

Comparing the Effects of Victimization, Witnessed Violence, Hearing about Violence
and Violent Behavior on Young Adults

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Abstract

This study compares the effects of: (1) violent victimization; (2) witnessing violence; (3) hearing about violence, and (4) violent behavior on depression and Post Traumatic Stress Disorder (PTSD) among a sample of young adults. All forms of lifetime exposure were significantly correlated with depression and PTSD, but when they were assessed simultaneously, victimization had the strongest effect. Witnessing violence over the lifetime also had a significant effect on PTSD. High social support was related to fewer symptoms of depression and PTSD. Social support and gender were investigated as moderators. High social support moderated the effects of recent victimization on depression and PTSD. Gender did not moderate the effects of exposure to violence on depression, but it did moderate the effects of recent witnessed violence and violent behavior (both recent and lifetime) on PTSD. Women were more negatively affected than men by recent witnessed violence and engaging in violent behavior. Implications for interventions are discussed.

Introduction

Research on the effects of community violence on children has proliferated over the past thirty years (Saunders, 2003). Research has established a firm relationship between exposure to violence and negative psychological outcomes. However, in most cases, this research has focused on exposure to violence among specific age ranges (described in the Literature Review), and minorities and children living in crime-ridden urban areas (e.g., Ozer & Weinstein, 2004; Paxton, Robinson, Shah, & Schoeny, 2004). Studies that assess the accumulated effects of exposure to violence from childhood through young adulthood are rare, even though official statistics suggest that exposure to violence is actually the highest among teens and young adults (U.S. Department of Justice, 2009). Research has also established the overlapping nature of exposure to community violence - witnessing, hearing about, victimization, and perpetration (Uehara, Chalmers, Jenkins, & Shakoor, 1996). However, most studies have not evaluated the effects of a particular form of violence in the presence of other forms of violence.

This study assesses the impact of accumulated lifetime and recent exposure to various forms of violence on symptoms of Post Traumatic Stress Disorder (PTSD) and depression among a sample of young adults. Our conceptualization of exposure to violence includes witnessing violence, hearing about violence, victimization, as well as perpetration as distinct forms of exposure to violence. Research on the relationship between perpetration and community violence has generally conceptualized perpetration as an outcome, rather than as a form of exposure to violence. Previous research has also failed to consider the relative effects of all of these forms of violence simultaneously.

Review of the Literature

Exposure to Violence, PTSD and Depression

Fitzpatrick and Boldizar's (1993) study was one of the first to firmly establish a connection between exposure to violence and PTSD in children. One of the most representative studies was conducted by Boney-McCoy and Finkelhor (1995), which employed a large national sample of children. They found that more than a third of the respondents had experienced some form of victimization, and most forms of victimization were significantly related to symptoms of PTSD. Sexual victimization had an especially strong effect on symptoms of PTSD. Kilpatrick, et al. (2003) examined the relationships between witnessed violence, sexual victimization, and physical assault on PTSD and major depression among a national sample of adolescents ages 12-17. All three types of violence exposure were significantly related to comorbid PTSD and depression. Paxton, et al. (2004) studied 77 African American male adolescents in a Midwestern high school and found that exposure to violence was significantly correlated with PTSD symptoms. Another study of middle school adolescents found that exposure to violence (by being victimized or witnessing violence) was related to symptoms of depression and PTSD (Ozer & Weinstein, 2004).

Community Violence and Perpetration of Violence

Studies that focus on aggression and perpetration as responses to community violence are less common. However, two studies found a relationship between witnessing and perpetrating violence (Gorman-Smith & Tolan, 1998; Gorman-Smith, Henry & Tolan, 2004). A study that investigated the relationship between exposure to violence and violence perpetration among a sample of African American and Latino boys

(Gorman-Smith & Tolman, 1998) found that exposure to violence was related to depression, anxiety and aggressive behavior. The researchers offer two possible explanations for the relationship between aggression and violence exposure: (1) youth who are violent are also more likely to witness it, and (2) chronic exposure to violence leads to the development of values that support the use of violence. Gorman-Smith et al. (2004) also report similar results for the relationship between violence exposure and perpetration. A limitation of these studies is that they were based on samples of racial minorities. Durant, Cadenhead, Pendergrast, Slavens, and Linder (1994) also found that exposure to violence and victimization was significantly correlated with the use of violence. Farrell and Bruce (1997) found that over time, exposure to violence was related to more violent behavior for girls, but not boys in a sample of African-American adolescents. However, cross-sectional analyses of the same data showed a positive relationship between exposure to violence and perpetration for both girls and boys at each point in time. Other studies (Shields, Nadasen, & Pierce, 2009; Uehara, et al., 1996) suggest a progression from witnessing violence to victimization, and finally perpetration.

Social Support as a Moderator

Social support has also been of interest as a moderator in the relationship between exposure to violence and psychological distress. Shields, Nadasen, & Pierce (2008) examined the moderating effects of social support (peer, family, and school support) on the effects of witnessing violence. They found that social support reduced the effects of exposure to violence for at least certain kinds of violence. In a study of African American children, Overstreet, Dempsey, Graham, & Moely (1999) found that the mother's presence in the home reduced the negative effects of exposure to violence on

symptoms of depression, but not PTSD. Ozer and Weinstein (2004) found that teens with less supportive mothers experienced more depression and symptoms of PTSD as a result of increased exposure to violence. Feeling able to discuss observed violence with others reduced the effects of exposure to violence. Kuther and Fisher (1998) found that family support moderated the effects of violence exposure on psychological distress in a sample of middle school suburban youth.

While research supports the claim that social support buffers the effects of violence exposure, there are also qualifications. Sullivan, Kung, & Farrell (2004) found that family support reduced the impact of observing violence on subsequent cigarette and alcohol use, but the effectiveness of this factor decreased as exposure to violence increased. Paxton et al. (2004) found that social support from peers and family did not moderate the effects of violence on depression or PTSD symptoms among African American males. Finally, Youngstrom, Weist, and Albus (2003) found that family support did not moderate the relationship between violence exposure of all kinds (witnessing, knowing, and being victimized) and behavioral problems among a sample of adolescents who had been exposed to high levels of violence.

Effects of Lifetime Exposure to Violence on Young Adults

Much more unusual is research on whether the effects of exposure to violence during childhood and adolescence have a lasting impact on adult psychological adjustment. Scarpa (2001) examined lifetime exposure to violence among a sample of university students. Almost all of the students (95.6%) reported witnessing some form of violence, and 82% reported being victimized. These percentages are similar to those found in other studies of community violence and young adults (Scarpa, 2003). They are

higher than those found in a national survey of adolescents (N= 4,023) between the ages of 12 and 17 (Crouch, Saunders, Kilpatrick, & Resnick, 2000).

Scarpa et al. (2002) also found that exposure to violence was related to symptoms of PTSD. In a related study by Scarpa, Hurley, Shumate & Haden (2006), the researchers examined the effects of hearing about violence over the lifetime on 518 college students and found that low exposure to violence was associated with less depression and fewer symptoms of PTSD. Other research on hearing about violence among young adults (Lloyd & Turner; 2003; Turner & Lloyd, 2003) did not find a relationship between news of traumatic violence and PTSD. However, it should be noted that none of these studies compared the effects of all three forms of exposure (hearing about, witnessing, and victimization) on the dependent variables in the same multivariate models.

Scarpa, Haden and Hurley (2006) also investigated the moderating effects of social support and coping styles among a sample of college students. They found a main effect but not a moderating effect for family support on PTSD, but they did find a moderating effect for social support from friends. However, the effect was in a somewhat surprising direction. The relationship between victimization and PTSD was actually stronger at higher levels of social support. They suggest that this might be the case because at high levels of victimization, sources of social support may provide negative rather than positive feedback, such as blaming the victim. They also acknowledge the possibility that the result could simply be an artifact because more serious victimization may lead victims to seek more social support.

Purpose of the Research

Because there is so little research on accumulated exposure to violence among young adults, we sought to examine the prevalence of: (1) witnessing violence; (2) hearing about violence; (3) victimization; and (4) perpetration among a sample of young college students. We also sought to examine the relative effects of lifetime exposure to violence on current symptoms of PTSD and depression. Previous research on lifetime exposure to violence has not attempted to assess the relative effects of all of these different forms of exposure to violence on mental health in young adults. Research that has compared the effects of victimization and other forms of violence among children (Fitzpatrick & Boldizar, 1993; Paxton et al. 2004) has generally found that victimization had the strongest effect on psychological outcomes. Unlike previous research, we conceptualize engaging in violent behavior as a form of exposure to violence rather than an outcome. The rationale for treating perpetration as an independent variable is based on findings that show that forms of exposure to violence are interrelated (Uehara et al., 1996), as well as the fact that this is a cross-sectional study where causal connections between forms of violence can not be established. Greater exposure to violence was expected to be positively related to both dependent variables. In addition, we sought to determine if more recent exposure to violence has a greater impact than lifetime exposure on depression and PTSD. Although there is no research on this specific issue, it seemed reasonable to expect that more recent exposure would have a greater effect than lifetime exposure (a “recency” effect). However, it also seemed possible that accumulated exposure, which in most cases would be greater than recent exposure, would have a

greater effect. Research by Field, Classen, Butler, Koopman and Spiegel (2001) on “priming” among victims of childhood sexual abuse supports the second hypothesis.

Because social support has been found to be negatively related to depression (Peirce, Frone, Russell, Cooper & Mudar, 2000) and PTSD (Brewin, Andrews & Valentine, 2000), and an important moderating variable on the effects of exposure to violence among children (Shields, et. al. , 2008), and young adults (Scarpa et al., 2006) we also assess the impact of social support as a main effect and a moderator in the relationship between all four forms of exposure to violence and the dependent variables. Finally, because some previous research has found that girls are more affected than boys by exposure to violence (Buka, Stichick, Birdthistle, & Earls, 2001; Foster, Kuperminc, & Price, 2004), we also investigate gender as a moderator on the effects of lifetime and recent exposure to violence.

Method

Participants

Approximately 600 students from eight introductory courses in Political Science, Anthropology, and Sociology at a Midwestern university were invited to participate in an on-line survey. For their participation, students received a small amount of extra credit for the courses they were taking. After two reminders, 335 students (approximately 56%) responded. Because our focus was on young adults, students over 25 were eliminated from the sample (64 students, 19%). Twenty-three students (7%) who did not report their ages and 10 international students were eliminated, leaving a sample size of 238. This produced a sample comparable in age to other studies of the effects of violence exposure on young adults (described in the Literature Review). In addition, because we were

assessing lifetime exposure to violence, our aim was to minimize recall bias. Although we were unable to identify any studies on age and recall bias in studies of community violence specifically, a related study by Yoshihama and Gillespie (2002) found significant recall bias among older women in reports of lifetime exposure to domestic violence. Finally, official statistics suggest that involvement in violence decreases significantly after age 25 (U.S Department of Justice, 2009).

Measures

Exposure to violence was measured with items from the Stressful Life Events Screening Questionnaire (Goodman, Cororan, Turner, Yuan & Green, 1998), the Screen for Adolescent Violence Exposure (Hastings & Kelley, 1997) and the My Exposure to Violence Questionnaire (Selner-O'Hagan, Kindlon, Buka, Rausenbush, & Earls, 1998). The items regarding hearing about and witnessing violence are shown in Table 1. The subscale for hearing about violence is the mean of the five items (Alpha = .80). The same questions were repeated for the past 12 months (recent violence). The same procedure was followed for the witnessing subscale, and the response foils were the same (Alpha = .85).

The items used to measure violent victimization are also shown in Table 1. Sexual victimization was defined as “forced sexual contact upon you against your wishes or when you were in some way helpless.” Nonsexual victimization included being attacked by a parent, attacked by another person, threatened with a weapon, and seriously and intentionally wounded by another person. Respondents responded with “yes” or “no” and the victimization index is a count of positive responses. Coefficient Alpha for this scale was lower (.44), but as Netland (2001) argues, one would not necessarily

expect high internal consistency for a composite variable of this type. For example, being victimized by a parent does not necessarily imply being victimized by another person. The same questions were repeated for the past 12 months (recent violence).

Perpetration was measured with four items concerning violent behavior from the Self-reported Delinquency Scale (Piquero, MacIntosh & Hickman, 2002).

Respondents reported how often (on a five-point scale) they had engaged in a specific violent behavior (hit or threatened a parent, another adult, or a minor; and attacked another with the intent to seriously harm) (Table 1). The index is the mean of the items (Alpha = .61), and the questions were repeated for the past 12 months (recent violence).

Depression was measured with the Center for Epidemiologic Studies Depression Scale (CES-D) (Radloff, 1977). In addition to the original 20 items, two items were added concerning sleeping more than usual, and eating more than usual. These two items were included only for the depression symptom subscale, not the diagnosis of depression. The symptom subscale was the mean of all the items (Alpha = .90), and a diagnosis of depression was determined using the traditional scoring instructions.

The PTSD Checklist, Civilian Version (PCL-C) (Weathers, Litz, Herman, Huska & Keane, 1991) was used to assess PTSD symptoms. Respondents reported how much they were bothered in the past month by each problem on a 5-point scale. A symptoms score was calculated by taking the mean of the items (Alpha = .93), and a diagnosis of PTSD was computed by using the 50 point cutoff method (Weathers et al., 1991).

Social support was measured with six items based on the Vaux Social Support Scale (Vaux, 1998) that asked respondents about how much they could rely on family members, friends, and co-workers for advice and support (Alpha = .87).

Results

Characteristics of the Sample

Respondents ranged in age from 18 to 25 (mean = 21). Forty percent had lived with someone with a college degree before age 18. Only 15% of the sample was married or cohabiting. Sixty nine percent of the respondents identified their race as White, and 31% identified themselves as members of a minority group: 61.6% African American; 11% American Indian; 19.2% Asian; 11% Hispanic; and 15.1% “other.” Respondents who identified with a minority group were classified as a minority.

Respondents reported the zip code for the city/municipality where they lived most of the time while growing up. Census data were used to determine median household income, the crime index of the city, and population density (people per square mile). Median household income was \$42,254, median population density was 3,400 (typical of a large suburb), and the median crime index was 93 (the national average is 100).

Preliminary analyses

Depression scores ranged from 1 to 3.27 on a 4-point scale (mean = 1.88, SD = .51). Over half (52.1%) of the respondents met the criteria for a diagnosis of depression. The mean for the PTSD symptoms scale was 1.94 on a five-point scale (range = 1 to 4.82; SD = .72). Using the 50 point cutoff method, 9.7% of the respondents met the criteria for a diagnosis of PTSD.

Zero order correlations between the independent and dependent variables and social support are shown in Table 2. Depression was correlated with lifetime witnessing, hearing about violence, and victimization, but the strongest correlation was between victimization and depression ($r = .276, p < .01$). Depression was not correlated with

violent behavior, but it was negatively and moderately correlated with social support ($r = -.423, p < .01$). PTSD was correlated with lifetime victimization, witnessing violence, hearing about violence and violent behavior. Once again, the strongest correlation was between victimization and PTSD ($r = .342, p < .01$). PTSD was correlated negatively with social support ($r = -.322, p < .01$), and PTSD and depression were highly correlated ($r = .772, p < .01$). All types of violence exposure were correlated with one another. The strongest correlation was between witnessing and hearing about violence ($r = .651, p < .01$).

Multivariate analyses

Of all the demographic variables, only gender was correlated with depression ($r = .127, p < .05$), with women reporting more symptoms of depression. Gender was not correlated with PTSD or violent behavior. Men had witnessed more lifetime violence ($r = -.261, p < .001$) and recent violence ($r = -.206, p < .01$). Accordingly, gender was included as a control variable in all the multivariate analyses (0 = male, 1 = female). Women were less likely than men to be violent against an adult other than a parent ($r = -.205, p < .01$), but when the summary measure was created, there was no gender difference. Race was not correlated with depression or PTSD, but minorities were more likely to witness ($r = -.230, p < .001$) and hear about violence ($r = -.230, p < .001$) over the lifetime (0 = minority, 1 = white). Race was weakly correlated with being attacked by another person ($r = .136, p < .05$), but in this case, minorities were less likely to have been attacked. Accordingly, race was included as a control variable in the regression analyses. Age was not correlated with any of the independent or dependent variables.

Hierarchical linear regression was used to evaluate four multivariate models for depression and PTSD (Tables 3 and 4). Gender and race were entered in the first block, the exposure variables in the second block, social support in the third block, and interactions (between the exposure variables and social support and gender) were entered in the last block. This allowed us to assess: (1) the independent effects of gender and race, (2) the effects of the exposure variables controlling for race and gender, (3) the effects of the control and exposure variables controlling for social support, and (4) the interaction terms controlling for all other variables. Block three is the equivalent of ordinary least squares regression (OLS) with all control and independent variables included in the models, and Block 4 is the equivalent of OLS with all variables and each interaction. All continuous variables were centered around their means before computing interaction terms. Due to the difficulty of interpreting interactions in the presence of other interactions, they were entered one at a time in the last block. Because interactions are difficult to detect in regression models (McClelland and Judd, 1993), interactions significant at the .10 level or better were considered. Collinearity diagnostics revealed no evidence of collinearity in any of the models.

The effects of race and gender on depression and PTSD

In general, women were more likely than men to report symptoms of depression and PTSD, but only when exposure to the various forms of violence and social support were controlled (Tables 3 and 4). Women reported more symptoms of depression in Blocks 2 and 3 for recent violence (beta = .139, $t = 1.997$, $p < .05$; beta = .181, $t = 2.852$, $p < .02$) and lifetime exposure to violence in Block 3 (beta = .174, $t = 2.768$, $p < .01$). Women reported more symptoms of PTSD than men in Block 3 when all forms of

exposure and social support were controlled (lifetime: $b = .135$, $t = 2.100$, $p < .05$; recent: $\beta = .134$, $t = 2.052$, $p < .05$). Race did not have an effect in any of the models.

Analysis of direct exposure to violence (victimization and perpetration)

The most common types of lifetime victimization were being attacked by a person other than a caregiver (30.1%) and sexual victimization (19.4%; 91.7% of victims were women) (Table 1). Recent victimization was much less frequent. The mean of the lifetime victimization composite was .81 (SD = 1.02), and the mean for recent victimization was .15 (SD = .44). About half (47.9%) had been victimized at least once in their lifetimes, and 12.1% had been victimized in the last year. The most common type of lifetime perpetration was hitting or threatening to hit an adult other than a parent (21.5%) and it was also the most common type of recent perpetration (12.6%) (Table 1). The mean of the lifetime perpetration measure was 1.28 (SD = .52), and the mean for recent perpetration was 1.11 (SD = .52). About a third (36.6%) had perpetrated some form of violence over the lifetime, and 19.7% had been violent in the past 12 months.

The regression analysis of the effects of direct exposure to violence on depression and PTSD are shown in Tables 3 and 4. Victimization had a significant effect on depression in both Blocks 2 and 3, both lifetime (Block 2: $\beta = .237$, $t = 3.135$, $p < .01$; Block 3: $\beta = .170$, $t = 2.472$, $p < .05$) and recent victimization (Block 2: $\beta = .169$, $t = 2.502$, $p < .05$; Block 3: $\beta = .130$, $t = 2.117$, $p < .05$). The pattern was the same for the effects of victimization on PTSD. Lifetime victimization had significant effects in Block 2 and 3 ($\beta = .268$, $t = 3.646$, $p < .001$; $\beta = .220$, $t = 3.127$, $p < .01$), as did recent victimization ($\beta = .214$, $t = 3.212$, $p < .01$; $\beta = .185$, $t = 2.916$, $p < .01$). As indicated by the size of the regression coefficients, victimization had the strongest effects

of all forms to exposure to violence on both depression and PTSD. Perpetration (lifetime or recent) did not have a significant effect on depression or PTSD.

Analysis of indirect exposure to violence (witnessing and hearing about)

Means and standard deviations for witnessed violence and hearing about violence are shown in Table 1. The most common type of lifetime witnessed violence was seeing someone hit, kicked, pushed, shoved, or slapped (83.6%), and the least common type was seeing someone attacked with a knife (4.2%). Recent witnessed violence was lower, but the pattern was similar. Almost all (95.5%) had witnessed at least one form of violence in their lifetimes, and 90.8% had witnessed some form of violence in the past year. The most common type of violence “heard about” was hearing of someone being beaten up (56.5%). The pattern for the past year was the same. Hearing about at least one form of violence was also high over the lifetime (91.1%) and in the past year (82.8%).

The regression analysis indicated that hearing about violence did not have a significant effect on depression or PTSD, either lifetime or recent exposure (Tables 3 and 4). Likewise, witnessed violence did not have a significant effect on depression in any of the models. However, lifetime witnessed violence did have a significant effect on PTSD in Block 3 (beta = .177, $t = 1.994$, $p < .05$).

The effects of social support

Social support had significant positive effects on both symptoms of depression and PTSD (Tables 3 and 4, Block 3). Higher social support was associated with lower depression both for lifetime (beta = -.423, $t = -7.215$, $p < .001$) and recent exposure to violence (beta = -.428, $t = -6.969$, $p < .001$). The same was true for symptoms of PTSD

in the lifetime model (beta = -.309, t = -5.022, p < .001) and the model for recent violence (beta = -.318, t = -5.024, p < .001).

Interactions between social support, gender and exposure to violence

Only one interaction was found for exposure to violence and depression. Social support moderated the effects of recent victimization (beta = -.110, t = -1.714, p < .10). Respondents higher in social support reported fewer symptoms of depression as a result of victimization. The same was true for symptoms of PTSD (beta = -.162, t = -2.450, p < .05). In addition, gender moderated the effects of lifetime perpetration (.372, t = 1.811, p < .10), recent perpetration (beta = .385, t = 1.826, p < .10), and recent witnessed violence (beta = .409, t = 2.136, p < .10). Plots showed that the negative effects of perpetration on symptoms of PTSD were stronger for women than for men, and the impact of recent witnessed violence was stronger for women.

Discussion

A major purpose of our research was to assess the prevalence of exposure to violence among a sample of young adults. Similar to past research on violence exposure in young adults (Scarpa, 2001, Scarpa, et al., 2002), we found that respondents had witnessed a considerable amount of violence in their lifetimes. Scarpa (2001) found that 95.6% of her respondents had witnessed violence and 82% had been victimized, while we found percentages of 97.5% and 47.9%, respectively. However, Scarpa's (2001) measure of victimization included lesser forms of victimization (such as being chased or threatened), while our measure was restricted to more serious forms of victimization. Like Scarpa (2001), we found that respondents were more likely to witness lesser rather than serious forms of violence. Respondents were more likely to hear about rather than

witness serious forms of violence. Almost a third of the sample (30.1%) had been attacked by a person other than a caregiver. The rate of lifetime sexual assault (19.4%) was also high, but similar to estimates of lifetime prevalence of rape among women in the U.S. (16.7%; Tjaden & Thoennes, 2006). Engaging in violent behavior was fairly common. About a fourth of the sample had hit or threatened to hit another adult (21.5%). The findings suggest that even though middle income and suburban populations might not be exposed to the most serious forms of violence (with the exception of sexual assault), they are still at significant risk for exposure.

The extent of depression reported by the respondents was striking. Over half of the respondents met the criterion for a formal diagnosis of depression. While this seems surprisingly high, it is consistent with other research which has found high levels of depression among college students (American Psychiatric Association, 2009; Peterson, 2002; Voelker, 2003). The high rate of depression could be related to the large percentage of women in the sample, who generally report more depression than men (American Psychiatric Association, 2009). The incidence of depression that was found supports the idea that college is a stressful time for many students, and even the possibility that many students come to the university with significant problems with depression.

The respondents also reported a significant number of PTSD symptoms. Almost 10% qualified for a diagnosis of PTSD, which is higher than the 3-4% rate in the general population (Narrow, Rae & Regier, 1998), but almost identical to the 9.4% found in a study of a similar college student population that used the same measure (Ruggiero, Ben, Scotti & Rabalais, 2003). Scarpa et al. (2006) found an even higher percentage of the

college students in their sample qualified for a diagnosis of PTSD (14%). The high rate of PTSD is also consistent with the finding of a high rate of depression in our sample.

Consistent with other research on depression in college students (Rosenthal, 2000), women were slightly more likely to report depression, but not more symptoms of PTSD. Ruggiero et al. (2003) also did not report a gender difference using the PLC-C. Lifetime perpetration of violence was unrelated to gender, which is consistent with some research on the effects of violence exposure on younger children (Farrell & Bruce, 1997), but not consistent with other research that has found that boys are more likely to engage in violence (Durant, et al., 1994) . However, research on adults in the general population has found no gender difference in perpetration of domestic violence, although men are more likely to engage in violence outside the home and produce injuries in victims (Straus, 1999). Women were less likely than men to report being violent against an adult other than a parent, but since there were no gender differences in the other items, this effect disappeared when the summary measure of violence was created.

Another purpose of the research was to investigate the relationship between exposure to violence and depression and PTSD. Zero order correlations revealed that all forms of exposure to violence were significantly correlated with symptoms of PTSD, and all forms except perpetration were correlated with depression. This finding is consistent with other research on lifetime exposure to violence among young adults. Scarpa et al. (2002) also found that victimization and witnessing violence was related to aggression and depression, and Scarpa et al. (2006) found that hearing about violence was related to depression and PTSD. In addition, as expected, social support had a strong positive effect in reducing symptoms of depression and PTSD. Social support was unrelated to

perpetration of violence over the life course, suggesting that the type of support received (supporting or discouraging violence) is probably important.

A distinctive feature of our research was that we analyzed the effects of several different forms of exposure to violence simultaneously. When all forms of violence exposure were entered into regression models simultaneously, social support had a very strong effect on reducing symptoms of both depression and PTSD, and lifetime victimization was significantly related to both depression and PTSD. Lifetime witnessing, perpetration, and hearing about violence did not have a significant effect on depression when the exposure variables were entered simultaneously, but lifetime witnessing did have a significant effect on symptoms of PTSD. Hearing about violence and perpetration did not have a significant effect on PTSD. The results were similar when recent violence exposure was examined, except that the effect of lifetime witnessing on PTSD was no longer significant. These findings are consistent with other work (e.g., Paxton et al. 2004), which also found victimization had a stronger effect on psychological well-being in children compared with witnessing violence. These findings are important in that research that examines only one form of exposure to violence at a time may be misleading, and much of the research to date has not considered all of the forms of exposure simultaneously. Overall, hearing about violence had a much weaker effect on depression and PTSD than victimization or witnessing violence, which is somewhat different than other research on children (Shields et al, 2008). Our findings suggest that as individuals mature, they may be less affected psychologically by indirect exposure to violence compared with direct exposure, especially victimization.

Social support moderated the effects of recent victimization on both depression and PTSD. Similar to research on children (Shields et al., 2008), high social support reduced the effects of victimization on depression and PTSD and low social support increased it. This finding highlights the importance of social support in reducing the effects of victimization. It is important to note that social support moderated only recent victimization. This seems reasonable since our measure tapped current levels of social support. Future research on the role of social support in lifetime victimization should include a measure of social support through childhood and adolescence.

A significant finding was that engaging in violent behavior (both lifetime and recent) and witnessing recent violence was more strongly associated with symptoms of PTSD among women than men. This is consistent with research on children which has found that girls are more likely than boys to suffer from psychological distress as a result of exposure to violence (Foster, et al., 2004) and research on PTSD in adults that has found that women are more likely than men to exhibit symptoms of PTSD following a traumatic event (Kessler, Sonnega, Bromet, Hughes & Nelson, 1995). Although this pattern has been found for witnessed violence, our findings suggest the same pattern for perpetration. Females appear to be more sensitive to exposure to violence, even their own violence. One explanation could be that women are more likely to be responding to victimization when they engage in violence. Another possibility could be that violent behavior is more normative for men than women, and therefore less troubling.

Another goal of the research was to compare the effects of lifetime and recent exposure to violence. The effects of victimization were similar for recent and lifetime victimization, for both depression and PTSD. However, the regression coefficients

suggested that lifetime victimization had a stronger effect than recent victimization for both PTSD and depression, which supports an accumulation effect, rather than a recency effect. That only lifetime witnessed violence had a significant effect on PTSD also supports the accumulation hypothesis for witnessed violence.

Limitations

A limitation of our research is that our measures of exposure to violence are all retrospective and subject to recall problems. However, one study of adult retrospective reports of childhood traumatic events (Hardt & Rutter, 2004) concluded that the most serious problem is false negatives, and that false positives are rare. Accordingly, our data probably under-represent the extent of lifetime exposure to violence in the sample. In addition, reports that involve judgment or interpretation tend to be unreliable (Hardt & Rutter, 2004). Because our measures did not involve interpretation, it increases the likelihood that reports were reasonably accurate. A possible bias in reports of violent behavior is probably in the same direction, with individuals likely reporting less violent behavior because of recall problems as well as social desirability issues. We also attempted to control recall bias by including only younger respondents.

In addition, our sample consists of college students, and may not be representative of the general population of young adults. However, since many high school graduates are attending college today, this may not be as serious a limitation as it was in the past. According to the Bureau of Labor Statistics (2008), 67.2% of high school graduates were enrolled in a four-year institution in October 2007. Because our data come from students in a public, commuter university also makes the sample more representative of the general population. That students received extra course might have produced a bias

toward students with lower academic performance. However, the amount of credit was so small that it is unlikely that this produced a serious bias.

Implications for Prevention and Treatment

Our findings suggest that victimization during childhood, adolescence, and early adulthood can have a long-term impact on psychological well-being, and that victimization often involves involvement in other forms of violence. These findings have implications for prevention as well as interventions with youth and young adults who have been exposed to violence.

The Centers for Disease Control and Prevention (2009) have identified youth violence as a public health issue, and they currently place high importance on primary prevention among general populations of youth. The high prevalence of violence exposure in our sample supports this argument since our sample would not be considered high risk. The findings also highlight the importance of screening for all forms of violence exposure among individuals seeking mental health services, even relatively “low risk” populations. Screening for intimate partner violence (Rabin, Jennings, Campbell, & Bair-Merritt, 2009) is a fairly common practice in healthcare settings, while screening for exposure to other forms of violence is less common. The Trauma Assessment of Adults instrument (Cusack, Frueh, & Brady, 2009) is a simple 13-item instrument that can be administered in minutes, which measures lifetime sexual and non-sexual victimization, witnessing traumatic events, as well as experiencing accidents and natural disasters. Our findings suggest that screening for perpetration (especially among women) may also be important, since women were more likely than men to experience symptoms of PTSD as a result of engaging in violence. Items pertaining to perpetration could be added to a

trauma exposure instrument. Differentiating between recent and lifetime exposure might also be important, as women were more likely to report symptoms of PTSD as a result of recent but not lifetime witnessed violence.

Depression was a significant problem among our sample, especially for women. The National Depression Screening Day (Screening for Mental Health, Inc., 2009) was first introduced in 1991 in recognition of the prevalence of depression among the American population. The goal is to increase awareness of depression, and to identify college students who are at-risk for mood and anxiety disorders. Another goal is to refer those in need to appropriate counseling services. College campuses should take steps to increase the number of students who participate in these screenings. They can be done online, and could be incorporated into courses that use web-based technologies. Courses that attract a large number of victims (e.g., Sociology of Victimization) should also be targeted. We also found a fairly high percentage of students with symptoms of PTSD. The high correlation between PTSD and depression ($r = .77$) suggests a benefit of screening for PTSD as well as depression, and could be done at the same time.

Finally, social support had powerful main effects in reducing depression and symptoms of PTSD, and significant moderating effects on recent victimization. Interventions that include social support seem critical in reducing the effects of victimization. This finding is consistent with the sociological tradition dating back to Durkheim (1951), who recognized the importance of social integration to mental health. Hogan, Linden, and Najarian (2002) evaluated the effectiveness of several types of social support used in treatments (including involvement of family and friends) in a wide range of settings. Although none of the programs addressed the effectiveness of social support

in reducing the effects of violence exposure, they found some support for the use of social support in other contexts. Involving family and friends in treatment could be an important strategy in reducing the effects of victimization.

Table 1. *Prevalence of direct and indirect exposure to violence*

Witnessed violence and violence heard about during lifetime, and in the past twelve months

Variable	Witnessing			Past 12 months			Lifetime			Heard about*		
	Mean	SD	Range	Mean	SD	Range	Mean	SD	Range	Mean	SD	Range
Hit, kicked, pushed, shoved, slapped	2.51	.99	1-4	1.88	.88	1-4						
Carry gun	1.81	.89	1-4	1.55	.80	1-4	1.68	.92	1-4	1.52	.84	1-4
Police arrest	2.44	.86	1-4	2.04	.84	1-4						
Carry knife	1.66	.93	1-4	1.53	.85	1-4						
Beaten up	2.03	.90	1-4	1.53	.74	1-4	2.26	1.06	1-4	1.86	.92	1-4
Gunshots	1.76	.94	1-4	1.52	.84	1-4						
Run for cover	1.21	.57	1-4	1.11	.46	1-4						
Killed	1.10	.39	1-3	1.03	.23	1-4	2.0	.97	1-4	1.72	.89	1-4
Shot	1.06	.25	1-4	1.04	.27	1-4	1.87	.94	1-4	1.62	.83	1-4
Pull gun	1.19	.48	1-4	1.11	.35	1-4						
Pull knife	1.19	.51	1-4	1.06	.31	1-4						
Attacked knife	1.05	.27	1-4	1.03	.22	1-4	1.31	.65	1-4	1.20	.52	1-4
Badly hurt	1.71	.78	1-4	1.41	.66	1-4						

Percent reporting violent victimization and perpetration during lifetime, and in the past twelve months

Type of victimization (N = 234)	% lifetime	% in past 12 months
Forced sex	19.4%	2.6%
Attempted forced sex	6.7%	1.7%
Attacked by parent	14.3%	1.3%
Attacked by other person	30.1%	7.6%
Threatened with weapon	8.5%	2.5%
Seriously wounded	2.5%	0.0%
Type of perpetration (N=238)	% lifetime	% in past 12 months
Hit/threatened parent	15.5%	5.5%
Hit/threatened other adult	21.5%	12.6%
Hit/threatened minor	13.4%	4.6%
Attacked to seriously harm	10.5%	3.8%

*Blank cells indicate that these questions were not asked for hearing about violence.

Table 2. *Zero order correlations between independent and dependent variables and social support*

<u>Variable</u>	<u>Social support</u>	<u>PTSD scale</u>	<u>Depression</u>	<u>Lifetime witnessing</u>	<u>Lifetime hearing about</u>	<u>Lifetime victimization</u>	<u>Violent behavior</u>
Social support	1.0	-.322** N = 234	-.423** N =234	-.128 N = 234	-.114 N = 233	-.121 N = 230	-.004 N = 234
PTSD scale		1.0	.772** N = 238	.253** N = 238	.192** N =237	.342** N = 234	.173** N = 238
Depression			1.0	.140* N = 238	.153* N = 237	.276** N = 234	.105 N = 238
Lifetime witnessing				1.0	.651** N = 237	.406** N = 234	.447** N = 238
Lifetime hearing about					1.0	.408** N = 234	.399** N = 237
Lifetime victimization						1.0	.405** N = 238
Violent behavior							1.0

* p < .05

** p < .01

Table 3. *Effects of lifetime exposure to violence and exposure to violence in the past 12 months on symptoms of depression, with social support and gender as moderators*

Lifetime (N = 229)					Past 12 months (N= 226)							
Step and variable	B	SE	Beta	t	R ²	Change in R ²	B	SE	Beta	t	R ²	Change in R ²
Block 1					.015						.009	
Gender	.116	.071	.108	1.634			.134	.072	.123	1.856		
Race	-.053	.073	-.048	-.721			-.047	.074	-.042	-.628		
Block 2					.089	.074					.029	.02
Gender	.132	.075	.122	1.765			.151	.076	.139	1.997**		
Race	-.036	.075	-.033	-.481			-.014	.077	-.012	-.178		
Heard About	.008	.066	.011	.127			.020	.077	.023	.264		
Victimization	.118	.038	.237	3.135***			.198	.079	.169	2.502**		
Witness	.087	.114	.073	.761			.102	.132	.070	.773		
Violent Behavior	-.020	.073	-.020	-.268			-.037	.106	-.025	-.347		
Block 3					.262	.173					.203	.174
Gender	.188	.068	.174	2.768***			.197	.069	.181	2.852***		
Race	.058	.069	.052	.840								
Heard About	-.005	.060	-.007	-.088			.010	.070	.011	.139		
Victimization	.085	.034	.170	2.472**			.152	.072	.130	2.117**		
Witness	.089	.103	.063	.075			.079	.120	.054	.659		
Violent Behavior	.024	.066	.024	.385			.002	.096	.001	.018		
Social Support	-.311	.043	-.423	-7.215****			-.309	.044	-.428	-6.969****		
Block 4 ¹												
Heard x Support	-.055	.061	-.054	-.904			-.091	.076	-.075	-1.189		
Victim x Support	-.006	.041	-.009	.875			-.176	.103	-.110	-1.714*		
Witness x Support	.087	.096	.054	.908			.136	.128	.069	1.064		
Violent x Support	.073	.082	.250	.898			.092	.157	.223	.582		
Heard x Gender	-.002	.094	-.004	-.020			.036	.122	.067	.296		
Victim x Gender	.028	.066	.099	.421			.043	.150	.064	.776		
Witness x Gender	.113	.146	.114	.769			.212	.184	.215	1.150		
Violent x Gender	.033	.118	.057	.282			.085	.182	.096	.641		

¹Interaction terms were entered one at a time in the 4th block.

*p < .10 **p < .05 ***p < .01 ****p < .001

Table 4. *Effects of lifetime exposure to violence and exposure to violence in the past 12 months on symptoms of PTSD, with social support and gender as moderators*

Step and variable	Lifetime (N = 229)					Past 12 months (N= 226)					R ²	Change in R ²	
	B	SE	Beta	t	R ²	Change in R ²	B	SE	Beta	t			
Block 1					.009							.008	
Gender	.090	.100	.059	.897			.114	.101	.075	1.127			
Race	-.108	.103	-.069	-1.045			-.071	.104	-.045	-.680			
Block 2					.136	.127						.085	.077
Gender	.149	.102	.098	1.459			.157	.104	.103	1.503			
Race	-.057	.12	-.037	-.555			.011	.106	.007	.105			
Heard About	-.039	.090	-.037	-.435			.050	.106	.039	.466			
Victimization	.188	.052	.268	3.646****			.349	.109	.214	3.212***			
Witness	.293	.156	.176	2.878*			.241	.182	.119	1.329			
Violent Behavior	.016	.100	.011	.156			.010	.146	.005	.072			
Block 3					.224	.088						.180	.095
Gender	.205	.098	.135	2.100**			.204	.099	.134	2.052**			
Race	.037	.099	.024	.375			.105	.102	.067	1.028			
Heard About	-.053	.086	-.050	-.617			.039	.101	.031	.382			
Victimization	.154	.049	.220	3.127***			.302	.103	.185	2.916***			
Witness	.295	.148	.177	1.994**			.217	.172	.107	1.260			
Violent Behavior	.059	.095	.043	.619			.050	.138	.025	.364			
Social Support	-.311	.062	-.309	-5.022****			-.320	.064	-.318	-5.024****			
Block 4 ¹													
Heard x Support	.001	.088	.001	.991			-.099	.110	-.059	-.905			
Victim x Support	-.011	.118	-.027	-.094			-.359	.147	-.162	-2.450**			
Witness x Support	-.040	.138	-.018	-.291			-.061	.184	-.022	-.333			
Violent x Support	-.011	.118	-.027	-.094			-.021	.226	-.036	-.091			
Heard x Gender	.062	.135	.097	.461			.271	.175	.362	1.555			
Victim x Gender	.113	.095	.287	1.192			.267	.215	.285	1.238			
Witness x Gender	.321	.209	.294	1.535			.462	.263	.409	2.136*			
Violent x Gender	.304	.168	.372	1.811*			.473	.259	.385	1.826*			

¹Interaction terms were entered one at a time in the 4th block.

*p < .10 **p < .05 ***p < .01 ****p < .001

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