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Violent Victimization among Disadvantaged Young Adults Exposed to Early Family Conflict and Abuse: A 24-year Prospective Study of the Victimization Cycle across Gender

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Abstract

Significant associations between childhood victimization and later revictimization have materialized in previous literature; yet, the victimization cycle has been primarily explored with indicators of sexual assault, while insight into linkages between other forms of victimization remains limited. This study examined connections from family conflict exposure and physical abuse in childhood to violent crime victimization in adulthood, assessing also gender differences and neighborhood influences. Results from logistic regression and hierarchical linear modeling with data from the Chicago Longitudinal Study, a panel of 1,539 low-income, ethnic/racial minority children, unearthed a significant relation between family conflict exposure and later revictimization. Moderated by gender, these analyses showed girls exposed to frequent family conflict are particularly vulnerable to revictimization in adulthood. Exploratory analyses unveiled a potential linkage between childhood physical abuse and later revictimization for men. Neighborhood effects marginally influenced results in one instance. Public health implications are discussed.

Keywords

Victimization; Cycle of Victimization; Family Conflict; Childhood Physical Abuse

Introduction

Research over the last couple of decades has revealed that childhood victimization often extends into later years, contributing to lifelong patterns of victimization. In other words, exposure to violence in childhood – e.g., physical and emotional abuse – can affect children’s

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developmental trajectories, putting them at high risk for repeated victimization throughout the life course. Unfortunately, childhood violence exposure is not rare.

In 2010, Child Protective Services (CPS) reported that approximately 695,000 children experienced substantiated maltreatment (CDC, 2012) in the United States. From ages 0–18, it is estimated that anywhere from 10 to 13% of children will endure verified abuse or neglect (Aos, Lieb, Mayfield, Miller & Pennucci, 2004). However, these figures underestimate actual exposure to intrafamilial violence according to Sedlak and colleagues (2010) who conducted national incidence studies of abuse and neglect by surveying myriad human service professionals throughout the United States. Studying data from multiple sources, Finkelhor and colleagues (2009) also concluded that yearly incidence rates and lifetime prevalence rates of exposure to events such as sexual abuse, physical abuse, and domestic violence, was much higher among children in the U.S. than official figures indicate. Exposure to less obvious forms of family dysfunction, including persistent verbal and emotional conflict, is also likely to be more common than realized (Margolin & Vickerman, 2007). Family dysfunction also overlaps with severe forms of intrafamilial violence to create a traumatic family milieu for children (Meyerson, Long, Miranda, & Marx, 2001).

Exposure both to severe forms of intrafamilial violence and less severe forms of family conflict during childhood predict future victimization (Kitzman, Gaylord, Holt, & Kenny, 2003; Widom, Czaja, & Dutton, 2008). In turn, repeat victimization constitutes a public health hazard. Repeated exposure to conflict and violence in childhood has been correlated with a multitude of negative outcomes later in life, such as internalizing behavior (e.g., post traumatic stress disorder, depression), externalizing behavior (e.g., aggression, drinking and drug use), and general health problems (e.g. asthma, gastrointestinal problems) (Campbell, Greson, Bybee, & Raja, 2008). Therefore, insight into the cycle of victimization can help to advance public health and reduce victimization.

Theoretical Background—Developmental psychopathology, an integrative framework that draws from such theories as attachment (Bowlby, 1973) and social learning theory (Bandura, 1977), is based on two premises. First, development is cumulative (i.e., it builds on itself) (Stiles, 2008). That is, adaptation to environments at each developmental period influences adaptation at the next stage of development. Second, development is most accurately characterized as probabilistic rather than directly causal (Masten & Cicchetti, 2010; Stiles, 2008). In other words, maltreatment in childhood will not necessarily lead to later pathology; rather, it will enhance the probability of maladaptive developmental outcomes in concert with subsequent ecological risk.

Consider the developmental psychopathological perspective in the context of the relation between early victimization and later revictimization. The home environment is the crucial context in which children gain a sense of safety and mastery. Abuse or familial conflict can violate a child's sense of safety (Margolin & Vickerman, 2007). Furthermore, caregivers within these environments tend to be less physically and emotionally available for their child, undermining the child's mastery development (Margolin, 1998; Overstreet & Mazza, 2003). Challenges to child safety and mastery can interfere with critical developmental

capacities of the child and, as such, putting them at risk for poor developmental and functional outcomes (e.g., internalizing and externalizing behavior, academic problems) (Cicchetti & Valentino, 2006). As children age, these maladaptive behaviors manifest across settings, predisposing them to recurrent victimization (Tillyer, in press). For example, Testa, Hoffman, and Livingston (2010) found that women who experienced adolescent sexual victimization engaged in higher levels of risk-taking behavior in college (i.e., increased levels of sexual partners, hook ups, heavy episodic drinking, and heavy drinking contexts), which, in turn, put them at greater risk for sexual victimization in their first year of college.

Literature Review

Early Victimization and Later Revictimization—Researchers have investigated the relationship between childhood victimization and later revictimization focusing on several types of victimization (e.g., physical abuse, sexual abuse). For example, Widom, Czaja, and Dutton (2008) examined the relationship between early violence exposure and later revictimization using a cohort of documented maltreated children and a matched control group, finding that the maltreated group experienced a much higher rate of trauma experiences and revictimization than the non-maltreated group. However, this study is one of just a few that examines the relationship between early violence exposure and later revictimization with multiple types of childhood and adult victimization.

In fact, many researchers have focused solely on sexual abuse as a form of childhood victimization and later sexual revictimization when investigating the cycle of victimization (e.g., Campbell et al., 2008; Littleton & Ullman, 2013; Messman-Moore & Long, 2000). Yet some researchers have examined other forms of violence exposure in childhood (e.g., Swartout, Swartout, & White, 2011, Van Bruggen, Runtz, & Kadlec, 2006). For example, in a review of approximately 90 empirical studies, Classen, Palesh, and Aggarwal (2005) identified multiple factors that increase the risk of adult sexual revictimization in addition to childhood sexual abuse, including physical abuse and having a dysfunctional family background (e.g., parental conflict or fighting). Results from subsequently published research reinforced the notion that types of early maltreatment beyond sexual abuse, e.g., physical abuse, predict adult sexual victimization (e.g., Fargo, 2009; Merrill et al., 2009).

Moreover, researchers have examined revictimization with the outcomes of teen dating violence (Gagne, Lavoie, & Herbert, 2005) and adult physical revictimization (Barnes, Noll, Putnam, Trickett, 2009), although adult sexual revictimization remains the primary outcome of interest (Fargo, 2009). While adult rape is particularly traumatic, it represents only one form of victimization and is not inclusive of all potential forms of re-victimization in adulthood. Without acknowledgment of multiple forms of victimization experienced in adulthood, narrow conceptualizations of victimization serve as pitfalls in the current research. Moreover, the majority of studies focus on the women's experience of victimization and revictimization (e.g., Fargo, 2009), despite literature highlighting the prevalence of men's victimization in childhood (Dube et al., 2005).

Researchers also investigated the relation between childhood physical abuse and multiple forms of later revictimization (e.g., Barnes, Noll, Putnam, & Trickett, 2009; Coid et al., 2001; Desai, Arias, Thompson, & Basile, 2002; Lilly, London, & Bridgett, 2014; Merrill, et

al., 1999; Schaaf & McCanne, 1998). Examining underlying mechanisms, Day and colleagues (2012) found that children who had experienced physical abuse were at greater risk for depression and, subsequently, for peer victimization later in life. Nevertheless, the vast majority of this research has focused on women's experience of victimization, leaving a gap in research examining the relation between childhood physical abuse and later adult revictimization with men.

Contemporary research has emerged examining family functioning (Messman-Moore & Brown, 2004; Messman-Moore, Ward, & Brown, 2009) as a predictor of later revictimization. Studies have illuminated the relation between family conflict and children's externalizing and internalizing behavior during childhood and adolescence (Goeke-Morey, Papp, & Cummings, 2013; Jouriles, Rosenfield, McDonald, & Mueller, 2014). Alexander's (2009) study examining family functioning found that sexual victimization, witnessing domestic violence, and parent-child role reversals in childhood were significantly related to multiple types of revictimization in adulthood; however, this study's implications are limited to women.

Gender Differences—Because revictimization patterns across gender have not been systematically reviewed in the literature, little is known about potential gender differences in the association between early and later victimization. However, developmental psychopathology researchers recommend ongoing examination of processes and outcomes stratified by gender due to the potential distinctions between developmental trajectories between girls and boys (Cicchetti & Banny, 2014; Rutter & Sroufe, 2000). There is a basis to believe that both genders are susceptible to the phenomenon of revictimization, although their pathways may differ. For instance, general population research suggests that boys and girls develop at different rates. That is, boys do not develop as quickly as girls, tend to master social skills more slowly, and demonstrate aggressive behavior more readily (Mesman, Bongers, & Koot, 2001). Additionally, girls tend to be more heavily supervised in adolescence, while boys have more freedom to engage with peers (Sevenson, 2003). Increased aggressive behavior and low supervision in adolescence may converge to increase the likelihood of victimization for boys (Finkelhor et al., 2009). Conversely, as girls encounter adversity, they may internalize these experiences. For example, experiencing abuse in childhood may encourage young girls to self-blame, leading to depression, anxiety, or PTSD (Moylan et al., 2009). In turn, as these girls age they may become more isolated from positive social networks and become more vulnerable to revictimization in unhealthy environments.

One study found that women who had experienced victimization by their family were more likely to be revictimized in their dating relationships during adolescence compared to men (Laporte, Jiang, Pepler, & Chamberland, 2011). Other research corroborates that women are more likely to be revictimized in their relationships in early adulthood compared to men; however, other research also indicated that men are equally at risk for revictimization in other outcome domains (Chan, 2011; Tyler, Johnson, & Brownridge, 2008). Nevertheless, these studies have focused primarily on dating violence, indicating a need to widen the scope of the outcome measure.

Differences across Neighborhoods—Developmental psychopathology highlights the intersection of systems. That is, the actions or behaviors produced by the child directly affect the interactions they encounter with their family, peers, teachers, and neighbors. Those interactions are set within the context of a larger environment, such as a neighborhood. Neighborhoods shape the types of opportunities available to residents, including children (Fauth, 2004). The probabilistic nature of developmental psychopathology suggests that high-risk environments, such as low-income, high-crime neighborhoods, enhance the likelihood of deleterious outcomes. For example, adolescents living in impoverished neighborhoods may be at greater risk of coming into contact with offenders (e.g., gang members, drug dealers), increasing their chance of revictimization. Additionally, in impoverished neighborhoods there may be an absence of neighborhood guardians, which may increase the chances of adolescents becoming involved in delinquent activities, also placing them at greater risk for victimization (e.g., assaults) (Tyler, Johnson, & Brownridge, 2008). Considering the context of environment (i.e., neighborhood) using the developmental psychopathology perspective provides a multi-level approach to the linkages between exposure to moderate and severe family conflict and early adulthood victimization.

Gaps in the Literature—While previous research has made important advances regarding the cycle of victimization, gaps in knowledge still exist. First, the majority of studies conducted concerning revictimization employ a cross-sectional design (Finkelhor et al., 2009; Gustafsson et al., 2009; Kennedy, 2007), which reduces scientists' ability to make causal inferences. Second, the conceptualization of victimization and revictimization is primarily limited to sexual abuse and sexual victimization (Messman-Moore et al., 2009; Tyler, Hoyt, & Whitbeck, 2001), despite the prevalence of multiple types of victimization experienced throughout the lifespan (i.e., polyvictimization). Moreover, family conflict has rarely been examined as a factor contributing to revictimization. Third, few studies assess gender differences as related to revictimization patterns, prompting Finkelhor and colleagues (2009) to call for a systematic review of gender differences in this area. Finally, many studies utilizing grouped samples (e.g., residents of neighborhoods) treat the groups as unrelated, despite the fact that the individuals making up these groups may have common characteristics due to the nature of their environment (Lauritsen, 2001), which can obscure statistical estimates and ultimately lead to misinterpretation of findings. Rather, statistical techniques designed to account for the similarities within groups and differences across groups, such as HLM, must be employed. Therefore, additional research into this area of study is warranted in order to contribute to prevention policy and programming.

Contributions of Current Study

Considerable research has focused on childhood sexual abuse as a predictor of later revictimization (Finkelhor, Ormrod, & Turner, 2007; Widom, et al. 2008). While this research has helped conceptualize the phenomenon of interest, it also has challenged future research to broaden the definition of victimization. Although childhood physical abuse has been investigated in previous research, it has been secondary to childhood sexual abuse, and family functioning is even less commonly acknowledged as a predictor of later victimization, despite theoretical support (Messman-Moore & Brown, 2004). Broadening the definition of early exposure to violence beyond sexual abuse by focusing on verified

physical abuse and self-reported family conflict may capture a more comprehensive definition of early violence exposure. Also, expanding the concept of revictimization beyond adult rape is critical to understanding the scope of this phenomenon. Furthermore, employing HLM allowed us to account for differences across residential groups, that is the clustering effects of neighborhoods. Last, conducting this research with a sample of low-income, primarily African American study participants enables us to generalize results to an important subpopulation at risk for repeated victimization.

As such, this research study assesses family conflict and physical abuse as predictors of later revictimization, conceptualized broadly as violent crime victimization. The analyzed model may be more inclusive of men's victimization given it does not solely focus on sexual abuse, which is more readily applied to women. Therefore, gender differences were explicitly analyzed. Lastly, using longitudinal data, hierarchical linear modeling was used to account for clustering effects of neighborhoods. The following four research questions were addressed.

1. Does childhood exposure to physical abuse increase the risk for violent victimization in late adolescence/early adulthood (i.e., revictimization)?
2. Does childhood exposure to frequent family conflict increase the risk for violent victimization in late adolescence/early adulthood (i.e., revictimization)?
3. Do these associations differ by gender?
4. Do the clustering effect of neighborhoods alter any of the relations tested above?

Guided by developmental psychopathology as a theoretical framework, we hypothesized that children who experienced physical abuse and frequent family conflict were more likely to report violent victimization in later life. Additionally, based on previous research we expected that gender would moderate the relationship between childhood victimization and later revictimization (i.e., violent victimization). Specifically, we expected women who experienced physical abuse as children to be less likely to experience revictimization as adults relative to men in the study, and we also expected men who experienced frequent family conflict as children to be less likely to experience revictimization as adults relative to women in the study. Lastly, previous research has not established expected neighborhood effects on revictimization patterns; therefore a specific hypothesis was not generated. Rather, accounting for the clustering effect of neighborhoods was exploratory in nature.

Method

Sample & Data

The Chicago Longitudinal Study (CLS) is a panel investigation of 1,539 ethnic/racial minority children (i.e., 93% African American, 7% Latino) raised in high-poverty Chicago neighborhoods. One aim of the study was to track the developmental progress of all CLS participants. To that end and throughout childhood and adolescence, an array of participant information was gathered via multiple sources including parent report, child self-report,

teacher report, birth records, and school records. From 2002 to 2004, when participants were approximately 22 to 24 years of age, the CLS administered an adult survey to 1,142 participants translating into a 74.2% capture rate of the original sample (Reynolds, 2000).

Regarding neighborhood level data, the researchers were able to ascertain the neighborhood of residence at the time of birth using the Illinois Department of Public Health birth records. A total of 52 neighborhoods were identified. A small number of cases ($n = 41$) were not used in the multilevel modeling analyses because they were missing neighborhood data; thus, reducing the sample to 1,101 cases. Of the 52 clusters, 14 cases contained only one individual per cluster. We calculated the ICC using the full sample and the sample without the clusters containing only one case. Running the dataset with the dropped cluster cases, the ICC (2.4%) is nearly identical to the dataset that contained the cluster cases (2.2%); therefore, we decided to retain the clusters containing only one case.

Measures

Dependent variable—Participants completed an adult survey addressing education, employment, income, well-being, health, life satisfaction and significant life experiences assessed with the Life Events Checklist (LEC; Johnson & McCutcheon, 1980). One LEC item asked respondents if they had “[been] a victim of a violent crime” during distinct developmental periods (0–5, 6–10, 10–15, 16–Present years of age). The authors focused on the period of 16 years of age onward, coding anyone endorsing violent victimization during this period with 1. All others, including those who endorsed the experience of violent victimization before the age of 16 were coded 0 on this outcome measure. This item contributes to the community domain subscale of the LEC, an instrument that has been used with youth from various backgrounds, demonstrating acceptable test-retest reliability and convergent validity (Bevans, Cerbone & Overstreet, 2008; Brand & Johnson, 1982). Researchers have previously used single items from this LEC subscale in published studies (e.g., Arteaga, Chen, & Reynolds, 2010; Ryttilä-Manninen et al., 2014). In fact, a single measure of “victim of a violent crime” was rated highly on dimensions of objectivity and negativity by a sample of college students (Magnus, Diener, Fujita, & Pavot, 1993). In our sample, the violent victimization item correlated significantly with other negative life events, e.g., substance abuse, enhancing confidence in its validity given known clustering of such experiences (Newcomb, Huber, & Bentler, 1981). Additional LEC items addressed non-violent crime victimization, increasing the likelihood that respondents discriminated between violent and non-violent crime victimization when answering questions.

Independent variables—Respondents reported whether they experienced *frequent family conflict* from ages 0 to 15. Endorsement of this item, also drawn from the Checklist of Stressful Life Events, resulted in a code of 1; all other cases received a code of 0.

Substantiated reports of physical abuse originated with two sources: Child Protective Division of the Illinois Department of Children and Family Services and petitions to the county juvenile court (Reynolds & Robertson, 2003). Reports are substantiated if credible evidence of child maltreatment is discovered. Children who had an administrative record of *physical abuse* during the ages of 0–15 were coded 1, otherwise 0.

Factors—The neighborhoods were determined using the Illinois Department of Public Health birth records. These neighborhoods were not census tracts; rather, they represented neighborhoods recognized within the city of Chicago in 1980 (e.g., Ford City, Hyde Park, etc.) This was a categorical variable, labeled by the neighborhood name.

Covariates—The authors included seven covariates, all measured at or near the child's birth, that previous literature has established as risk factors related to the outcome of interest (DeMaris, Benson, Fox, Hill, & VanWyk, 2003). Mother's completion of high school, the number of children living in the household, food stamp participation, and mother's employment status were recorded from both parent-report and public records such as birth records from the Illinois Department of Public Health (Reynolds, 2000). Households with more than four children were coded 1, otherwise 0. Mothers who were not working at least part-time were coded 1, otherwise 0. Three additional demographic variables were modeled as covariates and obtained from Chicago Public School records: preschool attendance, race/ethnicity, and child gender.

Statistical Analyses

In two separate analyses, logistic regression was used to determine if childhood exposure to (1) frequent family conflict and (2) physical abuse increased the risk of revictimization (i.e., violent victimization) from ages 16–22. Controlling for key demographic and environmental risks, we regressed the outcome variable (self-report violent victimization in young adulthood) onto each explanatory variable along with the set of study covariates in separate analyses. Because our outcome variable (violent crime victimization during ages 16–22) is an ordinal level variable, logistic regression was the preferred method to normalize the distribution (Cohen, Cohen, West, & Aiken, 2003). We used SAS 9.2 to conduct these analyses.

Secondly, we disaggregated the data by gender and ran the same analyses as described above for both men and women. Third, if significant main effects were detected in the full sample, we returned to the full sample to test the moderating effect of gender on the previously established relations.

The participants in the sample were drawn from geographically diverse neighborhoods in Chicago; therefore, it is possible that using logistic regression with this sample may lead to biased standard error estimates due to clustering effect. The use of multilevel models account for these clustering effects and yields more accurate estimates, allowing for a more robust conclusion to be drawn (Raudenbush & Bryk, 2002). An intraclass correlation (ICC) is an indicator of level-two (e.g., neighborhood level) variation in a relationship (e.g., the relationship between childhood victimization and later revictimization); typically, any relationship with an ICC of 2% or greater suggests the presence of level-two effects. The results from this calculation indicated an ICC of 2.4%. Consequently, the researchers employed multilevel models.

A random intercept model was used for each of the research questions for the following reasons. First, the available data did not contain neighborhood characteristics or level-2 variables, thus neighborhood served as a factor. Second, the research questions focused on

the relationships of level-1 variables, accounting for the clustering effect of neighborhoods. Third, when conducting model building, the variance of the random slope was not significant for any model. Based on the theoretical background of this relationship and some exploratory analyses, the random intercept model was considered the best model (Raudenbush & Bryk, 2002). Lastly, when considering the interaction of gender and the predictors on revictimization, no previous literature has established that this relationship varied by neighborhood; nevertheless, we employed a random intercept model to control for the clustering effect of neighborhoods.

Because the outcome variable and predictors are dichotomous, the normality assumptions of the level-1 residuals and random errors are violated; thus, the logit was used to normalize the distribution. The multivariate normality of Level-2 random effects was tested; these were mostly normal, with several clusters deviating from normality. The clustering effect of neighborhood was estimated by Likelihood method (Laplace) using SAS 9.2 to test study hypotheses. This estimation method provides less biased estimates and allows for a real likelihood that can be used in likelihood ratio test; AIC and BIC are valid using this method. A reduction was seen from the unconditional model to the random intercept model in all three fit indices: log likelihood, AIC, and BIC. However, the $-2LL$, AIC, and BIC for the random intercept model and the random coefficient model were identical; thus, the researchers were unable to determine based on these fit indices which is the better model. However, model testing for fixed or random coefficients resulted in the fixed model being a better fit. R-Squared type of measures could not be calculated due to the categorical nature of the outcome and predictor variables.

Results

Examining Table 1 reveals that over half of the sample grew up in a household in which the mother did not graduate high school, was employed part-time or less, and received public aid (i.e., TANF). Based on previous analyses we also know that over three-quarters of the sample grew up in a single parent household, over one-third of the sample was raised by a mother who had given birth during her teen years, and nearly half lived in a neighborhood with highly concentrated levels of poverty (Topitzes, Mersky, Dezen, & Reynolds, 2013). In other words, this is a very disadvantaged sample. Boys experienced more physical abuse than girls; however, there were few noted cases of documented physical abuse early in childhood. Boys also reported experiencing more frequent family conflict than girls during ages 0–15. Additionally, men reported revictimization in young adulthood more than two times the rate of women.

Employing logistic regression, the results indicate that exposure to frequent family conflict does significantly increase the risk for violent victimization in early adulthood ($\chi^2 = .697$, $df = 1$, $p = .001$). Also, results from the logistic regression analysis demonstrate that for the full sample (men and women) documented cases of physical abuse in childhood did not increase the risk for violent victimization in early adulthood ($\chi^2 = .606$, $df = 1$, $p = .181$).

Although, when stratifying the sample by gender, it appears that girls exposed to frequent family conflict in childhood are at significantly greater risk for victimization in early

adulthood relative to girls who reported no exposure to frequent family conflict in childhood ($\chi^2 = 1.344$, $df = 1$, $p = .000$). Conversely, boys endorsing exposure to early and frequent family conflict were not at elevated risk for later victimization compared to boys who did not endorse early and frequent family conflict ($\chi^2 = .332$, $df = 1$, $p = .240$). In an exploratory analysis, we found that documented physical abuse in childhood does significantly increase the risk of early adulthood victimization for men ($\chi^2 = .990$, $df = 1$, $p = .048$), but not for women ($\chi^2 = -18.618$, $df = 1$, $p = .999$).

Considering the aggregate sample, the moderating effect of gender on the association between frequent family conflict and early adulthood revictimization was significant ($\chi^2 = .965$, $df = 1$, $p = .028$). We did not test moderating effects of gender on the abuse-revictimization link given we found no main effects in the full sample.

Based on the intra class correlation (ICC), approximately 2.4% of the variation comes from the differences among neighborhoods. Although this variation is small, it passed the recommended threshold of 2% variation (Theall et al., 2011). We acknowledge Raudenbush and Bryk's criticism (2002) of utilizing this equation and constant to compute the ICC because the individual cluster variance is likely to vary. Therefore, the authors calculated the recommended confidence interval around the intercept of the unconditional model: 95% CI [.7993, .9233].

Employing HLM analysis, the results regarding the relationship between frequent family conflict and later violent victimization ($B = .6654$, $df = 1041$, $p = .003$), and documented physical abuse and later violent victimization ($B = .6460$, $df = 1041$, $p = .17$), using the full sample (men and women) remained unchanged. Findings from the disaggregated sample remained largely unchanged, as well; however, the relation between documented physical abuse and adult violent victimization for men became marginally significant ($B = 0.9883$, $df = 456$, $p = .064$). Considering the aggregate sample, the moderating effect of gender on the association between frequent family conflict and later violent victimization in adulthood remained unchanged using HLM analysis.

Discussion

Contribution of Results

These results indicate that exposure to frequent family conflict during childhood may have a lasting effect into late adolescence and early adulthood for women. Specifically, girls exposed to frequent family conflict are at an increased risk for revictimization in adulthood. These results add to the existing literature identifying family conflict as an important factor to consider in the study of revictimization (Messman-Moore et al., 2009). Nevertheless, the literature on this relation is relatively sparse, suggesting an area for further research.

According to the developmental psychopathology framework, there are many pathways from which family conflict could lead to victimization in later life and developmental domains (Cicchetti & Valentino, 2006). For example, children exposed to frequent family conflict in the home may have a number of domains affected, such as their sense of self, agency, efficacy, and trust (Briere, 2002). If these challenges remain unaddressed, effects of these

adverse experiences will continue to unfold across developmental stages and domains. In turn, these cumulative and cascading effects, e.g., internalizing and externalizing behaviors (Howell, 2011), may increase the likelihood that adolescents will be involved in unsafe activities and exposed to revictimization.

Exposure to physical abuse was not found to increase children's risk of revictimization in adulthood for the full sample. These results do not support existing literature (Widom, Czaja, & Dutton, 2008) and theoretical expectations (Margolin & Vickerman, 2007). While these results may denote children's resilience or recovery from physical abuse, it is more likely that they represent a statistical artifact as a consequence of the study's low power, stemming from the low base rate of physical abuse in the full sample (2.7%).

Due to the heinous nature of childhood sexual abuse, research on other types of childhood victimization has been neglected. As a result, few studies examine the relation between childhood physical abuse and adult revictimization, and childhood frequent family conflict and adult revictimization. Moreover, most researchers have focused exclusively on adult sexual victimization, or rape. In response to this tight focus on the cycle of sexual victimization, the current study used a broader indicator of violent victimization as an outcome to capture a more comprehensive understanding of adult victimization. Creating an indicator of adolescent/adult victimization that transcended sexual assault enhanced the generalizability of our study across gender. We were therefore able to assess relations of interest within gender subsamples.

In an exploratory context, the results indicate that men's exposure to physical abuse in childhood heightens their risk of revictimization in adulthood compared to women. These results support the link between physical abuse and later revictimization (Day et al., 2012) and contribute to the call for systematic analysis of gender differences within the context of the cycle of victimization (Finkelhor et al., 2009). We speculate that boys who are exposed to physical violence in childhood may adapt to their environment using aggression with their peers, leading to delinquency (e.g., truancy, gang affiliation) as they age into adolescence, ultimately placing them at greater risk for future revictimization (Maas, Herrenkohl, & Sousa, 2008). Moreover, Topitzes, Mersky, and Reynolds (2012) reported that children with substantiated cases of maltreatment had significantly increased chances of juvenile and adult violent offending. Considering men's violent exposure, violent victimization and violent perpetration might be considered in context of each other.

Alternatively, the results indicate that women are at a greater risk of violent crime victimization if they have experienced family conflict during childhood compared to men. These results follow from Finkelhor and colleagues' (2009) call for more researchers to systematically examine gender differences when assessing revictimization patterns. Research indicates that girls mature physiologically faster than boys and have a tendency towards interpersonal sensitivity (Rose & Rudolph, 2006), suggesting that girls may be able to understand complex social roles more readily than boys (Howell, 2011). However, these advancements may increase their vulnerability to family conflict. Subsequently, exposure to family conflict in childhood may influence young women's interpersonal patterns, through various mechanisms such as social learning, potentially resulting in high-conflict

relationships during adolescence and early adulthood. These high-conflict relationships may lead to violent interactions, thus increasing the propensity for revictimization in later life. Conversely, boys' delayed development may serve as a protective factor to frequent family conflict, as their sense of self, agency, efficacy, and trust are not threatened to the same extent as girls. Moreover, research indicates that, from the preschool age through adolescence, boys are more likely to have larger playgroups and denser social networks compared to girls (Rose & Rudolph, 2006). These findings suggest that boys' peer groups may confer some protection against poor social dynamics within the family, whereas girls may not benefit from the same developmental protection against conflictual family dynamics.

Considering the effect of neighborhood, we found that the relation between childhood victimization and adulthood revictimization remained unchanged. Nevertheless, the association between men's exposure to physical abuse and later revictimization found in the exploratory analysis of the disaggregated sample was attenuated when we accounted for the clustering effect of neighborhood. These results suggest that some of the variation in the relations of interest may be due to the neighborhood in which the men were raised. Although modest, these results may support previous research indicating neighborhood environment as a factor in men's exposure to violent victimization and violent perpetration. Namely, Jain and colleagues (2010) found that neighborhood accounted for 20% of the variation in adolescent boys who experienced violent victimization and perpetrated violence. Although the sample of neighborhoods in the study is relatively homogenous and as such limits variation between neighborhoods, neighborhood effects on men's victimization warrants further attention.

Limitations

Several study limitations qualify our findings. First, one predictor, i.e., frequent family conflict, and the outcome, i.e., revictimization, are subject to same source bias and are limited to one-item measurements. Also, the outcome measure focuses on criminal victimization, which could limit responses and produce false negatives. Additionally, recall bias can affect retrospective, self-report measures; however, our physical abuse measure was not subject to any of these administration biases. Second, we identified neighborhood residency at time of birth, despite the fact that residential movement is certainly a possibility with this sample. Nevertheless, we found that of the families in the sample who moved, approximately 90% maintained the same poverty status. Of the families who did change poverty status, the majority transitioned to a more impoverished neighborhood, which is consistent with prior research indicating families of low-socioeconomic status struggle to achieve upward residential mobility (Aber, Bennett, Conley, & Li, 1997). As such, our results are conservative estimates of neighborhood effects. Third, the cases of physical abuse were substantiated and may not generalize to unreported cases of abuse. Last, the sample consisted of low-income, ethnic/racial minority families, the majority of whom were African American. While generalizability of results are limited, findings yield important information about a subpopulation at-risk for the cycle of victimization.

Implications and Future Research and Practice

Our study suggests that victimization may emerge early in life and recur over the course of development. For girls, conflictual family dynamics alone may presage later violent victimization, recommending the delivery of evidence-based services to families at-risk for high levels of conflict in order to interrupt the cycle of victimization. For instance, public child welfare agencies are currently integrating well-validated family system interventions, such as functional family therapy and parent-child interaction therapy, into their service array (e.g., Pecora, Whittaker, Maluccio, & Barth, 2012; Topitzes, Mersky, & McNeil, 2015). The intent of such implementation efforts is to improve family functioning, reduce family conflict, and promote positive child development.

For boys, our results implicate early childhood physical abuse as a predictor of later violent victimization. These findings reinforce the case for disseminating interventions shown to prevent child abuse at either secondary or tertiary levels. However, promising, efficacious or effective secondary intervention programs can be difficult to identify (Reynolds, Mathieson, & Topitzes, 2009) and even more difficult to bring to scale (Rubin, Curtis, & Matone, 2014). Support in the literature exists for efficacious tertiary abuse prevention programs (e.g., Chaffin, Funderburk, Bard, Valle, & Gurwitsch, 2011), yet translating significant results from field trials to services as usual presents many challenges (Dodge, 2011). Finally, our results provide some evidence for neighborhood influence on the linkage between physical abuse and later victimization among boys, a finding that warrants further attention.

Future research therefore may address neighborhood effects on the cycle of victimization for men, drawing from investigations into neighborhood effects on men's violence perpetration (Frye et al., 2012)). In addition, the field could benefit from distilling results through the examination of additional demographic and environmental characteristics as moderators of the cycle of victimization; for instance, it may be helpful to analyze the effects of family structure and gender of the abusing adult on the cycle of victimization. Last, we recommend that investigators continue to direct their attention to adapting and testing evidence-based programs for child welfare, youth mental health, and other large-scale - or public service context for children (e.g., Landsverk, Garland, Reutz, & Davis, 2011; Weisz et al., 2012). Such efforts can help to potentially interrupt and/or prevent the cycle of victimization.

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Characteristics of the Sample (n = 1142)

Table 1

Study measures	Full Sample Mean rates, % (SD)	Male Mean rates, % (SD)	Female Mean rates, % (SD)
<i>Covariates</i>			
Mother educated less than high school *	52.5 (0.50)	55.0 (0.50)	50.4 (0.50)
Mother employed less than part-time *	65.6 (0.48)	63.4 (0.48)	67.4 (0.47)
Four or more children in childhood household *	17.6 (0.38)	16.3 (0.37)	18.7 (0.39)
TANF recipient *	61.1 (0.49)	58.6 (0.49)	63.2 (0.48)
Female	54.3 (0.50)	~	~
Black/African American	94.1 (0.24)	93.9 (0.24)	94.4 (0.23)
Participated in Child-Parent Center preschool	65.7 (0.48)	62.6 (0.48)	
<i>Explanatory variables</i>			
Frequent family conflict (ages 0–15)	15.8 (0.36)	17.2 (0.38)	14.5 (0.35)
Physical abuse (ages 0–15)	2.7 (0.16)	3.6 (0.19)	1.9 (0.14)
<i>Outcome</i>			
Violent crime victimization (ages 16–22)	12.6 (0.33)	19.0 (0.39)	7.3 (0.26)

* Child age 0–3. TANF = Temporary Aid for Needy Families

Logistic Regression and Hierarchical Linear Modeling with the Outcome of Violent Crime Victimization, ages 16–24 (N = 1142)

Table 2

Explanatory Measures	OR (95% CI)	SE	z	(P > z)	MF _X , %	
					0 Group	vs 1 Group
<i>Full Sample</i>						
<i>Logistic Regression</i>						
Frequent family conflict	2.01 (1.31 – 3.07)	0.434	3.22	0.001	10.0	18.3
Physical abuse	1.83 (0.75 – 4.46)	0.832	1.34	0.181	11.1	18.6
<i>Hierarchical Linear Modeling</i>						
Frequent family conflict	1.95 (1.25 – 3.02)	.2252	2.95	0.003	--	--
Physical abuse	1.91 (0.76 – 4.80)	.4704	1.37	0.170	--	--
<i>Disaggregated Sample by Gender</i>						
<i>Males</i>						
<i>Logistic Regression</i>						
Frequent family conflict	1.39 (0.80 – 2.43)	0.394	1.17	0.240	17.6	22.9
Physical abuse	2.69 (1.01 – 7.18)	1.348	1.98	0.048	17.8	36.9
<i>Hierarchical Linear Modeling</i>						
Frequent family conflict	1.42 (0.80 – 2.53)	.2929	1.21	.2280	--	--
Physical abuse	2.69 (.94 – 7.70)	.5317	1.86	.0637	--	--
<i>Females</i>						
Frequent family conflict	3.83 (1.98 – 7.44)	1.296	3.97	>0.000	5.4	18.0
Physical abuse	0.00 (0.00 – N/A)	11,597	--	0.999	1.2	0.0
<i>Hierarchical Linear Modeling</i>						
Frequent family conflict	3.71 (1.79, 7.67)	.3709	3.53	>0.000	--	--
Physical abuse	0.00 (0.00 – N/A)	1,382.10	-0.01	.992	--	--
<i>Moderation by gender</i>						
<i>Logistic Regression</i>						
Frequent family conflict by gender	2.62 (1.11 – 6.20)	1.151	2.20	0.028	--	--
Physical abuse by gender	--	--	--	--	--	--
<i>Hierarchical Linear Modeling</i>						
Frequent family conflict by gender	2.62 (1.07, 6.42)	.4573	2.11	.0352	--	--

Explanatory Measures	OR (95% CI)	SE	z	(P > z)	MFX, %	
					0 Group	1 Group
Physical abuse by gender					--	--

Note. Bolded indicates statistically significant results at $p < .05$. OR = odds ratio; CI = confidence interval; SE = standard error; z = test statistic; $P > |z|$ = probability of z under H_0 ; MFX = marginal effects. Coefficients are adjusted for study covariates.