670 (33)			125.407 (33)			77.588 (33)		
CFI			.981			.976			.983		
RMSEA			.071			.077			.065		

Notes: N = 803. All models were controlled for time-varying variables of mother's weekly work hours, family income, marital status, and the number of children in the household; and time-invariant variables of mother's race/ethnicity, age at childbirth, and child's gender.

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

Figure 1. Cross-Lagged Model of Children's Peer Aggression Experience and Mothers' Mental Health

