Published in final edited form as:

Vict Offender. 2013 April 1; 8(2): 231–252. doi:10.1080/15564886.2012.755139.

The sustained impact of adolescent violence histories on early adulthood outcomes

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Abstract

A history of victimization and violence perpetration are well-established risk factors that hamper positive development in early adulthood, yet their separate and overlapping effects are rarely examined simultaneously, confounding understanding of their relative impacts. This study follows a diverse sample of at-risk adolescents ($N=570$) into early adulthood, comparing roles and resources, stress and distress, and maladaptive behaviors for those with a history of no violence, victimization only, perpetration only, and both perpetration and victimization. Results demonstrate four distinctive profiles, although all violence-exposed youth report more problems in the three assessed domains relative to those with no violence histories. Implications for intervention are discussed.

Keywords

Early adulthood; violence; victimization; development

Violent victimization and perpetration remain serious public health problems in the United States, with violence prevalence being the highest in the period between adolescence and young adulthood (Bureau of Justice Statistics, 2006). Violence experiences can be damaging to both victims and perpetrators; both are linked to emotional and mental health problems, difficulties in employment, criminal behaviors and consequences, and educational attainment in adulthood (Mun, Windle, & Schainker, 2008; Odgers et al., 2008).

Despite well-established links between the experiences of violence victimization and perpetration (e.g., Maas, Herrenkohl, & Sousa, 2008), victimization and perpetration are almost universally investigated as separate foci. This orientation hampers greater understanding of both phenomena, limits advancement of theory regarding their connections, and markedly hinders the development of effective intervention programs. In a rare examination of the combined and distinctive effects of victimization and perpetration histories on adolescent well-being, Logan-Greene et al. (2010) found that violence-exposed youth reported elevated levels of emotional distress and other psychosocial functioning problems. Although youth with histories of violent behavior only were equivalent to those with histories of victimization only on most psychosocial outcome measures, youth who reported perpetrating violence had significantly lower levels of protective factors. Notably, youth with histories of both victimization *and* violent behaviors fared worse on almost every

indicator of psychosocial functioning (greater risk and lesser protective resources). These findings echo the results two earlier studies (e.g., Cuevas Finkelhor, Turner, & Ormrod, 2007; Flannery, Singer, & Wester, 2006), underscoring the need to examine more systematically the prevalent overlap of victimization and violent behaviors.

Research on victimization and perpetration during the transition to adulthood is similarly disconnected, with prior victimization recognized as a significant predictor of aggression and violent behavior (e.g., Fagan, 2005), but with the joint or overlapping contributions of these frequently co-occurring experiences on young adulthood outcomes rarely distinguished. The present study seeks to fill this knowledge gap by assessing the sustained effects in early adulthood of differential violence exposure histories reported in adolescence. This research is essential to determine the independent and combined impact of earlier life violence exposure forms for psychosocial health in adulthood, and to inform the design of interventions attentive to varying violence histories.

Vulnerable Populations in Early Adulthood

Recent scholarship demonstrates that early adulthood is a critical period of time in development, lengthened in the U.S. by cultural changes that provide adolescents more time to explore options before taking on adult roles such as marriage, parenting, and career choices (Mortimer & Larson, 2002). Indeed, contemporary youth who marry or have children while still young are more likely to have troubling finishing high school and postsecondary degrees, and are at increased risk of divorce (Macmillan & Eliason, 2003). The transition to adulthood also yields opportunities both for the interruption of negative behavioral trajectories, such as histories of delinquency or violence, or for the occurrence of deleterious events that may increase the likelihood of developmental problems (Berzin, 2010; Schulenberg, Bryant, O'Malley, 2004). How to determine which individuals will demonstrate resilience versus those who will experience continuing difficulties during this transition is a matter of ongoing empirical debate (Masten et al., 2004; Mun et al., 2008).

Our understanding of vulnerable populations during this developmental period is inadequate, as most research focuses either on normative populations (e.g., Arnett, 2001; Mortimer & Larson, 2002) or on system-involved youth, such as children aging out of the welfare systems or those involved in the juvenile justice system (e.g., Keller, Cusick, & Courtney, 2007; Osgood, Foster, Flanagan, & Ruth, 2005). Research demonstrates that the resources available to young people in this transitional developmental stage, such as educational and networking opportunities for entry-level jobs, can have lasting effects on outcomes throughout adulthood (Masten et al., 2004; Shanahan, 2000). Fiscal and educational resources tend to be associated with greater levels of social and familial support, also known to be linked to successful outcomes in young adulthood. Thus, individuals with fewer resources enter young adulthood at a disadvantage, which may be exacerbated with the emotional and behavioral difficulties associated with experiences of violence (Carbonell et al., 2005).

The present study targets a youth population that reflects the gap in population focus between the general population and more criminologically and clinically defined subpopulations. Participants were recruited on the basis of risk for high school dropout, which corresponds with multiple types of psychosocial risk, including substance use, emotional distress, and suicide risk (Herting, 1990; Wickrama, Conger, Wallace, & Elder, 2003), and demonstrated for this sample relative to nationally representative samples (Eggert & Herting, 1993). Thus, these individuals represent those at increased risk for entering into clinical and/or criminological settings, however they may yet progress in the direction of resilience.

Stress, Violence, and Risks in Adulthood

Childhood experiences of adversity are theorized to have potentially lasting, negative impacts on a broad range of outcomes throughout the life span. These include negative physical and mental health outcomes, risky behaviors, and other problems in functioning, such as employment or relationship difficulties (Matthews, Gallo, & Taylor, 2010). Several researchers have theorized about the mechanisms underlying these long-term consequences of childhood adversity. Pearlin and colleagues (2005) proposed that stressful and traumatic events early in the life course, particularly those that are chronic, have a tendency to lead to additional, secondary stressors. This process, called stress proliferation, may result in sustained emotional dysregulation and furthering negative cascades across a wide range of psychosocial domains. These findings are supported by many lines of research, including investigations of the physiological responses to persistent stress in childhood (e.g., Evans, 2003).

Childhood maltreatment is viewed as one of the most damaging adverse early life experiences (Edwards, Holden, Felitti, & Anda, 2003). This is particularly true for youth who also experience other adversities, such as family distress and social disadvantage (Menard, Bandeen-Roche, & Chilcoat, 2004; Shonkoff, Boyce, & McEwen, 2009). A less well-recognized contributor to stress and distress is one's own engagement in aggressive or violent behavior. However, numerous investigations have demonstrated that violence also stems from similarly disadvantaged and stressful backgrounds. Moreover, a large proportion of youth who report involvement in violent behaviors also have histories of victimization (Maas et al., 2008). For this reason, the present study conceptualizes engagement in violence within a stress and distress framework, congruent with prior examinations (Logan-Greene, Nurius, & Herting, et al., 2011).

In the present study, we focus on three broad areas of assessment for early adulthood functioning: roles and resources, stress and distress, and maladaptive behaviors. Each of these assessment areas may be viewed within a stress proliferation framework as indicative of psychosocial functioning. Roles and resources, for the most part, indicate areas that may provide amelioration to any life stress, such as coping skills and other personal resources. The transition to adulthood is marked by important changes in roles, including transitioning to independent housing, partnering or marrying, and becoming a parent. Recent scholarship suggests that premature transitions (e.g., early parenting) both occur more frequently among those with histories of adversity and maltreatment, and may also lead to more deleterious outcomes, such as divorce and troubled parent-child relationships (Foster, Hagan, & Brooks-Gunn, 2008; Haynie, Petts, Maimon, & Piquero, 2009). Failure to achieve academic goals can have similarly lasting impact on later adulthood (Shanahan, 2000). Conversely, resources such as positive relationships and educational achievement may serve as protective factors in early adulthood (Schulenberg et al., 2004).

High levels of life stress and maladaptive behaviors indicate problems in adjustment. Emotional distress is an indication of problems in psychosocial functioning and is associated with both histories of victimization and violent behaviors (Brown, Craig, Harris, Handley, & Harvey, 2007; Logan-Greene, Nurius, & Herting et al., 2011). As described above, high levels of stress and emotional distress can, if not ameliorated, further contribute to problems and cascading risks for maladaptive behaviors. Maladaptive behaviors include substance use, illegal behaviors, and continued engagement in violent behaviors. Both previously victimized and aggressive youth are at increased risk of substance use problems (Kilpatrick et al., 2003; Mun et al., 2008). We examine these sets of outcomes both as indicators of the potential for more serious criminal engagement, and as assessment for current maladaptive behaviors.

The Present Study

This study tests whether histories of violence exposure in adolescence carry forward and have sustained impact on early adulthood psychosocial functioning. In earlier research, we found substantial differences among adolescent risk and protective factors based on whether study participants reported experiences with violent victimization, violence perpetration, both, or neither (Logan-Greene et al., 2010). Here we examine the same groups approximately five years later using a similar assessment, but expanded to include measures of adult roles and resources, stress and distress, and maladaptive behaviors. Based on the adolescent findings, we hypothesized that youth exposed to any violence would generally continue to exhibit difficulties across multiple domains of functioning in early adulthood. We anticipated that those with histories of victimization only would report predominately internalizing problems, such as depression, as well as precocious role entry/exits. For those with histories of violence perpetration only we anticipated continuation of antisocial behaviors, such as illegal behaviors and substance use, in addition to continued deficits in protective factors such as personal resources. Finally, we anticipated that those with histories of both victimization and violence perpetration compared to all other groups would continue to show the greatest negative impact in functioning across all domains assessed.

Methods

Sample and Procedures

Study participants were initially recruited in 1996 while in the 9th through 12th grade in urban high schools in the Northwest and Southwest regions of the United States ($N=570$). Students were eligible for recruitment if they met established criteria for risk of school failure or dropout (Herting, 1990), which resulted in youth samples with a constellation of elevated risk factors/behaviors and diminished levels of protective factors, consistent with others' research regarding the multi-problem profiles that are typical of youth teetering on the cusp of academic failure (Jones, Brown & Aber, 2011; Miles & Stipek, 2006). Following IRB-approved guidelines and procedures, a random sample drawn from the recruiting pool was invited to participate; students were invited in person at the schools, parents via telephone calls. Potential participants completed informed consent/assent forms regarding survey content, voluntary participation, and monetary compensation.

Study participation was high; 87% of the youth invited to participate completed the survey. Interviews were in-person, standardized, conducted by master's level clinicians, monitored for fidelity, and documented to ensure consistency. Approved protocols were followed with respect to minors at risk and mandatory reporting. Follow-up surveys were administered five years later (Mean age = 20.6 years), with 68% of the original sample participating. Although this participation rate is slightly lower than rates reported with general community samples, the rate is probably reflective of the recognized instability of this at-risk sample (Rohrbach, Sussman, Dent, & Sun, 2005). The follow-up surveys were conducted by phone, and participants were compensated for their time. Participation in the follow-up varied significantly by race/ethnicity, with slightly higher retention for Caucasian participants than for participants from other racial and ethnic backgrounds (70.8% versus 64.2%; $\chi^2 = 5.24$ $p = 0.022$). No significant differences in study attrition were found by sex, violence exposure history, or other demographics. Importantly, a range of adolescent risk and protective factors were tested for attrition differences, and no patterns of differential attrition were detected. In the final sample, 47.5% were female, 39.8% were Caucasian, 19.9% were Latino, 15.8% were African American, 8.3% were Native American, 8.1% were Asian/Pacific Islander, and 7.0% were mixed or other race/ethnicity.

Measurement

Data were collected using items adapted from established scales (e.g. Rosenberg's Self-esteem Scale, the CES-D) or scales constructed specifically for this population (e.g. the Drug Involvement Scale). The measures have been tested and analyzed extensively for reliability, ease of use, interpretability, and developmental appropriateness (Eggert, Thompson, & Herting, 1994; Walsh, Randell, & Eggert, 1997). All measures, unless otherwise indicated, used a 7-point response options (scaled 0 to 6, where higher values indicated higher values of the variable). Specific measures are described below.

Violence history—Formation of four adolescent violence victimization/perpetration groups used criteria consistent with previous studies that stressed the salience of polyform victimization on negative outcomes, as well as the recognition that some level of aggressive behavior is typical in adolescence (Cuevas et al., 2007; Finkelhor, Ormrod, Turner, & Hamby, 2005; Nurius, Russell, Herting, Hooven, & Thompson, 2009). *Violence victimization* history was assessed using an index based on five items: two witnessing (parental violence toward a family member, family member destroying things) and three directly experiencing (physical abuse, sexual abuse, and physical injury) ($M = 1.07$, $SD = 0.70$, $\alpha = 0.70$). As exposure to multiple types of victimization experiences has been shown to be particularly detrimental (e.g., Nurius et al., 2009), victimization was defined as exposure to two or more different forms of violence or to any one form at higher frequency (3 or higher on a 0–6 scale). A history of *violence perpetration* was assessed with a six item measure: physically injuring someone else, thinking about hitting someone when angry, physically or emotionally harming a member of the opposite sex, deliberately damaging someone's property, getting into fights, and getting disciplined for fighting at school ($M = 0.72$, $SD = 1.32$, $\alpha = 0.78$). Perpetration history was established using a mean-based split, as low levels of aggression are considered somewhat normative for adolescents (for further details see Logan-Greene et al., 2010). Based on categorization of having histories of victimization and/or perpetration, four groups were established in adolescence: No history (NH), victimization history only (VH), perpetration history only (PH), and both victimization and perpetration history (VPH). These same four groups are retained in this analysis, and examined on the basis of three domains of early adulthood functioning: roles and resources, stress and distress, and maladaptive behaviors.

Roles and resources

Social ties: Social ties were measured along three dimensions. A five-item *family support satisfaction* scale tapped perceptions of family affection, help, and communication ($M = 4.18$, $SD = 1.25$, $\alpha = 0.77$). *Conventional peer bonding* contained three items concerning how many of the respondents friends were dependable and engaged in normative family activities ($M = 4.15$, $SD = 1.14$, $\alpha = 0.63$; 0 = none of [my friends], 3 = about half of them, and 6 = almost all of them). A mean-based scale of seven items assessed *peer high risk behavior* reflecting the proportion of friends who use drugs/alcohol, get into fights, carry weapons, and get into trouble with the law ($M = 1.87$, $SD = 1.07$, $\alpha = 0.74$; 0 = none of them, 3 = about half of them, 6 = almost all of them).

Personal resources: Personal resources were measured with three indicators. *Self-esteem*, based on three items ($M = 4.83$, $SD = 1.04$, $\alpha = 0.63$), assessed perceptions of self-worth and positive qualities, feeling useful, and taking a positive attitude toward self. A five item *personal control* scale measured perceptions of being in control of one's life and the ability to cope and adjust ($M = 4.81$, $SD = 0.96$, $\alpha = 0.79$). The range of positive coping strategies were assessed with three items that tapped *problem solving* when faced with difficulties ($M = 4.25$, $SD = 1.29$, $\alpha = 0.79$; 0 = never, 3 = a few times, 6 = many times).

Adult roles: Participants were asked a series of questions about their current family structure and socioeconomic status. Participants were asked how much education they had completed (0 = less than high school, 1 = HS diploma, 2 = some college, 3 = Vocational or Associate's degree, 4 = College degree, 5 = some graduate school education; $M = 1.50$, $SD = 0.90$). Parenting included occupying a parental role for biological, adopted, or stepchildren, or children of a partner if currently living with the participant (20.6% yes in sample). Participants were also categorized as living with a spouse/partner (19.7%), parents (44.5%), or other (35.7%). For relationship status, participants were categorized as either single or ever married/partnered if they responded that they were married, in a partnership, separated, or divorced (17.0% yes in sample).

Stress and distress

Life stress: Life stress was assessed along two dimensions: perceived stress and family distress. *Perceived stress* contained five items that tapped respondents' feelings of being overwhelmed and stressed by expectations ($M = 2.40$, $SD = 1.28$, $\alpha = 0.80$). *Family distress* was based on six items, including conflicts and tensions with family members, depression, and problematic family alcohol and/or drug use ($M = 1.28$, $SD = 1.04$, $\alpha = 0.64$).

Emotional distress: Emotional distress was composed of four dimensions. The *depression* inventory (5 items, $M = 1.18$, $SD = 1.05$, $\alpha = 0.85$) screened for symptoms of depression in the last two weeks including feeling sad, disliked, and blue. *Anxiety* tapped physical agitation, fear and frightening dream/thoughts, and uneasiness in the last two weeks (4 items, $M = 1.46$, $SD = 1.15$, $\alpha = 0.78$). The *hopelessness* scale (3 items, $M = 0.62$, $SD = 0.81$, $\alpha = 0.76$) included questions about feelings of discouragement, hopelessness and feeling that life is meaningless. The *anger* scale included questions on losing control and getting easily annoyed (3 items, $M = 1.60$, $SD = 1.20$, $\alpha = 0.69$; response options were: 0 = never, 3 = some of the time, and 6 = many times).

Adulthood victimization: In a second, limited follow-up three years after the early adulthood assessment, participants were asked about their experiences of violence that mirrored the questions in the adolescent survey. Victimization included assessment of both experiencing violence (physical abuse, injury, and sexual abuse) and witnessing violence (seeing family members hit or destroy property; $M = 0.85$, $SD = 1.02$, $\alpha = 0.72$).

Maladaptive behaviors

Substance use: Substance use, including *alcohol and drug use*, was measured as the frequency of beer, wine and hard liquor use, frequency of marijuana, other illicit drugs, and polydrug use in the last month (14 items, $M = 0.44$, $SD = 0.40$, $\alpha = 0.54$; 0 = not at all, 1 = once, 2 = 2 or 3 times, 3 = about once per week, 4 = several times a week, 5 = almost every day, 6 = every day). *Adverse drug consequences* asked respondents how frequently negative outcomes had occurred because of their substance use, including problems with friends or family, getting in trouble with the law or at work, or feelings of guilt or sickness (18 items, $M = 0.17$, $SD = 0.36$, $\alpha = 0.87$). *Drug use control problems* assessed how frequently respondents had used more substances than they intended or should have, how often they had stayed "wasted" all day, and how frequently friends had pressured them to use more or worried about respondents' substance use (7 items, $M = 0.52$, $SD = 0.52$, $\alpha = 0.77$). Both *adverse drug consequences* and *drug use control problems* used a 0–6 Likert scale wherein 0 = not at all, 1 = once, 2 = 2 or 3 times, 4 = about once a week, 5 = several times a week, 6 = every day.

Illegal behaviors: Three dichotomous measures assessed individuals' engagement in illegal behaviors. Participants were asked if they had *stolen anything in the last year* (13.2% in

sample reported yes). They were also asked if they had *ever been in trouble with the law* (20.3% of sample reported yes) and/or *been arrested* (14.2% of the sample reported yes).

Adulthood violence: Violent behaviors included five survey items that assessed getting into fights, injuring someone, thinking of hitting when angry, harming a member of the opposite sex, and damaging property ($M = 0.78$, $SD = 0.88$, $\alpha = 0.71$).

Analysis Plan

To determine group differences, two techniques were employed depending on the type of data. For scaled measures, MANOVA tests were employed as a conservative test of differences on related indicators, such as for social ties. For dichotomous or categorical data, Chi-square tests were used. All data were analyzed with SPSS version 15.0.

Results

As in adolescence, the largest group was those with both histories of victimization and perpetration of violence (35.1%), and the smallest was those with only perpetration histories (10.5%). No history and victimization history groups contained 31.4% and 23.0% of the sample respectively. The demographics of these groups were previously described (Logan-Greene et al., 2010); groups did not differ by race or ethnicity. Sex differences were sustained in the follow-up, with females overrepresented in VH group and under-represented in the groups with histories of perpetration (% female in each group: NH = 52.0%, VH = 60.3%, PH = 35.0%, VPH = 39.0%; the proportion of females in the entire sample = 47.5%). Study attrition from adolescence to follow-up did not significantly vary by violence group membership ($\chi^2 = 7.19$, $p = 0.066$).

Roles and Resources

Tests across the four groups for differences in roles and resources are presented in Table 1. The MANOVA omnibus test was significant for differences in social ties. Family support satisfaction was significantly lower for those participants in the VH and VPH groups compared to those with no violence histories. Associations with high risk peers were significantly elevated in all violence histories groups, particularly for those with both victimization and perpetration histories. Personal resources did not differ significantly across the four groups. Adult roles differed on two measures: education completed, which was low for those with PH; and parenting, where all of the violence-exposed groups were more likely to be parenting than young adults with no violence histories.

Stress and Distress

All MANOVA omnibus tests of difference (Table 2) were statistically significant for the negative developmental clusters—life stress, emotional distress and adulthood victimization. For life stress, perceived stress and family distress showed significant differences, with the VH and VPH groups showing the most elevated levels of stress. Emotional distress also varied for all measures. Depression, anxiety, and hopelessness demonstrated the same pattern of significant contrasts between NH group and both the VH and VPH group. The findings for anger were similar, except that the PH group was also significantly higher than the NH group. The greatest levels of young adulthood victimization, tested by ANOVA, were reported by those in the VH and VPH groups, and all groups reporting violence exposure in adolescence reported significantly higher violence exposure in young adulthood relative to the adolescent no history group.

Maladaptive Behaviors

Group differences on maladaptive behaviors are presented in Table 3. The omnibus test of differences for substance use achieved significance. All measures of substance use differed significantly by group, with those with perpetration histories reporting higher levels than the NH or VH groups. Getting arrested or in trouble with the law was reported significantly more by all groups with adolescent violence histories compared to the NH group, with PH and VPH groups reporting the highest rates. Groups did not differ significantly on stealing, where overall percentages were lower. Finally, the highest levels of young adulthood violent behavior were reported by those who engaged in violent behaviors in adolescence, specifically the PH and VPH groups.

Discussion

This examination responds to prominent public health and social welfare concerns regarding the potentially negative effects of violence exposure in youth on subsequent development and psychosocial health. Expectations for sustained impact of youth histories of violence on early adult outcomes five years later were broadly confirmed. Although indicators of positive development—particularly personal resources—were fairly comparable across groups, their levels appear inadequate to offset the negative impacts of adolescent violence on well-being in adulthood. Results demonstrate that violence histories in adolescence continue to resonate in early adulthood, most acutely in the areas of subsequent life stress, substance use, illegal behaviors, emotional distress, and further violent experiences. All violence-exposed groups reported higher rates of parenting; in the context of other risk factors they report, such as substance use, mental health difficulties, and further violence exposure—suggesting the transmission of risk in newly formed families. Results also underscore the need to address the emotional distress of who engage in violent behaviors. Each of the three groups with violence histories—those with histories of victimization, of violent behaviors, and of both—are discussed below, along with implications for interventions in adolescence and emerging adulthood.

Victimization History Group

This group reported significantly elevated levels of stress, emotional distress, and victimization in young adulthood compared to the NH group, as well as diminished levels of family support. In contrast, their reported levels of substance use were not significantly higher than NH, nor did they report significant problems in employment or education, although they had the highest levels of parenting in the sample. The picture that emerges of elevated distress and further victimization is largely congruent with prior examinations of adult survivors of childhood maltreatment (Desai, Arias, Thompson, & Basile, 2002; Foster et al., 2008), and is consistent with our hypotheses.

To some extent, these individuals demonstrate the importance of protective factors for positive development; relatively high levels of personal resources and social support in adolescence might have adequately curbed these individuals' risky behaviors such as substance use and involvement in illegal behaviors. However, the differences in protective factors found in adolescence have dissipated, and now this group reports relatively high levels of internalizing problems and stress. Additionally, the elevated levels of depression, parenting, family distress, and adulthood victimization points to the formation of families at risk, consistent with intergenerational transmission of victimization effects. Substantial evidence has accumulated that demonstrates the detrimental effects of poor parental emotional health on children's development (e.g., Goodman, 2007; Weissman et al., 2006). The high levels of victimization these individuals report in adulthood also elevates children's risk of exposure to family violence, which is further associated with a variety of

negative outcomes (Mrug & Windle, 2010), and which potentially sets up the cycle of violence frequently observed (e.g., Fagan, 2005; Maxfield & Widom, 2006).

There is a well-documented need for effective early interventions designed to prevent victimization or to ameliorate its effects, particularly for youth who have multiple victimization experiences (Finkelhor, Ormrod, & Turner, 2007; Nurius et al., 2009). Fortunately, there are numerous empirically supported interventions to help individuals cope with prior victimization experiences, including cognitive behavioral therapy and group psychotherapy (Lalor & McElvaney, 2010; U.S. Departments of Justice and Health and Human Services, 2011). At present, the effects of violent victimization are rarely incorporated into school-based interventions, which represents a missed opportunity of access to the population. It is hoped that increasing attention to bullying within schools will yield changes in this regard (Hahn et al. 2007).

Perpetration History Group

This group reported the highest levels of arrests and risk-taking peers, and relatively high levels of substance use, generally confirming our hypotheses. Levels of stress, emotional distress, and support were higher than the NH group, but did not achieve significance, with the notable exception of anger, which was significantly elevated. Additionally, this group reported the lowest levels of educational attainment and employment. This is consistent with prior findings that aggressive and violent youth struggle with academic and work achievement (Siennick & Staff, 2008). This group most closely resembles empirical portraits of delinquent youth (Menard and Huizanga, 1994; Thornberry, 1987).

Adolescent findings indicated that this group had particularly low levels of protective factors as well as elevated levels of risk factors, including risky behaviors (Logan-Greene et al., 2010). Although these lower levels of protective factors were not sustained into young adulthood as per our expectations, differences in other domains may well reflect the lack of resources from adolescence. This group, for example, is already falling behind in terms of education and employment, a trend that is likely to increase as high levels of arrests and substance use interact with low levels of achievement to establish adult antisocial patterns (Hoffmann, 2010; Odgers et al., 2008). The elevated levels of anger and stress, as well as further engagement in violence, are cause for concern as this group forms families (Rodriguez & Richardson, 2007).

This analysis demonstrated that those with histories of violent behavior are an important group to identify in adolescence, based on their higher risk for engaging in more serious antisocial or violent behaviors (Welsh, Sullivan, & Olds, 2010). This is especially important given research that suggests prevention programming may have the strongest impact before problem behaviors become an established pattern (e.g., Oesterle, Hawkins, Fagan, Abbott, & Catalano, 2010). Interventions that address social skills, positive adult influences, and reward prosocial beliefs and behaviors may be most effective at addressing this group's specific constellation of difficulties (Farrell & Vuline-Reynolds, 2007).

Victimization and Perpetration History Group

Congruent with hypotheses, this group reported the overall highest levels of stress, emotional distress, and substance use problems, as well as the highest levels of adulthood violence exposure and behaviors. In short, these young adults are struggling with the transition to adulthood across multiple domains of psychosocial functioning. Although these differences are not yet translating into major achievement gaps on education or employment indicators, this group reports considerable problems in coping and adjustment. Research has indicated that lowered achievements in education and employment in early adulthood

accumulate, resulting in cascading difficulties in functioning and health (Wickrama et al., 2003). Particularly troubling is that this group reports problems both in internalizing and externalizing behaviors in addition to high rates of parenting, providing reason to be concerned about the families formed by members of this group. Children raised in families with high levels of emotional distress *and* aggression are at risk of numerous biopsychosocial problems, such as health and social difficulties (Repetti, Taylor, & Seeman, 2002; Turner & Butler, 2003).

As in adolescence, this group seems to be facing the distinctive problems reported by *both* the VH and PH groups in early adulthood (Logan-Greene et al., 2010). Interventions in adolescence have the potential to prevent further deterioration of these individuals' statuses, both by bolstering resources and by reducing risk behaviors and emotional distress. Five years later, this VPH group has the same set of unmet needs, however the situation is more dire as they have already begun to establish adult roles as parents within contexts of greater association with high risk peers and family distress. Additionally, therapeutic access to these individuals is less certain than while they remain in normative school settings. These difficulties underscore the importance of early interventions.

Limitations

One limitation of this study is that all measures are self-reported, including violent behaviors. Although we do not have secondary corroboration of violence measures, follow-up studies with this same sample have demonstrated stability and accuracy of construct measurement ten years later (Logan-Greene, Nurius, & Hooven, 2011; Nurius et al., 2010). The effects observed in this study are predicted effects of childhood and adolescent experiences, providing further credence to their validity. Separate examinations have validated all psychosocial measures used here on a variety of populations (Eggert et al., 1994; Walsh et al., 1997). An additional limitation is that we do not have the kind of time-ordered measures over time of violent behaviors and victimization that would be necessary to disentangle their potentially causal relationship. Subsequent analyses with this population have demonstrated the powerful predictive capacity of child and adolescent victimization experiences for both adolescent and adulthood violent behaviors, although of course many if not most victims do not become violent themselves (Logan-Greene, Nurius, & Hooven, 2011). This is a well-established link; however, it is also recognized that engaging in violence puts one at risk for victimization due increased likelihood of associations with violent individuals as well as inherently reciprocal violent encounters (Lauritsen, Sampson, & Laub, 1991). Further examinations should attend not only to the overlapping and distinctive populations of victims and perpetrators, but also to the sequential relationship between victimization and violence.

Although there was attrition, retention was on par with prior studies with similarly at-risk samples (Rohrbach et al., 2005). One might expect that attrition would be more likely among those whose lives are most chaotic and disorganized. In this light, it is interesting to note the higher (although nonsignificant) attrition among the PH group. The higher reported rates of criminal and antisocial behavior reported by PH adult respondents suggests that differential loss to follow-up may have occurred among those moving toward more deviance, either into criminal justice settings or into antisocial, disconnected peer groups. One would therefore expect that those who attrited would strengthen observed differences rather than diminish them, if they had been included in these analyses.

Conclusions

These results reveal implications for research as well as clinical practice. Adolescent histories of violence continue to resonate powerfully in the transition to adulthood,

consistent with stress proliferation theorizing and setting the stage for continued stress-related erosion of psychosocial functioning. These findings also buttress research that demonstrates the association of emotional distress with histories of engagement in violent behaviors, particularly among those who report additional histories of victimization (Flannery et al., 2005; Logan-Greene et al., 2010). For these individuals interventions will need to attend to the emotional effects of past conflicts and trauma in order to effectively deter further and perhaps more serious violence (Blake & Hamrin, 2005). This finding is particularly important in the current policy climate in which antisocial or criminal acts are dealt with quite punitively, despite evidence of strong linkages between childhood traumas and later offending (Greenwald, 2002). Although recent reforms in the juvenile justice system have responded to arguments for lenience based on adolescent developmental neurobiology (e.g., Cauffman & Steinberg, 2012), it is not clear that the courts are incorporating research demonstrating the resonance of early violence exposure in adolescence and young adulthood.

In early adulthood, each violence-exposed group continues to display problem behaviors that could be addressed through intervention. Those with victimization only histories need interventions to address internalizing, further victimization, and to improve parenting. Those with histories of perpetration would benefit from interventions that reduce antisocial behaviors, foster prosocial connections such as education, and reduce anger and substance use. Those with histories of both victimization and perpetration need interventions that address all of the above. These prospective results demonstrating continued need also highlight the importance of implementing interventions during childhood and adolescence in order to curb negative psychosocial trajectories, before more serious problems develop. As adolescence is the last time during which the bulk of the population is readily accessible for broad-based intervention efforts via school settings, it is crucial to leverage that opportunity to improve outcomes for vulnerable youth.

Acknowledgments

This research was supported by grants from NINR Grant # R01 NR03550 "Suicide Risk From Adolescence to Young Adulthood," NCRR Grant TL1 RR 025016, and the National Institute on Mental Health Grant 5 T32 MH20010 "Mental Health Prevention Research Training Program".

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Table 1
Early Adulthood Roles and Resources Based on Adolescent Victimization and Perpetration Status

	No History (NH) (n=179) 31.4%	Victimization History (VH) (n=131) 23.0%	Perpetration History (PH) (n=60) 10.5%	Victimization and Perpetration History (VPH) (n=200) 35.1%	F value or χ^2
<u>Social Ties</u>					
Family support satisfaction ^{a,c}	4.46	4.02	4.25	4.01	5.15**
Conventional peer bonding	4.24	4.10	4.05	4.14	1.20
Peer high risk behavior ^{a,b,c,d,e}	1.46	1.70	2.15	2.24	21.03***
<u>Personal Resources</u>					
Self-esteem	5.15	4.96	5.03	5.06	1.20
Personal control	4.88	4.71	4.77	4.81	0.79
Problem-solving coping	4.39	4.08	3.93	4.32	2.97
<u>Adult Roles</u>					
Education completed ^b	1.64	1.49	1.25	1.47	2.97*
Currently employed (% yes)	73.2%	71.8%	68.3%	70.0%	$\chi^2 = 0.75$
Parenting (% yes)	14.9%	26.4%	23.7%	25.6%	$\chi^2 = 8.18^*$
<u>Living situations</u>					
With spouse/partner	15.1%	24.4%	21.7%	20.0%	7.30
With parents	46.9	45.8	48.3	41.0	
Other	38.0	29.8	30.0	39.0	
<u>Relationship status:</u>					
Single	84.6%	79.4%	83.1%	81.45	1.48
Ever married/partnered	15.4	20.6	16.9	18.6	

*
p .05,

**
p .01,

p .001. Contrasts based on Tukey's HSD post-hoc test:

^a NH significantly different from VH,

^b NH significantly different from PH,

^c NH significantly different from VPH,

d_{VH} significantly different from PH,
 e_{VH} significantly different from VPH,
 f_{PH} significantly different from VPH.

Table 2
Adulthood Stress and Distress Based on Adolescent Victimization and Perpetration Status

	No History (NH) (n=179) 31.4%	Victimization History (VH) (n=131) 23.0%	Perpetration History (PH) (n=60) 10.5%	Victimization and Perpetration History (VPH) (n=200) 35.1%	F value or χ^2
<u>Life Stress</u>				Wilk's Lambda (6, 1124.00)= 0.94, $F= 5.90$ ***	***
Perceived stress <i>a,c</i>	2.12	2.46	2.39	2.61	4.68**
Family distress <i>a,c,f</i>	0.94	1.38	1.20	1.53	11.23***
<u>Emotional Distress</u>				Wilk's Lambda (12, 1476.62)= 0.94, $F= 2.95$ ***	***
Depression <i>a,c</i>	0.98	1.31	1.08	1.29	3.78*
Anxiety <i>a,c</i>	1.18	1.50	1.43	1.70	6.68***
Hopelessness <i>a,c</i>	0.45	0.68	0.57	0.76	4.88**
Anger <i>a,b,c</i>	1.29	1.59	1.72	1.82	6.69***
Victimization <i>a,b,c,e,f</i>	0.36	0.95	0.72	1.26	16.12***

* $p < .05$,

** $p < .01$,

*** $p < .001$. Contrasts based on Tukey's HSD post-hoc test:

^a NH significantly different from VH,

^b NH significantly different from PH,

^c NH significantly different from VPH,

^d VH significantly different from PH,

^e VH significantly different from VPH,

^f PH significantly different from VPH.

Table 3
Adulthood Maladaptive Behaviors Based on Adolescent Victimization and Perpetration Status

	No History (NH) (n=179) 31.4%	Victimization History (VH) (n=131) 23.0%	Perpetration History (PH) (n=60) 10.5%	Victimization and Perpetration History (VPH) (n=200) 35.1%	F value or χ^2
<u>Substance use</u>				Wilk's Lambda (12, 1481.91)= 0.96, $F = 2.79$ **	
Alcohol and drug use <i>b, f</i>	0.35	0.44	0.54	0.50	5.38 ***
Adverse drug consequences <i>c, e</i>	0.11	0.15	0.18	0.24	3.79 **
Drug use control problems <i>b, c, e</i>	0.37	0.44	0.60	0.68	5.95 ***
<u>Illegal behaviors</u>					
Last year stole	10.9%	9.9%	15.0%	13.1%	$\chi^2 = 1.48$
Ever trouble with the law	44.8%	62.0%	76.7%	71.1%	$\chi^2 = 33.79$ ***
Ever arrested	25.7%	40.0%	58.3%	55.1%	$\chi^2 = 38.77$ ***
Violent behaviors <i>b, c, d, e</i>	0.38	0.53	0.97	1.25	23.89 ***

* $p < .05$,

** $p < .01$,

$p < .001$. Contrasts based on Tukey's HSD post-hoc test:

^a NH significantly different from VH,

^b NH significantly different from PH,

^c NH significantly different from VPH,

^d VH significantly different from PH,

^e VH significantly different from VPH,

^f PH significantly different from VPH.