

The Cycle of Violence Revisited: Childhood Victimization, Resilience, and Future Violence

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Abstract

The individual and social protective factors that help break the cycle of violence are examined. Specifically, this study investigates (a) the individual and social protective factors that reduce violent offending among previously victimized children, and (b) whether certain protective factors are more or less important depending on the type and frequency of childhood victimization experienced. Data on young adults from Wave III of the National Longitudinal Study of Adolescent to Adult Health are used ($N = 13,116$). Negative binomial regression models are estimated to examine the protective factors that promote resiliency to violent offending among individuals who reported being physically and sexually victimized as children. Results indicate that a number of individual and social protective factors reduce violent offending in young adulthood. With a few exceptions, these factors are specific to the type, frequency, and comorbidity of abuse experienced. The results suggest a number of promising approaches to break the cycle of violence among previously victimized children. Future

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research should move beyond explaining the cycle of violence to examine how the cycle may be broken.

Keywords

treatment/intervention, child abuse, physical abuse, sexual abuse, intergenerational transmission of trauma

Introduction

Over the last 25 years, the cycle of violence hypothesis (Widom, 1989a; 1989b) has provided a solid foundation for studying the long-term criminogenic effects of childhood victimization. Research within this tradition has established two major components to the thesis. First, victims of child abuse are at an increased risk of perpetrating violence in adolescence and young adulthood (Currie & Tekin, 2011; Maxfield & Widom, 1996; Watts & McNulty, 2013), and second, not all victims of child abuse go on to perpetrate future violence (DuMont, Widom, & Czaja, 2007; Jaffee, Caspi, Moffitt, Polo-Tomas, & Taylor, 2007). Comparatively speaking, childhood victims that engage in violence have received far more scholarly attention than those who do not. Indeed, the majority of research in this area focuses on identifying risk factors that increase the likelihood of violence among abused children—factors such as biased and deficient social-information-processing patterns (Dodge, Bates, & Pettit, 1990), endorsement of antisocial attitudes and associations with deviant peers (Herrenkohl, Huang, Tajima, & Whitney, 2003), and genetic susceptibility to maltreatment-induced changes to neurotransmitter systems (Caspi et al., 2002).

Much less understood, however, are the *protective* factors that explain why some abused children can avoid completing the cycle of violence (McGloin & Widom, 2001). And existing research suggests that most abused children do avoid completing this cycle. Even in Widom's widely cited 1989 *Science* study, only 29% of her abused and neglected sample had an adult criminal record, and only 11% of that sample had a violent criminal record as an adult. The relative inattention to the protective factors exhibited by these resilient individuals is unfortunate given that they may provide valuable information regarding how the cycle may be broken for those less resilient.

The purpose of the current study is to identify the protective factors that increase resilience to violent offending among young adults who were previously abused as children.¹ We focus specifically on a subset of young adults from the National Longitudinal Study of Adolescent to Adult Health (Add

Health) who were abused prior to the sixth grade to examine two broad research questions.

Research Question 1: What factors are associated with reduced violence among young adults who identify as being previously abused as children?

In answering this, we focus on determining the individual and social protective factors that are distinctive to the “negative cases” of the cycle of violence—those individuals who might be expected to engage in adult violence given their childhood victimization yet do not.

Research Question 2: Are certain protective factors more or less important depending on the type and frequency of abuse experienced?

To answer this question, we examine whether protective factors differ according to the type, frequency, and comorbidity of childhood abuse. Our work comes as part of a more general victimization literature that seeks to explain variations in behavioral responses among victims (e.g., Boxer & Sloan-Power, 2013; Grych, Hamby, & Banyard, 2015; Turanovic & Pratt, 2015). Ultimately, then, our broader objective is to refocus cycle of violence research on determining the modifiable protective factors that may break the cycle.

Child Abuse and the Cycle of Violence

Research on child abuse has come a long way since Kempe, Silverman, Steele, Droegemueller, and Silver (1962) wrote of physical abuse in the form of “parental assault” as part of battered-child syndrome. This body of work has advanced our understanding of child abuse in significant ways, and yet reviews of the literature identify a number of important conceptual and methodological issues to address for any study that examines the consequences of childhood victimization (see especially Malvaso, Delfabbro, & Day, 2015; Thornberry et al., 2012). Four issues in particular merit special attention for research that seeks to identify protective factors that may break the cycle of violence. Two of these are conceptual and relate to how abuse and resilience are defined, and two are methodological and concern the nature of the samples most often used in existing research.

First, existing works often overlook the distinctions between type, frequency, and comorbidity of child abuse (Malvaso et al., 2015). The original cycle of violence research documented that physical abuse was most important for the prediction of violence in adulthood (Widom, 1989a; see also

Maxfield & Widom, 1996). Yet the *type* of abuse experienced by children may produce different behavioral outcomes, with sexual abuse assuming a critical importance alongside physical abuse (e.g., Currie & Tekin, 2011; see also Noll, 2005; Yun, Ball, & Lim, 2011). The *frequency* with which abuse occurs is also likely to impact whether a previously abused child engages in violent behavior as an adult. For example, Heller, Larrieu, D'Imperio, and Boris (1999) identify the number of instances of abuse as a potentially confounding factor that is consistently unaddressed in studies of maltreated children (see also DuMont et al., 2007; McGloin & Widom, 2001). In addition, the *comorbidity* of types of abuse is likely to affect the relationship between childhood victimization and future adult violence. This becomes particularly important when acknowledging resilience research that suggests personal resources (e.g., above-average intelligence) may no longer be sufficient as a protective factor when the child experiences multiple forms of stress (Jaffee et al., 2007).

Second, existing works often examine static protective factors that cannot be addressed or altered through intervention programs. In particular, demographic characteristics are often offered as protective factors, which lead to perplexing assertions that "being White" or "being older" serve as a buffer against the deleterious effects of child abuse. Instead, if modifiable protective factors such as success in school or mentorship from a caring adult can be identified, then interventions can be tailored toward promoting these factors within previously abused individuals (Cicchetti, 2004; Haskett, Nears, Ward, & McPherson, 2006).

Third, existing works often use agency-based samples of abused children that may not be representative of the larger abused population of childhood victims. Differences between victimized children who were referred to agencies (such as child protective services) and those who were not may include the severity of abuse and levels of familial or extrafamilial support systems (Heller et al., 1999). Furthermore, data based on agency samples tend to underreport actual childhood victimization instances, which could result in conservative estimates of the relationships between abuse, resilience, and future violence (Topitzes, Mersky, Dezen, & Reynolds, 2013). Due in part to these concerns, Thornberry and colleagues (2012) recommend that cycle of violence studies use a sample that is representative of a general population, as selected using probability sampling techniques, with a satisfactory participation rate. A large sample of this nature would also allow for separate examinations of the protective factors of different subtypes (e.g., physical abuse only, physical and sexual abuse; Haskett et al., 2006).

Finally, existing works within the cycle of violence and resilience literatures often focus on outcomes in childhood or adolescence, and less is known regarding the protective factors that promote resilience into early adulthood (McGloin & Widom, 2001; Topitzes et al., 2013; Topitzes, Mersky, & Reynolds, 2012). Studies have documented that previously abused children may appear resilient in adolescence, but not in early adulthood (DuMont et al., 2007); youth who appear resilient in adolescence may not have truly broken the cycle. We believe that the essence of the cycle of violence is that adults use violence toward children who then use violence toward others when they are adults.

The child abuse and resilience literatures address the above issues to varying degrees—with available reviews suggesting that the bulk of this literature falls short on conceptual and methodological rigor (Haskett et al., 2006; Heller et al., 1999; Thornberry et al., 2012). Nevertheless, this work suggests that studies that examine the factors that can break the cycle of violence should (a) differentiate between the type, frequency, and comorbidity of child abuse, (b) focus on dynamic protective factors that can be modified, (c) use a large and diverse sample, and (d) use self-reported outcomes of violence that are measured in adulthood.

Current Focus

A key disclaimer of the original cycle of violence hypothesis research is that future adult violence is far from inevitable. Widom (1989a, p. 169) suggests, “It is important to understand the potential protective factors that intervene in the child’s development and to compare the development of those who succumb and those who are ‘resilient’ and do not.” We take this advice and begin with a sample of young adults who have reported being abused as children. According to the cycle of violence, we would expect most of these individuals to “succumb” and be at an increased risk of engaging in violence. So what sets those who perpetrate violence apart from those who do not? Based on the existing child abuse and resilience literatures, our current study has two objectives. First, we identify the protective factors that reduce violent offending in early adulthood among individuals who were abused as children. Second, we examine whether certain protective factors are more or less important depending on the type and frequency of child abuse experienced. By addressing the above objectives, we identify the protective factors that contribute to resilience in young adulthood, and we also hope to encourage future work on how victims of child abuse are able to break the cycle of violence.

Method

Data

We use data from Add Health, which is an ongoing, nationally representative study of adolescent health and well-being (Harris, 2009). A sample of 80 high schools and 52 feeder middle schools and junior high schools was selected through a disproportionately stratified, school-based, clustered sampling design. The sample was representative of U.S. schools with respect to region of the country, urbanicity, school type, school size, and ethnicity (Harris, 2011). At Wave I in 1994 to 1995, in-school surveys were administered to more than 90,000 students enrolled in grades 7 to 12, from which a random subsample of 20,745 adolescents was selected to participate in the Wave I, in-home component of the study. Wave III follow-up interviews with the Wave I sample were conducted 7 years later during 2001 to 2002. The average age of participants was 15 years at Wave I (ranging from 11 to 21 years) and 22 years at Wave III (ranging from 18 to 28 years). Of the original Wave I respondents, approximately 15,000 participated in the Wave III in-home interview ($N = 14,322$ with valid sample weights).² We focus primarily on the Wave III survey as it contains information on childhood physical and sexual abuse that was not captured in previous waves.

As is common with large-scale survey data, information was missing on some of our key variables due to item nonresponse (10.7% of Wave III respondents had item-missing data). To address the potential bias produced by missing data, multiple imputation was used (Allison, 2000). This involved a procedure in which 10 imputed data sets were generated by a missingness equation that included all variables in the present study, and which adjusted estimates according to the clustered surveying of respondents in schools (using the *mi* suite in Stata 13). The results from 10 imputed data sets were combined using pooled parameter estimates to account for the possible underestimation of standard errors observed in single imputation procedures.³ Cases with missing information on the dependent variable (i.e., violent offending), and those without information on childhood victimization were excluded ($n = 1,206$). As a result, 91.6% of Wave III respondents were retained ($N = 13,116$).

Childhood Victimization

During the Wave III interview, Add Health respondents were asked to retrospectively report information on physical and sexual victimization that occurred during childhood.⁴ The following two questions were asked: "By

the time you started 6th grade, how often had your parents or other adult caregivers slapped, hit, or kicked you?” and “By the time you started 6th grade, how often had one of your parents or other adult caregivers touched you in a sexual way, forced you to touch him or her in a sexual way, or forced you to have sexual relations?” Responses to each question ranged from 0 (*this has never happened*) to 5 (*more than 10 times*), and approximately 29.9% of respondents reported experiencing at least one instance of childhood physical or sexual victimization.⁵ These questions were administered using audio computer assisted self-interview (A-CASI), which is thought to elicit more accurate reporting of sensitive information involving victimization and sexual encounters (Turner et al., 1998). To improve the accuracy of lifetime event data, the Wave III interview also used an event history calendar as a memory aid. Other incidents of physical and sexual victimization that occurred after respondents reached the sixth grade were not captured in the Add Health survey. Measures of childhood victimization in the Add Health were adapted from previous surveys and have been used frequently in the literature (see, for example, Hussey, Chang, & Kotch, 2006).

Consistent with our research objectives, the sample is split into several groups that reflect different forms and frequencies of childhood victimization. For physical abuse, these include respondents who experienced *no physical abuse* (70.9%, $n = 9,303$), a *low frequency of physical abuse* (meaning 1-2 times; 14.2%, $n = 1,856$), and a *high frequency of physical abuse* (meaning 3 or more times; 14.9%, $n = 1,957$). Similarly, for sexual abuse, we categorize respondents as those who experienced *no sexual abuse* (95.4%, $n = 12,510$), a *low frequency of sexual abuse* (1-2 times; 2.9%, $n = 379$), and a *high frequency of sexual abuse* (3 or more times; 1.7%, $n = 227$). We also developed categories to examine individuals who experienced both physical and sexual abuse. These include respondents who did *not experience both physical and sexual abuse* (96.2%, $n = 12,617$), those who reported a *low frequency of both physical and sexual abuse* (no more than two instances of each form of abuse; 1.8%, $n = 240$), and those who reported a *high frequency of both physical and sexual abuse* (experiencing both forms of abuse, at least one of which happened 3 or more times; 2.0%, $n = 259$). Individuals who experienced three or more instances of either physical or sexual abuse scored above the 90th percentile of childhood victimization in the Add Health data. Consistent with prior research on childhood exposure to trauma (e.g., van der Wal, de Wit, & Hirasing, 2003), this percentile was chosen as the cutoff point for the “high frequency” categorizations of child abuse. Sample statistics for all groups of childhood victims are available by contacting the authors.⁶

Violent Offending

The dependent variable, *violent offending*, is a four-item variety score that reflects whether participants committed the following types of violence during the year prior to the Wave III interview: “hurt someone badly in a physical fight,” “used or threatened to use a weapon to get something from someone,” “used a weapon in a fight,” and “pulled a knife or gun on someone.” All forms of violence were fairly rare in the full sample (5.5%, 2.0%, 1.8%, and 1.3%, respectively), and approximately 7.7% of Wave III respondents reported committing a violent offense at Wave III.⁷

Individual Protective Factors

To better understand heterogeneity in adult violence among victims of child abuse, the effects of several individual and social protective factors on violent offending are assessed. Specifically, we include four individual protective factors commonly associated with positive life outcomes: self-control, low depression, self-esteem, and verbal intelligence.

Self-control at Wave III is measured using nine items from the novelty-seeking dimension of Cloninger’s (1987) Tridimensional Personality Questionnaire (e.g., “I sometimes get so excited that I lose control of myself,” “I like it when people can do whatever they want, without strict rules and regulations”). These nine items are often used to measure self-control in early adulthood (see, for example, Turanovic, Reisig, & Pratt, 2015). Each item featured a 5-point response set, ranging from 1 (*very true*) to 5 (*not true*). The scale exhibits a high level of internal consistency ($\alpha = .87$), and is coded so that higher scores indicate higher levels of self-control. Principal components analysis indicated that the self-control scale was unidimensional ($\lambda = 4.34$; factor loadings $> .66$).

Low depression is measured using nine items from the 20-item Center for Epidemiologic Studies Depression (CES-D) scale (Radloff, 1977) that are available in the Add Health data. Participants were asked to report how often they experienced feelings related to depression in the past 7 days (e.g., “you were sad” [reverse-scored], “you cried a lot” [reverse-scored], “you enjoyed life”). Closed ended responses for each item ranged from 0 (*never/rarely*) to 3 (*most of the time/all of the time*), and were summed to create a scale where larger values reflect lower levels of depression (range 0-27; $\alpha = .81$). Previous research has shown the 20-item CES-D to cluster into four subfactors—somatic-retarded activity, depressed affect, positive affect, and interpersonal relationships (Ensel, 1986)—and all four components are represented in the nine items used here. The CES-D has been previously validated among

adolescents and adults (e.g., Radloff, 1991), and principal components analysis confirmed that the scale was unidimensional ($\lambda = 3.74$; factor loadings $> .44$).

Self-esteem is assessed using four items from Rosenberg's (1965) Self-Esteem Scale: "you have many good qualities," "you like yourself just the way you are," "you have a lot to be proud of," and "you feel like you are doing everything just about right." Items ranged from 0 (*strongly disagree*) to 4 (*strongly agree*), and were summed so that higher scores indicate higher levels of self-esteem (range 0-16; $\alpha = .78$). Prior research has shown the Rosenberg scale to be highly reliable (e.g., if a person completes the scale on two occasions, the two scores tend to be similar) and unidimensional (e.g., Baumeister, Campbell, Krueger, & Vohs, 2003). Principal components analysis confirmed that the items used here are associated with a single construct ($\lambda = 2.46$; factor loadings $> .74$).

Verbal intelligence is captured using respondents' age-normed Add Health Picture Vocabulary Test (PVT) score. Add Health PVT scores come from a shorter, computerized version of the Peabody Picture Vocabulary Test (Revised) that was administered to participants at the beginning of the Wave III interview. During this test, interviewers would read a series of words aloud, and respondents would select pictures that best fit the words' meanings. Each word in the PVT corresponded to four simple, black-and-white illustrations arranged in a multiple-choice format. There were 87 items in the Add Health PVT, and raw scores were standardized by age.

Social Protective Factors

In addition to the individual factors, five forms of social protective factors are also assessed at Wave III: marriage, job satisfaction, mentorship, religiosity, and educational attainment. These factors are considered protective as they can provide victimized children with supportive coping resources to overcome adversity (Agnew, 2006), and they can serve as important sources of restraint that prevent child victims from engaging in crime and violence later on.

Marriage reflects whether respondents were currently married at the time of the Wave III interview (1 = *yes*, 0 = *no*). Nearly 17.3% of young adults reported being married, and this proportion is consistent with estimates from the 2000 U.S. Census for young adults between the ages of 20 and 24 (Kreider & Simmons, 2003). Although data limitations prevent assessing the *quality* of these marriages (e.g., marital attachment, connectedness to spouse, and marital satisfaction), it is important to examine marital status in light of the body of work indicating that married persons are less likely to engage in crime than their unmarried counterparts (Sampson & Laub, 1993). Still,

because this measure cannot differentiate between people who have healthy marriages and those who do not, the effects of marriage observed here may be conservative (see, for example, Kuhl, Warner, & Wilczak, 2012).

Job satisfaction is captured using a single-item indicator for whether respondents had a job that they were satisfied with (1 = *yes*, 0 = *no*). Approximately 70.0% of young adults reported being employed at Wave III, and 53.2% of all respondents reported having a satisfying job. While job satisfaction is more commonly measured using different multi-item indexes (e.g., Hackman & Oldham, 1975), such scales were not available in the data. The use of a single global indicator of job satisfaction is consistent with prior research using the Add Health (e.g., Siennick, 2007).

Mentorship is captured using the following survey question at Wave III: "Other than your parents or step-parents, has an adult made an important positive difference in your life at any time since you were 14 years old?" (1 = *yes*, 0 = *no*). The majority of Wave III respondents indicated that an adult had made a positive difference in their life (75.8%), and, most commonly, these mentors came in the form of siblings and extended family members (34.7%), teachers/guidance counselors (19.7%), and friends (17.1%).

Three dichotomous indicators of *educational attainment* were included. At Wave III, respondents were asked to identify the number of years of schooling they had received, as well as the educational degrees they received. Using this information, the following indicators of highest level of educational attainment were created: *high school graduate* (35.4%), *some college* (36.8%), and *college graduate* (18.7%), where no high school degree serves as the reference category. College attendance included both 2-year and 4-year postsecondary institutions. Approximately 12.5% of participants at Wave III had not received a high school diploma or graduate equivalency degree.

Religiosity is a four-item summated scale composed of the following survey items at Wave III: "How important is your religious faith to you?" "How important is your spiritual life to you?" "To what extent are you a spiritual person?" and "To what extent are you a religious person?" Responses to each item ranged from 0 (*not at all/not important*) to 3 (*very/more important than anything else*), where higher values indicate greater religiosity ($\alpha = .88$). Principal components analysis confirmed that the items used to measure religiosity were unidimensional ($\lambda = 2.95$; factor loadings $> .83$).

Additional Explanatory Variables

Demographic variables and several important correlates of child abuse and violent offending are also included in the multivariate analyses. *Financial*

hardship is a three-item scale at Wave III reflecting whether respondents or someone in their household did not have enough money in the past year to: “pay the full amount of rent or mortgage,” “pay the full amount of a gas, electricity, or oil bill,” or “had services turned off by the gas or electric company or the oil company wouldn’t deliver because payments were not made.” Items were dummy-coded and summed to create an index where higher scores reflect greater financial hardship (range 0-3). Factor analysis of tetrachoric correlations confirmed that these items are associated with a single construct ($\lambda = 2.08$; factor loadings $> .76$). A single-item indicator of *childhood neglect* available in the data is also included that reflects how often, before the sixth grade, respondents’ parents or other adult caregivers “had not taken care of your basic needs, such as keeping you clean or providing food or clothing.” Closed ended responses to the childhood neglect item ranged from 0 (*never*) to 5 (*more than 10 times*), and 11.15% of respondents reported at least one instance of neglect. Finally, variables are included for *age* (the respondent’s age in years at Wave III), *male* (1 = *male*, 0 = *female*), and race/ethnicity (including *Black*, *Hispanic*, and *Other minority*, where non-Hispanic White serves as the reference category).

Analytic Strategy

The analyses proceed in two stages. First, several diagnostic tests are conducted to rule out the presence of harmful levels of collinearity. Next, a series of multivariate regression models are estimated to assess whether the individual and social protective factors reduce violent offending within each subsample of victims. As descriptive statistics indicate that the distributions for violent offending are overdispersed within each subsample of victims (e.g., $M = .18$, variance = .31 among those experiencing low frequency physical abuse), negative binomial regression is used (Long & Freese, 2006). The negative binomial model is a generalized linear regression model for count data that is appropriate to use when there is overdispersion in the dependent variable (i.e., when the conditional variance is greater than the mean; see Cameron & Trivedi, 2013; Hilbe, 2011).⁸

In addition, coefficient estimates and standard errors may be biased if features of the Add Health sampling design are not taken into account (Chen & Chantala, 2014). As a result, the multivariate models are estimated using the Wave III Add Health sampling weights adjusted for subpopulation analyses, and clustered robust standard errors that account for the school-based sampling design.⁹ All analyses are conducted using Stata 13 (StataCorp, College Station, TX).

Results

Before proceeding with the multivariate analyses, a series of model diagnostics were examined. Bivariate correlations between independent variables in all models did not exceed an absolute value of .40, and variance inflation factors were under 1.6. Furthermore, the condition index values did not exceed 28, which puts them beneath the commonly used threshold of 30 (Tabachnick & Fidell, 2012). According to this evidence, the relationships between independent variables should not result in biased estimates or inefficient standard errors due to multicollinearity.

Tables 1 to 3 display the negative binomial regression models predicting violent offending among the different groups of childhood victims—physical abuse victims, sexual abuse victims, and victims of both physical and sexual abuse. Each model is estimated using all of the individual and social factors to determine which have more “general” protective effects on violent offending across groups, and which tend to be more specific to particular types of childhood victims. For purposes of comparison, each table also includes a reference group of individuals who did not experience each type of childhood victimization.¹⁰

Childhood Physical Abuse

Table 1 displays the effects of various protective factors on violent offending according to the amount of physical abuse experienced. As can be seen, several key variables are negatively related to violent offending for victims of low and high frequency physical abuse in Models 2 and 3. In particular, self-control reduces violent offending across both groups of victims, where incidence rate ratios (IRR) from Models 2 and 3 indicate that a one unit increase in self-control decreases the rate of violent offending by 7% (IRR = .93) for those who experienced a low frequency of physical abuse, and by 4% (IRR = .96) for those who experienced a high frequency of physical abuse.¹¹ In addition, low depression is negatively related to violent offending for both low frequency (IRR = .95) and high frequency (IRR = .93) physical abuse victims. Being married (IRR = .48), attending college (IRR = .53), and graduating college (IRR = .29) also emerged as protective factors against violence, but only for individuals who experienced a high frequency of physical abuse (see Model 3). Thus, while the protective effects of marriage and educational attainment are specific to victims of high frequency physical abuse, the effects of self-control and depression appear to be protective for both groups of physical abuse victims examined in Models 2 and 3. However, upon closer

Table 1. Negative Binomial Regression Models Predicting Violent Offending by Frequency of Physical Abuse.

Variables	Violent Offending in Early Adulthood					
	No Physical Abuse in Childhood		Low Frequency Physical Abuse		High Frequency Physical Abuse	
	Model 1		Model 2		Model 3	
	<i>b</i> (SE)	<i>z</i>	<i>b</i> (SE)	<i>Z</i>	<i>b</i> (SE)	<i>z</i>
Self-control	-0.06 (.01)	-6.10**	-0.07 (.01)	-5.78**	-0.04 (.02)	-2.06*
Low depression	-0.04 (.02)	-2.52*	-0.05 (.02)	-2.12*	-0.07 (.02)	-2.81**
Self-esteem	-0.03 (.03)	-1.02	-0.03 (.05)	-0.66	0.04 (.03)	1.19
Verbal intelligence	-0.04 (.03)	-1.44	-0.07 (.04)	-1.94	0.07 (.04)	1.83
Marriage	-0.52 (.23)	-2.29*	0.26 (.33)	0.79	-0.74 (.34)	-2.19*
Job satisfaction	0.30 (.24)	1.27	-0.52 (.21)	-1.24	0.18 (.26)	0.71
Mentorship	-0.02 (.16)	-0.16	0.12 (.23)	0.52	-0.11 (.26)	-0.44
Religiosity	-0.03 (.02)	-1.41	-0.01 (.03)	-0.18	-0.03 (.04)	-0.91
High school grad	-0.24 (.21)	-1.14	0.29 (.30)	0.99	-0.17 (.29)	-0.59
Some college	-0.87 (.25)	-3.44**	0.15 (.31)	0.49	-0.64 (.29)	-2.24*
College grad	-0.76 (.29)	-2.62**	0.04 (.46)	0.08	-1.24 (.46)	-2.68**
Financial hardship	-0.04 (.11)	-0.33	0.03 (.14)	0.18	0.21 (.18)	1.17
Childhood neglect	0.02 (.08)	0.19	0.06 (.07)	0.77	0.01 (.06)	0.11
Age	-0.11 (.04)	-2.57*	-0.10 (.06)	-1.52	-0.14 (.07)	-2.13*
Male	1.10 (.22)	4.98**	1.69 (.26)	6.45**	0.89 (.23)	3.84**
Black	0.72 (.20)	3.68**	0.73 (.25)	2.95**	0.87 (.26)	3.35**
Hispanic	0.32 (.21)	1.56	0.38 (.27)	1.37	0.04 (.29)	0.14
Other minority	0.04 (.26)	0.14	0.18 (.46)	0.40	0.09 (.34)	0.25
<i>F</i> test	15.97**		17.68**		9.62**	
<i>N</i>	9,303		1,856		1,957	

Note. Entries are unstandardized partial regression coefficients (*b*), clustered robust standard errors in parentheses, and *z* tests. Coefficients and standard errors for verbal intelligence are multiplied by 10 for ease of interpretation.

p* < .05. *p* < .01 (two-tailed test).

examination, differences can be detected.¹² More specifically, the protective effects of self-control on violence are weaker for individuals who experienced a high frequency of physical abuse ($z = |3.33|$, $p < .01$). In contrast, the effects of low depression do not vary by frequency of physical abuse.

Table 2. Negative Binomial Regression Models Predicting Violent Offending by Frequency of Sexual Abuse.

Variables	Violent Offending in Early Adulthood					
	No Sexual Abuse in Childhood		Low Frequency Sexual Abuse		High Frequency Sexual Abuse	
	Model 1		Model 2		Model 3	
	<i>b</i> (SE)	<i>z</i>	<i>b</i> (SE)	<i>z</i>	<i>b</i> (SE)	<i>Z</i>
Self-control	−0.06 (.01)	−7.00**	−0.04 (.01)	−2.76**	−0.08 (.04)	−2.22**
Low depression	−0.05 (.02)	−3.42**	−0.02 (.03)	−0.85	−0.18 (.06)	−2.73**
Self-esteem	−0.02 (.02)	−0.83	−0.06 (.06)	−0.91	−0.01 (.03)	−0.39
Verbal intelligence	−0.01 (.02)	−0.64	−0.06 (.05)	−1.07	−0.03 (.02)	−1.71
Marriage	−0.45 (.18)	−2.44*	0.28 (.42)	0.65	−1.16 (1.35)	−0.86
Job satisfaction	−0.16 (.19)	−0.85	−0.67 (.36)	−1.86	−0.44 (.42)	−1.06
Mentorship	0.05 (.13)	0.37	−0.08 (.29)	−0.27	0.70 (.38)	1.87
Religiosity	−0.04 (.02)	−2.16*	0.05 (.04)	1.19	−0.15 (.08)	−1.92
High school grad	−0.09 (.18)	−0.48	0.13 (.35)	0.37	−1.07 (.56)	−1.90
Some college	−0.65 (.19)	−3.36**	0.51 (.40)	1.27	−0.71 (.57)	−1.24
College grad	−0.64 (.25)	−2.58*	−0.06 (.51)	−0.11	−5.02 (.83)	−6.08**
Financial hardship	0.04 (.10)	0.40	−0.01 (.21)	−0.05	1.28 (.68)	1.87
Childhood neglect	−0.01 (.05)	−0.21	−0.01 (.12)	−0.03	0.23 (.13)	1.72
Age	−0.11 (.04)	−3.25**	−0.07 (.08)	−0.82	−0.11 (.20)	−0.55
Male	1.19 (.16)	7.52**	1.49 (.30)	4.71**	2.27 (.72)	3.16**
Black	0.79 (.15)	5.23**	0.52 (.30)	1.75	0.60 (.51)	1.19
Hispanic	0.30 (.18)	1.61	0.26 (.47)	0.56	1.69 (.73)	2.30*
Other minority	0.06 (.22)	0.30	0.95 (.77)	1.22	−0.76 (.47)	−1.63
<i>F</i> test	25.90**		4.60**		5.23**	
<i>N</i>	12,510		379		227	

Note. Entries are unstandardized partial regression coefficients (*b*), clustered robust standard errors in parentheses, and *z* tests. Coefficients and standard errors for verbal intelligence are multiplied by 10 for ease of interpretation.

* $p < .05$. ** $p < .01$ (two-tailed test).

Childhood Sexual Abuse

Table 2 presents findings with respect to the frequency of sexual abuse victimization during childhood. As seen in Models 2 and 3, several statistically significant protective effects emerge. Self-control reduces violent offending among individuals who experienced a low frequency of sexual abuse (IRR = .96) and a high frequency of sexual abuse (IRR = .92) during childhood. Having low depression (IRR = .84) and graduating from college (IRR = .01)

Table 3. Negative Binomial Regression Models Predicting Violent Offending by Frequency of Physical and Sexual Abuse.

Variables	Violent Offending in Early adulthood					
	No Physical and Sexual Abuse in Childhood		Low Frequency Physical and Sexual Abuse		High Frequency Physical and Sexual Abuse	
	Model 1		Model 2		Model 3	
	<i>b</i> (SE)	<i>z</i>	<i>b</i> (SE)	<i>z</i>	<i>b</i> (SE)	<i>z</i>
Self-control	-0.06 (.01)	-6.99**	-0.03 (.01)	-2.56*	-0.05 (.02)	-2.44*
Low depression	-0.05 (.01)	-3.43**	-0.02 (.03)	-0.56	-0.12 (.04)	-3.28**
Self-esteem	-0.02 (.02)	-0.81	-0.04 (.06)	-0.68	0.09 (.06)	1.59
Verbal intelligence	-0.01 (.02)	-0.62	-0.05 (.06)	-0.85	-0.03 (.08)	-0.44
Marriage	-0.45 (.18)	-2.45*	-0.58 (.39)	1.50	0.10 (.55)	0.18
Job satisfaction	-0.18 (.19)	0.94	-0.23 (.38)	-0.61	-0.95 (.42)	-2.24*
Mentorship	0.05 (.13)	0.37	0.02 (.27)	0.09	0.10 (.39)	0.26
Religiosity	-0.04 (.02)	-2.19*	0.09 (.05)	1.84	-0.04 (.05)	-0.87
High school grad	-0.09 (.18)	-0.48	0.12 (.36)	0.32	-0.66 (.37)	-1.78
Some college	-0.66 (.19)	-3.40**	0.62 (.33)	1.90	-0.57 (.44)	-1.30
College grad	-0.65 (.25)	-2.60**	0.01 (.51)	0.02	-5.15 (.89)	-5.77**
Financial hardship	0.04 (.10)	0.42	-0.04 (.23)	-0.19	0.32 (.25)	1.24
Childhood neglect	-0.01 (.08)	0.30	0.08 (.16)	0.50	0.21 (.12)	1.76
Age	-0.10 (.05)	-0.28	-0.09 (.08)	-1.03	0.05 (.09)	0.58
Male	1.20 (.16)	7.58**	1.21 (.31)	3.84**	1.91 (.37)	5.17**
Black	0.79 (.15)	5.33**	0.24 (.33)	0.72	0.31 (.43)	0.73
Hispanic	0.29 (.18)	1.60	0.19 (.43)	0.45	0.35 (.37)	0.97
Other minority	0.07 (.22)	0.30	1.01 (.70)	1.44	-0.04 (.54)	-0.09
<i>F</i> test	26.06**		2.57**		4.52**	
<i>N</i>	12,617		240		259	

Note. Entries are unstandardized partial regression coefficients (*b*), clustered robust standard errors in parentheses, and *z* tests. Coefficients and standard errors for verbal intelligence are multiplied by 10 for ease of interpretation.

p* < .05. *p* < .01 (two-tailed test).

are also negatively related to violence, but only among individuals who experienced a high frequency of sexual abuse (see Model 3). Similar to the pattern of findings observed with respect to physical abuse in Table 1, the effects of self-control on violent offending vary between high frequency and low

frequency abuse victims. Specifically, self-control has a significantly weaker effect on violent offending among individuals who experienced a high frequency of childhood sexual abuse ($z = |2.43|, p < .05$).

Childhood Physical and Sexual Abuse

The models presented in Table 3 assess violent offending across groups of individuals who experienced a combination of both physical and sexual abuse during childhood. In keeping with the pattern of findings thus far, self-control reduces violence among individuals who experienced low (IRR = .97) and high (IRR = .95) frequencies of both physical and sexual abuse (see Models 2 and 3). In addition, low depression (IRR = .89), job satisfaction (IRR = .39), and graduating from college (IRR = .01) also emerge as protective factors against violent offending, but these effects are specific to individuals who experienced high frequencies of abuse (see Model 3). Although self-control reduced violence among both groups of victims assessed in Table 3, invariance tests revealed that the effects of self-control on violent offending are weaker among high frequency abuse victims ($z = |2.60|, p < .01$).

Additional Analyses

Despite the robustness of the results to listwise deletion and selection effects (see Notes 3 and 10), a series of supplemental analyses were conducted (not shown in table form). In particular, models were estimated separately for men and women to determine whether the findings were sensitive to using a mixed-gender sample (e.g., Topitzes et al., 2012). Indeed, men are responsible for perpetrating the majority of violent offenses, and it is possible that the impact of protective factors vary by gender (e.g., Belknap, 2015). Accordingly, gender-specific analyses were estimated for subtypes of victims where the sample sizes were large enough to accommodate all covariates in a stable way. This excluded groups of victims who experienced high frequencies of sexual abuse, and those who experienced low and high frequencies of both physical and sexual abuse.¹³

These supplemental analyses revealed that findings were generally similar across men and women. Consistent with the results presented previously, self-control reduced violent offending across all groups of male and female victims assessed, and low depression was linked to lower violence among high frequency victims of physical abuse. Nevertheless, some differences arose with respect to females who experienced three or more instances of physical abuse. For such women, going to college and graduating college were no longer related to violent offending (compare with Table 1, Model 3).

Despite these differences, the findings remained similar across both male and female victims of child abuse. Taken altogether, there is a great deal of heterogeneity in violent offending among victims of physical and sexual abuse, and several prosocial individual and social factors can help explain why some victims of child abuse are more likely to engage in violence in early adulthood than others.

Discussion

The debate over the existence of a cycle of violence has gone on for decades. Such a reality led Thornberry and colleagues (2012, p. 145) to lament “there are almost as many review pieces as there are original studies.” One thing seems clear: Abused children are at an increased risk for perpetrating future violence as adults. The *strength* of this relationship can be debated for another several decades, but doing so misses an opportunity to understand why future violence among previously victimized children is not an absolute certainty. Most abused children do not complete the cycle, and we know surprisingly little about why that is the case—especially when it comes to identifying malleable protective factors. The current study sought to build on the limited literature by examining the protective factors that reduce violent offending among young adults who were previously abused in childhood. Our work here leads to three broad conclusions.

First, a number of protective factors reduced the likelihood of violent offending among victims of child abuse. The most consistent and strongest of these factors was the individual protective factor of self-control. This finding is consistent with the broader criminological literature that documents a strong relationship between low self-control and criminal behavior (Pratt & Cullen, 2000), as well as that which links victimization, low self-control, and future criminal behavior (Turanovic & Pratt, 2013). We add to this literature by finding that self-control may reduce offending for victims of abuse. Stated differently, building self-control among abused children may be a way of breaking the cycle of violence. And although self-control was a consistent predictor in all models, we note that it was a weaker predictor of violence in some subsamples (especially among individuals who were abused more frequently). The individual protective factor of low depression and the social protective factors of job satisfaction, attending college, and graduating from college emerged as protective factors in one or more of our models. The cycle of violence is not inevitable, and these protective factors offer ways it may be broken.

Second, certain factors may be protective for some forms and extents of abuse but not others. Social protective factors were more protective among

those young adults who had been frequently abused as children. Indeed, no social protective factors were significant in any models examining individuals who experienced a low frequency of abuse. This pattern is somewhat at odds with research that suggests that social factors are more critical for resilience in nonabused children (and perhaps less serious cases of abused children) whereas personality characteristics and self-esteem processes are more important for resilience in abused children (Cicchetti & Rogosch, 1997). Our results suggest that self-control in particular is less protective among children who were more frequently abused, and factors such as education and job satisfaction mattered more for these victims (see also Jaffee et al., 2007). And even among the social factors, the protective impact varied depending on the type, frequency, and comorbidity of abuse. Marriage was protective among victims who had a high frequency of physical abuse but not among other victims. Job satisfaction was protective among victims who were both physically and sexually abused at a high frequency but not among victims experiencing either type of abuse separately at a high frequency. The broader implication of this pattern of results is that remaining resilient to the negative consequences of abuse is not a “one size fits all” endeavor.

Third, the dynamic protective factors in our model suggest specific programming implications for those who may be interested in intervening in the lives of abused children. The pattern of self-control being significant in all of our models is consistent with research documenting self-regulation as a protective factor in adaptation by childhood victims (Cicchetti & Rogosch, 1997). Based on this finding, emotion and behavior regulation training may be beneficial toward reducing the likelihood of future violence perpetration among victims of child abuse (Haskett et al., 2006; Topitzes et al., 2013; Topitzes et al., 2012). The self-control criminological literature suggests a number of promising ways to increase and strengthen self-control (Piquero, Jennings, & Farrington, 2010). Beyond the self-control finding, our models suggest additional protective factors that may be promoted based on type and extent of abuse—a conclusion that affirms that different types of victims may respond to treatment differently (Cicchetti, 2004). Individual resources alone may not be enough to promote resilience among young adults who experienced multiple forms and higher frequencies of abuse (Jaffee et al., 2007), and it is encouraging that our results suggest a number of social protective factors may break the cycle of violence for those who experienced more severe forms of abuse.

We believe our findings have an even greater importance when considering the full extent of child abuse in America. It cannot be assumed that all abused children will come to the attention of social service agencies and receive the appropriate programming. Indeed, the very reason we used

nationally representative, self-report data was to capture these hidden victims who likely would never be identified as abused. It seems pertinent, then, that some of the policy implications from our findings are those that can be emphasized among the general population—with the added benefit being that they could potentially break the cycle of violence among abused children specifically. For example, a focus on eliminating truancy and encouraging high school completion—a necessary step before attaining the additional protective factors of higher education—may be especially critical for youth who were previously abused (Johnson, Wright, & Strand, 2012; see Tanaka, Georgiades, Boyle, & MacMillan, 2015).

While we were able to shed light on the processes that shape whether victims of abuse can remain resilient, we also hope that our work prompts additional research that may address some of the things we could not. For example, although our data allow us to examine abuse that may have gone undetected and provide a sufficient number of cases to look at specific subtypes of abuse, a prospective longitudinal study within a community sample is typically regarded as the gold standard for this type of research (Thornberry et al., 2012). In addition, we have the same actor report on both abuse and violence, and retrospective recall bias could introduce additional threats to the validity of our findings (Heller et al., 1999; Widom, 1989b; see also Note 4). The simple truth is that there are going to be strengths and weaknesses to any type of approach taken. Both child abuse and adult violence could be underreported when using official records, and asking children about their possible abuse presents serious ethical and logistical issues.

We have also used a relatively limited measure of resilience given our focus on the cycle of violence. It is possible that these adults are not truly resilient in other areas such as cognitive and emotional functioning (McGloin & Widom, 2001). Relatedly, our measure of childhood victimization could include elements such as exposure to violence (Sousa et al., 2011), our measure of violence could include elements such as family violence and intimate partner violence (Tomsich, Jennings, Richards, Gover, & Powers, 2015), and future studies could also include additional individual, familial, and community protective factors identified in the literature (Caspi et al., 2002). Finally, it is likely that the victimization, protective factors, and resilience linkages operate differently across race and ethnicity. This is an important avenue for future research, but that research should not simply consider race or ethnicity as risk or protective factors. Instead, future work should examine how modifiable risk factors are *conditioned* by race and ethnicity. This approach may take us closer toward understanding how to break the cycle of violence among those children who may be most at risk.

No one can dispute that the effects of child abuse (including future violence) are substantial, and work moving forward should continue to try to understand the potential cycle of violence that abuse may set in motion. That said, rather than simply examining whether that cycle occurs, it is important that future research also examine *how* that cycle may be broken. In recent years, the field of criminology has seen a renewed interest in explaining the negative cases that do not conform to theoretical expectations (Sullivan, 2011; Wright & Bouffard, 2016). We began our work by stating that we were going to look at the negative cases in the cycle of violence—those individuals who could be expected to perpetrate future violence given their previous abuse, yet do not. The truth is that these are not actually the negative cases as most abused children do not go on to future violence. These cases deserve more scholarly attention, and they may be able to teach us about the protective factors necessary to break the cycle of violence for those less fortunate.

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Notes

1. We conceive of resilience as “successful adaptation or development during or following adverse conditions” (Masten & Wright, 1998, p. 10). We use the term

- “resilience” within the cycle of violence to connote a successful adaptation in young adulthood (i.e., being less likely to engage in violence given one’s exposure to childhood victimization) rather than “resiliency,” which suggests a personality trait (McGloin & Widom, 2001, p. 1022).
2. For more information on the National Longitudinal Study of Adolescent to Adult Health (Add Health) sample, research design, survey content, and data quality, see <http://www.cpc.unc.edu/projects/addhealth/data/guides/DesignPaperWIIIV.pdf>
 3. To determine the robustness of the findings, supplemental analyses were conducted using listwise deletion to handle missing data. The results closely mirrored those observed using multiple imputation, and findings were the same in terms of sign and significance.
 4. It is possible that retrospective accounts of child abuse might result in over- or underreporting abuse as respondents might “forget” or redefine their experiences in light of later life circumstances and their current situation. Based on previous research, we suspect that abuse is underreported in this sample (Widom & Morris, 1997; Widom & Shepard, 1996). Nevertheless, Add Health prevalence estimates of child physical and sexual abuse are generally consistent with those from other national surveys (see, for example, Boney-McCoy & Finkelhor, 1995).
 5. We focus here on the type and frequency of abuse as no additional information was captured on the contexts surrounding each instance of childhood victimization (i.e., when and where it occurred, who the perpetrator was, and whether there were injuries) that could tap into dimensions of severity or chronicity.
 6. We do not explicitly examine neglect as a form of child victimization. We agree with other scholars who argue that child neglect is a more general problem of inadequate parenting (Dodge, Bates, & Pettit, 1990) and that it reflects an act of omission rather than commission (Cicchetti & Rogosch, 1997). Indeed, we examine here the cycle of violence with respect to childhood victimization: Violence inflicted upon children will result in them inflicting violence on others in adulthood. Nevertheless, given that neglect represents the most commonly reported type of child maltreatment, we include it as an important explanatory variable in all regression models.
 7. According to Sweeten (2012, p. 554), variety scores are the preferred way to measure criminal offending because they “possess high reliability and validity, and are not compromised by high frequency non-serious items in the scale.”
 8. The negative binomial model has the same mean structure as the Poisson model, but it includes an extra parameter to model overdispersion (see Hilbe, 2011). If applied to overdispersed data, Poisson regression can result in underestimated standard errors and spuriously large z values (Long & Freese, 2006). Because there is overdispersion in violent offending (our dependent variable), the negative binomial model is a good fit for the data.
 9. The Add Health sampling weights are used to address potential bias originating from differential sampling probabilities and attrition, and to prevent the underestimation of standard errors. For more detailed guidelines on analyzing

- the Add Health data, see <http://www.cpc.unc.edu/projects/addhealth/data/guides/wt-guidelines.pdf>
10. Additional models were estimated to rule out issues with sample selection bias. As individuals within each subsample of victims were not selected by random assignment, it is possible that the results could be biased in several ways (Bushway, Johnson, & Slocum, 2007). Accordingly, models were estimated using *setpoisson* in Stata 13 (Miranda, 2012). This involved the estimation of a probit model with exclusion restrictions for selection into each subsample, which was estimated simultaneously with a second-stage Poisson regression model predicting violent offending. The *setpoisson* model forces overdispersion in the dependent variable to guard against the underestimation of standard errors observed in standard Poisson regression. The findings remained the same in terms of sign and significance, and likelihood ratio tests of independent equations for these models indicated that sample selection was *not* a detectable source of bias.
 11. Exponentiating the negative binomial regression coefficient gives us the incident rate ratio (IRR).
 12. Comparisons between models were conducted using the test statistic recommended by Brame, Paternoster, Mazerolle, and Piquero (1998) for maximum-likelihood regression coefficients, where $z = (\theta_1 - \theta_2) / \sqrt{SE\theta_1^2 + SE\theta_2^2}$.
 13. Specifically, there were 65 males who experienced a high frequency of sexual abuse, 90 females who experienced low frequencies of both physical and sexual abuse, and 96 males who experienced a high frequency of both physical and sexual abuse during childhood. Given that females are overrepresented in the high frequency sexual abuse groups, additional research with a larger number of sexual abuse victims could examine whether the protective factors are gendered for these subgroups.

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