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Cumulative socio-contextual risk and child abuse potential in parents of young children: Can
social support buffer the impact?

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Dr. McGoron's time is support by the National Institute of Mental Health (grant #
K01MH110600)

Abstract

Child abuse potential refers to characteristics and practices closely linked to child abuse. Past investigations document that the number of risk factors parents experience is a correlate of child abuse potential. The purpose of this investigation was to test a model with multiple domains of risk including cumulative socio-contextual risk, parenting locus of control, children's externalizing behavior problems, social support, and child abuse potential. Using self-report data from eighty-seven mothers of children between the ages of 1-5 years old, bivariate correlations and linear regression analyses revealed that cumulative socio-contextual risk was positively associated with child abuse potential and that this association remained statistically significant when controlling for parenting locus of control and child externalizing behavior problems. Additionally, social support moderated the association between cumulative risk and child abuse potential.

Keywords: Child abuse potential, cumulative risk, social support, child externalizing behavior problems, parenting locus of control

**Cumulative socio-contextual risk and child abuse potential in parents of young children:
Can social support buffer the impact?**

In 2016, authorities identified 676,000 children in the United States as victims of maltreatment (U.S. Department of Health and Human Services [DHHS], 2018). Rates of documented child maltreatment in young children are high with the number of victims being between 9.9-11.9 per 1,000 children ages 1-5 (U.S. DHHS, 2018). Importantly, child maltreatment is associated with increased rates of mental health problems in childhood and adolescence (Vachon, Krueger, Rogosch & Cicchetti, 2015). Given the prevalence and consequences of child abuse, a better understanding of the processes that increase parents' likelihood of being physically abusive would benefit preventative practices.

The conceptual model presented in Figure 1 guided the present investigation. The goal of this work is to better understand processes that lead to heightened child abuse potential, an established and meaningful construct that includes parental characteristics proximally linked to physical abuse (see Milner, 1994), in parents of young children (ages 1-5). Three theoretical approaches guided model creation. First is the cumulative risk (CR) approach, which posits that no one risk factor will negatively impact adjustment as much as an accumulation in the *number* of risk factors (e.g., Aro et al., 2009; Trentacosta et al., 2008). Second, the buffering hypothesis (Lakey & Cohen, 2000), which suggests that social support plays a protective role against stress. Third, the work of Belsky (1993), which suggests the need to consider multiple domains of risk for child abuse. Based on these theories, we anticipated an association between an accumulation of risk and child abuse potential. We further anticipated that social support would moderate this association. Moreover, we examined these anticipated associations while accounting for two other domains of risk for child abuse: parenting locus of control and child externalizing

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problems. In the sections below, we review the focus on child abuse potential rather than substantiated or parent-reported child abuse. Next, we review risk factors for child abuse/child abuse potential. Finally, literature leading to expectations that social support serves as a moderator is considered.

Measuring child abuse potential rather than substantiated or parent-report abuse

There are three approaches to studying child abuse and each approach has its own limitations. First, investigators can consider substantiated reports of child abuse by accessing official state records. Second, investigators can ask parents to disclose use of abusive parenting practices. Finally, investigators can measure a constellation of factors, known as *child abuse potential*, that are proximally related to abusive practices (Milner, 1994). A limitation of the first two approaches is under identification of child abuse. The number of instances of substantiated abuse using the first approach is likely an underestimation of actual abuse as child welfare agencies do not identify all victims and not all reported instances of maltreatment are substantiated (Ammerman, 1998; Chaffin & Valle, 2003). Asking parents to disclose abusive practices also leads to an under estimation as parents are unlikely to endorse using abusive practices (Ammerman, 1998; Chaffin & Valle, 2003). Parent reluctance to disclose abusive practices is understandable as there is negative social stigma associated with abusive parenting practices. Moreover, researchers are mandated reporters of abuse and parents' have valid concerns about reports to authorities if they endorse abusive practices (Ammerman, 1998).

Measuring *child abuse potential* overcomes barriers associated with measuring substantiated or parent-reported abuse. While measuring child abuse potential has its own limitations, including questions about its factor structure (Walker & Davies, 2010), it is a well-established and meaningful approach. To note, the intent of child abuse potential is specific to

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child *physical* abuse, not neglect; neglect is the most common form of substantiated maltreatment (U.S. DHHS, 2018). Milner (1994) established the child abuse potential construct noting that there are measurable characteristics that differentiate physically abusive parents from non-abusive parents. Specifically, physically abusive parents are more likely to be easily angered, have conflict filled interpersonal relationships, believe in more firm discipline, and have negative views of their children compared to parents who are at less risk for physical abuse. Collectively, Milner calls the presence of these parental characteristics parents' *child abuse potential* (Milner, 1994).

Importantly, child abuse potential scores differentiate abusive and non-abusive parents (Walker & Davies, 2010), and predict future abuse (Chaffin & Valle, 2003). Children of parents with high child abuse potential also have similar outcomes to those who have experienced substantiated child abuse, such as having less self-control, fewer adaptive skills, and poorer academic functioning (Freer, Sprang, Katz, et al., 2017; Henschel, de Bruin & Mohler, 2014). In sum, child abuse potential is an alternative to directly measuring substantiated abuse or parents' direct reports of abuse and provides an opportunity to measure factors that *closely* contribute to physical abuse.

Risk Factors for Child Abuse/Child Abuse Potential

There are numerous risk factors for child abuse/abuse potential. The seminal work of Belsky (1993) suggested there are multiple domains of risk to consider in understanding the etiology of child maltreatment. These domains broadly included characteristics of parents, characteristics of children, characteristics of the family and family interactions, stress inducing factors, and societal factors. In a large meta-analytic review, Stith et al. (2009) considered 39 risk factors and found support for small-large effect sizes for a myriad of risk factors from multiple

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domains. While inclusion of all possible risk factors for child abuse is beyond the scope of this investigation, we considered three domains of risk for child abuse potential: *parents' perceptions*, *child characteristics*, and *socio-contextual risk*.

In terms of *parents' perceptions*, one important construct is parenting locus of control, which refers to parents' beliefs about the balance of power and level of control in the parent-child relationship. Rodriguez and Richardson (2007) found that parents with a more external locus of control had higher child abuse potential scores. Children's externalizing behavior is an important *child characteristic* that is associated with child abuse. Children who are more prone to misbehaving are difficult for parents to manage and may evoke harsh discipline (Patterson, Reid, & Dishion, 1998). Begle and colleagues (2010) reported a moderate, positive correlation between children's externalizing behavior problems and child abuse potential. Finally, within the *socio-contextual* domain, there are multitudes of factors that create stress for families and relate to child abuse/child abuse potential. These include, but are not limited to, low income status (Wilson, Morgan, Hayes, & Herman, 2004), not graduating high school (Murphey & Braner, 2000), being a single parent (Merritt, 2009), becoming a parent at a young age (Afifi, 2007), and exposure to violence (Casanueva & Martin, 2007; Guterman et al., 2009). Given the wide array of risk factors for child abuse/abuse potential, modeling multiple areas of risk can be challenging. The cumulative risk approach, discussed next, allows for inclusion of multiple risk factors while taking into account the reality that risk factors often co-occur.

The Cumulative Risk Approach to Understanding Risk Factors for Child Abuse Potential

The cumulative risk approach assumes that variability exists across families in the actual risks that accumulate; the actual risks families face are heterogeneous. Importantly, no one area of risk will negatively impact social adjustment as much as an increase in the *number* of risk

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factors experienced. Patwardhan, Hurley, Thompson, Mason, & Ringle (2017) reported cumulative risk is associated with child maltreatment for families receiving family preservation services. Moreover, Solomon, Ashberg, Peer, and Prince (2016) found an association between cumulative risk and recidivism of parents with substantiated child maltreatment. Importantly, three investigations have reported that an accumulation of risk is associated with heightened child abuse potential.

In an investigation of drug-abusing mothers and their infants, Nair, Schuler, Black, Kettinger, & Harrington (2003) examined an accumulation of environmental risk in relation to parents' child abuse potential. They computed a cumulative risk index based on the presence/absence of depression, intimate partner violence, nondomestic violence, family size, homelessness, incarceration, single parent status, negative life events, and drug use severity. Mothers classified as at-risk in five or more areas had higher child abuse potential scores than parents classified as at-risk in only 1-2 areas. While this study showed that an accumulation of socio-contextual risk is associated with child abuse potential, the sample was restricted to a very high-risk sample of drug abusing mothers, which limits generalizability of findings.

Lamela and Figueiredo (2018) examined the association between cumulative risk and child abuse potential in a large sample ($n = 796$) of parents with school-aged children in Portugal. The cumulative risk index was comprised of diverse risk factors including parents' marital status, number of children, education, report of family income, employment status, physical maltreatment as a child, physical maltreatment as an adolescent, and reported psychological distress. Like the findings of Nair and colleagues (2003), a threshold effect emerged as child abuse potential was substantially higher for parents with six or more risk factors.

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Begle and colleagues (2010) also examined the role of cumulative risk in increasing child-abuse potential, but in a large ($n = 610$) community sample of parents of young children. Cumulative risk scores were based on 13 identified areas of risk for abuse, including parents' demographic characteristics (e.g., parents' age), parents' perceptions of control and parental satisfaction, environmental risk (e.g., neighborhood characteristics), child characteristics (e.g., externalizing behavior), and quality of parent-child interactions. Cumulative risk scores explained a statistically significant portion of variance of child abuse potential.

Although the Begle and colleagues (2010) sample was large, several limitations should be noted. First, the sample was considerably low risk for child abuse as *no parents* were over the clinical cut-off for child abuse potential. Moreover, the cumulative risk index included various domains of risk (e.g., socio-contextual risk, parents' perceptions), thus, interpreting the impact of a specific risk domain is challenging, as it is not clear if one domain of risk was driving the cumulative risk effect. Additionally, neither Nair and colleagues (2003), Lamela and Figueiredo (2018), nor Begle and colleagues (2010) considered moderators of the association between cumulative risk and child abuse potential. The current investigation adds to previous work in three important ways. First, we computed a cumulative risk index using only risk factors in the socio-contextual domain; this allowed for interpretation about the importance of these risk factors in isolation from other risk domains. Second, while the cumulative risk domain was limited to socio-contextual risk, the model tested also includes domains of risk for parents' beliefs and perceptions (i.e., parenting locus of control) and child characteristics (i.e., child externalizing behavior problems). This allowed for examination of the unique role cumulative socio-contextual risk plays beyond other domains of risk. Third, we examined one possible moderator of this association: social support.

Social Support as a Potential Moderator of Risks Associated with Child Abuse Potential

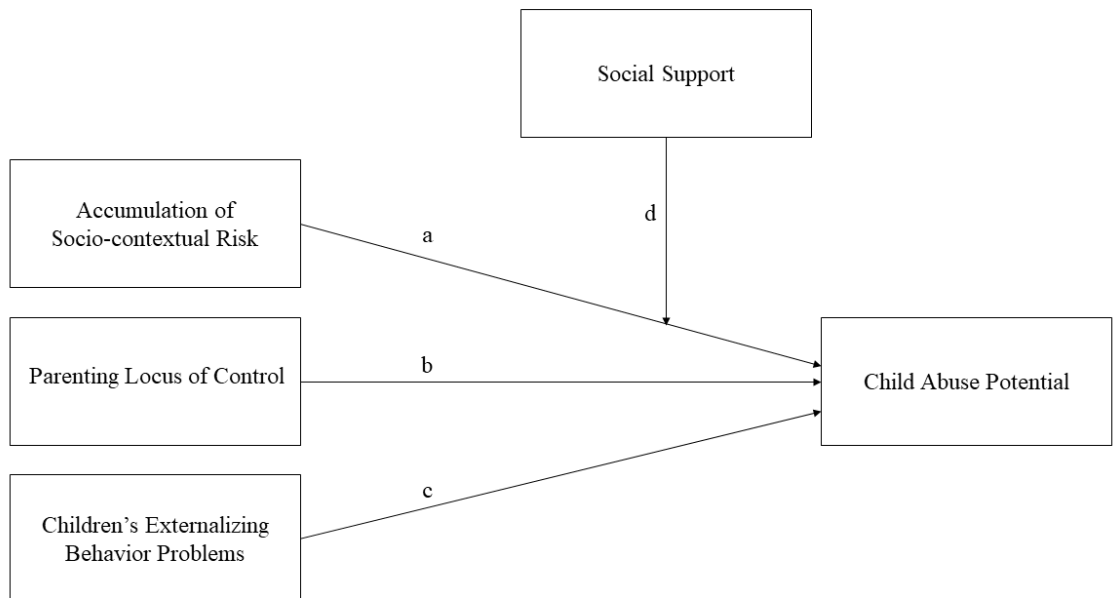
An accumulation of socio-contextual risk can create stress and adversity for parents, but social support may buffer the impact of exposure to risk on parents' child abuse potential (Lahey & Cohen, 2000). Specifically, the presence of supportive relationships can bolster individuals' positive self-esteem, provide helpful information regarding stressful events, provide needed companionship for leisure activities to reduce stress, and provide instrumental support (i.e., help overcoming stressful events). Consistent with theoretical expectations, inadequate social support has been associated with higher child abuse potential (Budd, Heilman, & Kane, 2000). Budd and colleagues (2000) examined correlates of child abuse potential among high risk adolescent mothers; adolescent mothers who scored higher on child abuse potential were less satisfied with the social supports they had available to them, even when taking into account other areas of risk. There has not yet been an investigation to examine if social support *moderates* the impact of cumulative socio-contextual risk on child abuse potential. Quite possibly, the presence of social support can decrease stress associated with parenting, especially for parents facing additional stress and adversity, which may decrease child abuse potential for parents facing an accumulation of socio-contextual risk. Understanding this process would be important for those working with high risk families as it may identify an area for intervention efforts.

The Present Investigation

Relying on a diverse community sample of mothers of young children, we considered the impact of cumulative socio-contextual risk, parenting locus of control, children's externalizing behavior problems, and social support on child abuse potential. As depicted in Figure 1, more socio-contextual risk, an external parenting locus of control, and higher levels of children's externalizing behavior problems were expected to be associated with higher child abuse potential

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(Figure 1a, b, c). Importantly, we evaluated the impact of socio-contextual risk, parenting locus of control, and children's externalizing behavior problems simultaneously, thus controlling for the other risk factors. As a result, we expected socio-contextual risk to be associated with child abuse potential *beyond* parenting locus of control and child externalizing behavior problems. Finally, we expected social support to moderate the association between cumulative socio-contextual risk and child abuse potential. Specifically, we anticipated the presence of social support would dampen the impact of accumulation of socio-contextual risk on child abuse potential (Figure 1d).



Method

Participants

All data collection procedures and materials were Institutional Review Board approved. We recruited a diverse group of mothers of young children. Eighty-seven mothers of children between 1 and 5 years of age participated. All mothers that agreed to participate fully completed the study. No participants' data was excluded from final analyses. Although four of the

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participants were grandmothers who were raising their young grandchildren, we refer to all participants as mothers. We did not recruit fathers for this investigation as fathers may have a different pattern of risk factors for child abuse (see Stith et al., 2009) and this study was not adequately powered to detect these differences. See Table 1 for participants' demographic characteristics.

[insert Table 1 here]

Procedures

Mothers were recruited from five local childcare centers and through on-line advertising in New Orleans, Louisiana and surrounding suburban areas. The New Orleans area is large and economically diverse. We aimed to recruit at childcare centers serving diverse economic populations by approaching centers in economically diverse areas of the city (i.e., neighborhoods in economically depressed areas of the city and suburban areas of the city). Recruitment at childcare centers included posting flyers, sending fliers home with parents, center directors emailing parents, and recruiting during drop-off/pick-up times. We also posted information about the study on local on-line classified advertisement. Mothers expressing interest in participating were given more information about the project over the phone or in person. If mothers were still interested in participating, a visit (conducted by the study's first and second authors) was scheduled. Most visits occurred in mothers' homes. Interviewers obtained informed consent from mothers prior to completing the interview. Mothers completed a set of self-report questionnaires. Participants were compensated \$40 for their time.

Measures

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Cumulative socio-contextual risk. A cumulative socio-contextual risk index was constructed using the approach of Trentacosta et al. (2008). Cumulative risk indicators included a variety of socio-contextual risk factors including: 1) low household income [per mothers' report], 2) low maternal educational attainment, 3) single parent status, 4) pregnancy with first child during adolescence, 5) home overcrowding, 6) intimate partner violence, 7) neighborhood dangerousness, and 8) violence against family and friends. In Table 2, there is detailed information about how we measured each risk factor and the threshold of "risk" for each stressor. We dichotomized each risk indicator such that '1' indicated the presence of risk and a score of '0' reflected the absence of risk. An overall cumulative risk index was computed by summing the 8 dichotomized risk indicators. Possible scores range from 0-8 with higher scores reflecting greater cumulative socio-contextual risk (see Table 3).

[Insert Table 2 here]

Parenting locus of control. Mothers reported on their parenting locus of control by completing the the Parental Locus of Control Scale (PLOCS; Campis, Lyman, & Prentice-Dunn, 1986). The PLOCS is 47-item parent self-report questionnaire in which mothers rate their level of agreement with statements regarding control in the parent-child relationship (e.g. "If your child tantrums no matter what you try, you might as well give up"). Items are rated on a 5-point Likert scale ranging from "1 = strongly disagree," to "5=strongly agree." Lower scores reflect an internal parenting locus of control and higher scores reflect an external locus of control. We averaged the items in order to create a parenting locus of control score. Scores were found to be generally low (see Table 3). In the current study, internal consistency estimates were adequate (Cronbach's $\alpha = .77$).

Children's externalizing behavior problems. Mothers completed The Child Behavior Checklist for ages 1 ½ to 5 (CBCL; Achenbach & Rescorla, 2000). Mothers rated 100 items, including the 26-item externalizing subscale, on a 3-point Likert scale (0 = not true, 1 = sometimes/somewhat true, 2 = very true/mostly true) indicating how much each statement describes their child's behavior. The CBCL is a widely used, reliable measure of children's externalizing behavior problems (Achenbach & Rescorla, 2000). Furthermore, there is extensive support for the validity of the CBCL with Cronbach's alpha coefficients ranging from .89 to .96 for the externalizing subscale (Achenbach & Rescorla, 2000). In the present study, excellent internal consistency was found (Cronbach's $\alpha = .89$). We averaged the externalizing subscale items; reports of children's externalizing behavior problems were low (see Table 3).

Social support. Mothers reported their perception of social support through the Interpersonal Support Evaluation List (ISEL; Cohen & Hoberman, 1983). The ISEL is a self-report measure designed to assess social resources available for coping with stressful circumstance (Cohen & Hoberman, 1983). The ISEL contains 40 items measuring perceptions of the availability and reliability of supportive social relationships, (e.g. "There is at least one person I know whose advice I really trust"). Respondents rate their level of agreement with each item on a 4-point Likert scale (3 = definitely true to 0 = definitely false). Wording of some of the items was changed to be specific to parents. In the present study, parents' responses demonstrated strong internal consistency (Cronbach's $\alpha = .93$). To create the social support scale, we first reverse coded some items so that a higher rating on every item indicated more social support. Next, responses to the 47-items were averaged. Scores were moderately high (see Table 3).

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Child abuse potential. Parents completed the Child Abuse Potential Inventory (CAPI; Milner, 1994). The CAPI, specifically the abuse subscale (agree or disagree responses), assesses the presence of dispositional and interpersonal characteristics that are common among physically abusive parents. To create child abuse potential scores, each of the 77 abuse items is assigned a weighted value based on scoring guidelines and summed (Milner, 1994; see Table 3 for descriptive statistics). There are two established clinical cut-off scores for the CAPI. The original clinical cut off is 215. Concerns that this cutoff was too stringent led to identification of a lowered risk cutoff score of 166. Using the conservative cutoff score of 215, four mothers (5%) met the criteria for clinically significant abuse risk. Using the clinical cut off score of 116, ten mothers (11%) were above the clinical cutoff.

Data Analysis

First, bivariate correlations were computed to ensure that an accumulation of contextual risk, children's externalizing behavior problems, and parents' parenting locus of control were positively associated with child abuse potential. Second, we computed hierarchical linear regression equations to test the unique effects of cumulative socio-contextual risk, parenting locus of control, and child externalizing behavior problems on child abuse potential. We entered parenting locus of control and children's externalizing behavior problems into step 1 and cumulative socio-contextual risk into step 2. After controlling for child externalizing behavior and parenting locus of control, we expected cumulative socio-contextual risk to explain statistically significant variance associated with child abuse potential. Hierarchical regression models allow for an evaluation of the incremental variance explained by an additional construct, in this case cumulative socio-contextual risk. Finally, the last set of analyses considered if social support moderated this association. Specifically, using the PROCESS macro (Hayes, 2013) in

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SPSS, we empirically tested social support as a moderator of the association between cumulative socio-contextual risk and child abuse potential. PROCESS is a statistical tool that creates a bias-corrected 95 percent confidence interval of the interaction term (i.e., cumulative risk x social support) using bootstrapping. Bootstrapping is a resampling technique. The original sample size is treated as small representation of the population and is then “resampled” with replacements thousands of times with the statistic of interest being continuously calculated (see Hayes, 2013) with support for moderation emerging when the upper and lower limits of the CI for the interaction term does not cross zero. For the present analyses, we requested 10,000 resamples. We used the default settings of listwise deletion for both the regression analysis and the PROCESS analysis.

Results

Bivariate associations between socio-contextual risk and child abuse potential

We computed bivariate correlations to test the expected associations between cumulative socio-contextual risk, parenting locus of control, children’s externalizing behavior problems and the dependent variable, child abuse potential. Consistent with expectations, cumulative socio-contextual risk was positively correlated with child abuse potential (see Table 3: $r = .32, p < .01$). Correlational analyses (see Table 3), also indicated that parenting locus of control and child externalizing behavior problems were both positively associated with child abuse potential.

[Insert Table 3 Here]

Is cumulative risk correlated with child abuse potential beyond the effects of parenting locus of control and child externalizing behavior?

We computed one hierarchical regression analysis to evaluate if cumulative socio-contextual risk would be associated with child abuse potential beyond parenting locus of control

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and child externalizing behavior problems (see Table 3). Results indicated that children's externalizing behavior problems (see Table 4; $\beta = .34, p < .01$), but not parenting locus of control, was associated with child abuse potential and explained statistically significant portions of the variance (see Table 4; $R^2 = .18; p < .01$). Next, and consistent with expectations, the beta coefficient associated with socio-contextual risk was statistically and significantly associated with child abuse potential ($\beta = .27, p < .01$). Furthermore, an accumulation of socio-contextual risk explained a significant additional portion of the variance associated with child abuse potential beyond the variance explained by child externalizing behavior problems and parent locus of control ($R^2\Delta = .07, p < .01$).

[Insert Table 4 Here]

Parent social support moderates the association between cumulative risk and child abuse potential

Using PROCESS (see Hayes, 2013), social support was examined as a potential moderator of the association between cumulative risk and child abuse potential. Again, to test the conceptual model in Figure 1, we statistically controlled for the influence of parenting locus of control and child externalizing behavior problems. As shown in Table 5, the cumulative risk x social support interaction term was statistically significant (effect = -20.11, $p < .05$; LLCI = -39.00; ULCI = -1.21). Figure 2 visually depicts this interaction. Results indicated that at low levels of social support, the simple slope of the association between cumulative risk and child abuse potential was statistically significant. However, the simple slope was not statistically significant at high levels of social support, indicating that individuals who had high levels of social support did not increase in child abuse potential as the number socio-contextual risks increased.

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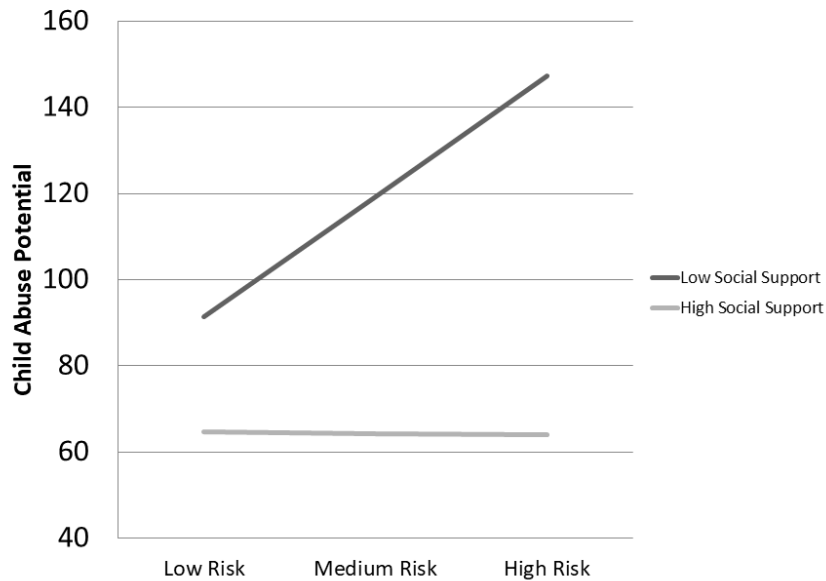


Figure 2. Graphical decomposition of the interaction of social support and child abuse potential on child abuse potential

*Low (i.e., 1 SD below the mean), Effect = 16.80, SE = 5.22, $p < .001$, CI = 6.42-27.18; High (i.e., 1 SD above the mean), Effect = -.19, SE = 5.97, $p = .97$, CI = -12.11-11.72

[Insert Table 5 Here]

Discussion

Physical child abuse is a highly prevalent, yet grossly underreported crime, with devastating consequences for children's social and emotional development (Vachon et al., 2015). Understanding characteristics of parents at risk for abusing children may help identify targets for preventative interventions. Child abuse potential represents an important proxy for child abuse because individuals may be more honest in reporting characteristics associated with risk for abuse rather than actual abusive practices. The goal of the current study was to evaluate the extent to which cumulative socio-contextual risk was associated with child abuse potential. The following sections will discuss the association among cumulative risk, parenting locus of control, children's externalizing behavior problems, and child abuse potential. Next, we discuss the role

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of social support in buffering the association between cumulative risk and child abuse potential. Finally, we will highlight clinical considerations and limitations.

Parent, child, and socio-contextual domains of risk in relation to child abuse potential

Consistent with previous studies (e.g., Begle et al., 2010) cumulative risk was associated with higher child abuse potential scores. This association was small to moderate in strength. Unlike past investigations, however, the cumulative risk index only included areas of socio-contextual risk. Computing the cumulative risk index in this focused way did not weaken the association with child abuse potential. Moreover, the statistical association between cumulative socio-contextual risk and child abuse potential persisted even after accounting for parenting locus of control and child externalizing behavior. Experiencing an accumulation of socio-contextual risk is likely stressful and may create distress in parents, thus heightening the chances of abuse. These parents are in need of support, resources, and intervention.

Quite surprisingly, mothers' perceptions of parenting control were unrelated to their child abuse potential when accounting for child externalizing behavior problems and cumulative risk. This suggests that mothers with high child abuse potential may feel very efficacious in their parenting. There is a need for additional research to clarify the role of mothers' own cognitive appraisals on child abuse potential. Consistent with previous research, however, higher levels of child externalizing problems was positively associated with higher child abuse potential scores. These results underscore findings that managing children's externalizing behavior is a source of stress for parents (Williford, Calkins, & Keane, 2007). Patterson, Reid, and Dishion (1998) argue that children with elevated levels of externalizing behaviors are likely to evoke harsh and hostile parenting practices, placing them at risk for physical abuse. Parents of children with externalizing behavior problems are in need of guidance to promote children's best behavior

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without using abusive discipline practices. Such parents may benefit from evidence-based parent training program that reduce externalizing behavior problems and promote positive parenting (e.g., The Incredible Years Program; Menting, de Castro, & Matthys, 2013). We note, however, that the present investigation is cross-sectional, and thus cannot draw inferences about the direction of this effect.

Social support buffers the association between cumulative contextual risk and child abuse potential

While investigations using a cumulative risk framework often include low social support as an area of risk (e.g., Begle et al. 2010), we considered the possibility that social support may buffer the impact of risk (Lakey & Cohen, 2000). Consistent with the buffering model, more social support reduced the impact of contextual stressors on child abuse potential. That is, cumulative socio-contextual risk was not associated with child abuse potential for mothers experiencing more social support as compared to mothers experiencing low levels of social support. Specifically, for parents that reported levels of social support that were one standard deviation above the sample mean, there was no association between cumulative risk and child abuse potential. For low levels (i.e., one standard deviation below the mean) of social support, more cumulative risk positively related to child abuse potential.

Mothers facing an accumulation of risk likely experience more challenges, stressors, and day-to-day hassles than mothers with less cumulative risk. For high-risk mothers, having access to supportive social relationships may decrease the toll these stressors have on mothers' well-being. In other words, supportive resources provide mothers with an emotional and practical break from child rearing responsibilities and a resource for overcoming daily challenges and hassles (e.g., transportation if car is broken).

Clinical Considerations

Based on our findings, buttressing parents' ability to form social support networks may buffer the impact of socio-contextual risk and reduce parents' child abuse potential. For those that provide clinical/preventative services to families, these results suggest there may be a benefit to directly screening for social support and incorporating building social support networks into clinical and case management plans. Past investigations support delivering prevention programs to promote social support at the individual, group, and community level. At the individual level, Stubbs and Achat (2016) described a nurse delivered home visiting program that met with mothers approximately twice per month. Parents' perceptions of social support were assessed at baseline and the program aimed to help mothers make connections in the community. Another approach is creating support groups that allow parents to make direct connections to other parents. Falconer, Haskett, McDaniels, Dirkes, & Siegel (2008) described the program Circle of Parents, a support group open with the aim of preventing child maltreatment. A major goal of the program is reducing parents' sense of social isolation; parents gain the benefits of a social support system through weekly meetings. Finally, the work of McDonnell, Ben-Arieh, and Melton (2015) demonstrates the positive impact of a community-based effort. The Strong Communities program is a large, community-based initiative to prevent child maltreatment and child injuries. The initiative aligned community members (e.g., government, schools, business, and churches) around the idea of monitoring child safety. Informational services were provided to parents of young children and activities (e.g., playgroups) were organized to build social support networks. Evaluation showed the initiative had a positive impact on parents' reported social support and reduced maltreatment.

Limitations and Future Directions

There are multiple study limitations to note. First, the sample size was small, limiting power to detect small or medium effects and increasing the likelihood of Type II error. Second, methodological limitations exist in that mothers' provided reports for all constructs, which increases the possibility that the magnitude of the associations were inflated due to shared method variance. Since mothers reported on all constructs, all associations were likely to be similarly inflated. Third, we measured all constructs at one time point, limiting conclusions about how these processes unfold overtime. There is thus a need to examine these findings using a longitudinal design and larger sample.

Conclusion

In conclusion, this investigation adds to the literature documenting an association between cumulative risk and child abuse potential and extends the literature in important ways with clear clinical implications. Parents' experience of an accumulation of risk, even when risk is limited to socio-contextual areas, is positively associated with child abuse potential, even after accounting for other domains of risk. The presence of social support, however, diminishes this association. While there is a need to further investigate the moderating role of social support on the association between cumulative risk and child abuse potential, results suggest assessing and strengthening parents' social support is an important part of decreasing child abuse potential for high-risk families.

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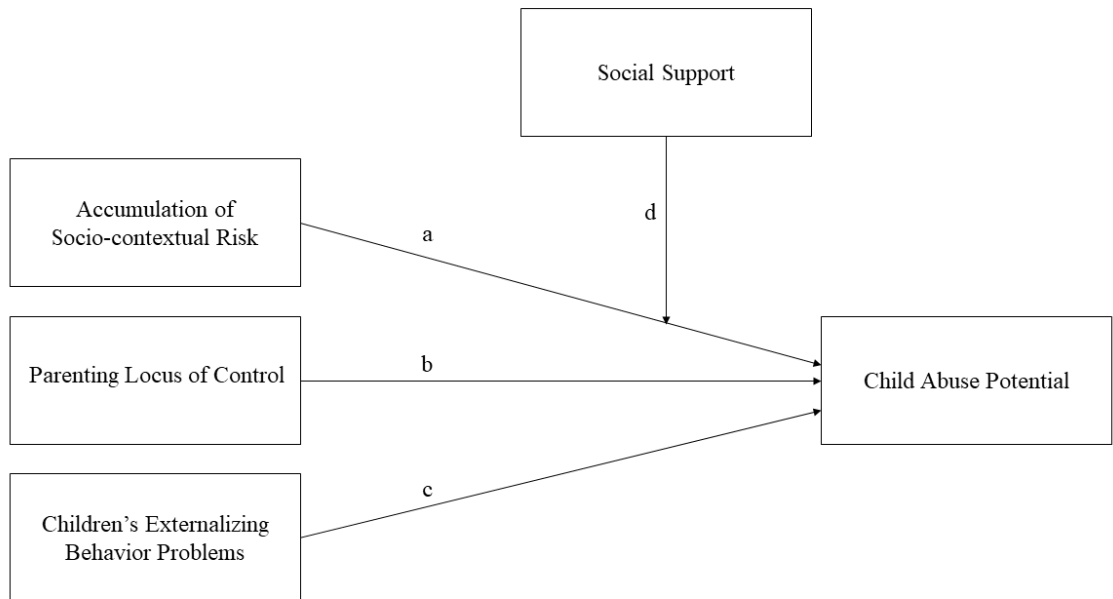
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Figure 1

Hypothesized model depicting the buffering impact of social support on child abuse potential while controlling for known risk factors for child abuse potential



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Table 1

Participants' demographic characteristics (n = 87)

	<i>n (%)</i>	<i>M(SD)</i>
Mothers' age (in years)	-----	32.05 (7.91)
Children's age (in months)	-----	37.4 (11.3)
Children's sex		
Male	55 (63.2)	
Female	32 (36.8)	
Mothers' race and ethnicity*		
African American	50 (57.5)	
White	33 (37.9)	
Asian	5 (5.7)	
Indian/Middle Eastern	2 (2.3)	
Native American	2 (2.3)	
Hispanic	5 (5.7)	
Mothers' Relationship Status		
Single	45 (51.7)	
Married	33 (37.9)	
Living with a romantic Partner	9 (10.3)	
Mothers' Work Status		
Not working, looking for work	11 (12.6)	
Working Full-time	43 (49.4)	
Working Part-time	15 (17.2)	
Temporary or contractual work	5 (5.7)	
Not working, not looking for work	13 (14.9)	

**Please note, parents were able to select more than 1 race and ethnicity, thus percentages add up to more than 100*

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Table 2

Description and Prevalence of Socio-contextual Risk Variables

<u>Variable</u>	<u>How Measured</u>	<u>At Risk Defined</u>	<u>n (%) At Risk</u>
1. Mother's Education	Mother's report of highest level of education	Did not graduate high school or received a GED and did not complete any other education	11 (12.6%)
2. Mother's Age At First Birth	Mother's report of age at first birth	<= 19 year of age at first birth	28 (32.2%)
3. Relationship Status	Mother's report of relationship status	Not being married or living with a romantic partner	45 (51.7%)
4. Household Income	Mother's report of total household income/ poverty rate based on number of people income supports	<=2.0, an income twice the amount of the poverty level	49 (56.3%)
5. Home Overcrowding	Number of people living in household at least 3 days per week/ number of rooms in home (Beagle et al., 2010)	Score >=.77*	12 (13.8%)
6. Neighborhood Dangerousness	Me and My Neighborhood Questionnaire (Trentacosta et al., 2008) 9 items (e.g. "You hear about a shooting near your home") scale ranging from "1 = never" to "4 = often"	Score>=2.03*	11 (12.6%)
7. Violence Against Family & Friends	Me and My Neighborhood Questionnaire (Trentacosta et al., 2008) 11 items (e.g. "A family member got robbed or mugged") scale ranging from "1 = never" to "4 = often"	Score>=1.49*	10 (11.5%)
8. Intimate Partner Violence	Conflict Tactics Scale-Short Form (Straus & Douglas, 2004) 16 items assessing physical violence by mother (e.g. "I punched or kicked or beat-up my partner") or intimate partner toward mother (e.g. "my partner punched or kicked or beat me-up")	Score > 0 (i.e., any reports of IPV)	22 (25.3%)

Cut-off score represents the top quartile of the sample distribution on that variable

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Table 3

Summary of Descriptive Statistics and Bivariate Correlations among Study Variables

	Descriptive Statistics		Correlations			
	<i>M (SD)</i>	<i>Range</i>	<u>1.</u>	<u>2.</u>	<u>3.</u>	<u>4.</u>
1. Cumulative Socio-contextual risk	2.16 (1.60)	0-8	-----			
2. Parenting Locus of Control	2.29 (.34)	1.51-2.96	.04	-----		
3. Children's Externalizing Behavior Problems	.54 (.33)	0-1.29	.14	.42**	-----	
4. Social Support	2.42 (.42)	1.08-30	-.18	-.34**	-.28**	-----
5. Child Abuse Potential	94.32 (71.95)	9-401	.32**	.29**	.40**	-.52**

*p < .05; **p < .001

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Table 4

Hierarchical Regressions Examining the Effect of Parenting Locus of Control, Child Externalizing Behavior Problems, and Accumulation of Socio-Contextual Risk on Child Abuse Potential

	B	<i>B</i>	<i>t</i>	<i>p</i>	R ² Δ
<u>Step 1:</u>					.18**
Parenting Locus of Control	32.09	.15	1.40	.17	
Children's Externalizing Behavior Problems	73.31	.34	3.11	.00	
<u>Step 2:</u>					.07**
Parenting Locus of Control	33.32	.16	1.51	.14	
Children's Externalizing Behavior Problems	64.81	.30	2.83	.01	
Accumulation of Socio-Contextual Risk	12.08	.27	2.80	.01	

***p* < .01

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Table 5

The Interactive Effect of Cumulative Socio-Contextual Risk Parent's Social Support and on Child Abuse Potential Controlling for Parenting Locus of Control and Child Externalizing Behavior Problems

	Effect	Confidence Interval	
		Lower Limits	Upper Limits
1. Parenting Locus of Control	22.51	-19.57	64.59
2. Child Externalizing Behavior Problems	52.00**	11.01	93.00
3. Cumulative Socio-Contextual Risk	8.30*	.49	16.12
4. Social Support	-65.18**	-96.57	-33.78
5. Cumulative Risk x Social Support	-20.11*	-39.00	-1.21

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

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Figure 2

Decomposition of statistically significant cumulative x social support interaction in relation to child abuse potential

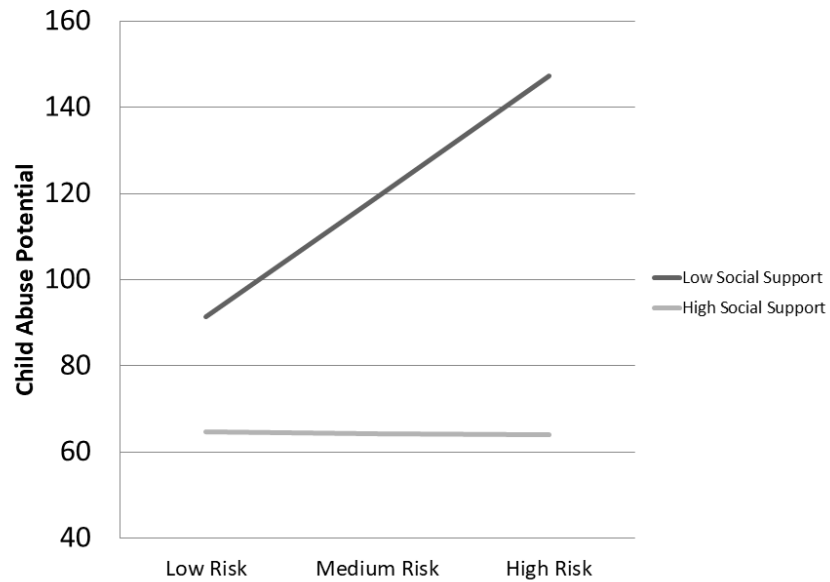


Figure 2. Graphical decomposition of the interaction of social support and child abuse potential on child abuse potential

*Low (i.e., 1 SD below the mean), Effect = 16.80, SE = 5.22, $p < .001$, CI = 6.42-27.18; High (i.e., 1 SD above the mean), Effect = -.19, SE = 5.97, $p = .97$, CI = -12.11-11.72