

The Physical and Mental Health Effects of Community Violence Exposure in Pre-Adolescent and Adolescent Youth

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Abstract

The purpose of this inquiry is to determine the impact of community violence exposure (CVE) on the physical and mental health of children and adolescents. Twelve research studies exploring this topic were found by conducting a search in Pubmed and the Cumulative Index of Nursing and the Allied Health Literature (CINAHL). The articles used in this inquiry were limited to those published in the United States after 2003. All studies directly assessed CVE and explored its association with psychological or physical symptoms. An increased risk of PTSD and internalizing symptoms were associated with CVE. Children with CVE were at a higher risk for somatic complaints. In addition, CVE was associated with higher morbidity in children with asthma. The literature was entirely self-report with both cross-sectional and longitudinal studies. These results indicate the need for further research to better understand CVE and health associations.

Ethical Perspectives Regarding Antidepressant Drug Therapy During Pregnancy

Introduction

Violence is an epidemic in the United States with widespread consequences. In 2011 alone, there were approximately 1,203,564 violent crimes nationwide, the highest number occurring in large cities (Uniform Crime Report, 2012). It is estimated that the United States spends 15% of its gross domestic product (GDP) on containing violence ("Violence Containment Spending" 2012). It affects the community in profound ways, decreasing property values, reducing productivity, and increasing health care costs (Center for Disease Control and Prevention, 2012). Reducing violence has been recognized by the Center for Disease Control and Prevention (CDC), the Surgeon General's National Prevention Council (NPC), and Healthy People 2020 as a top priority for improving public health and safety in the United States.

Youth are directly affected by the prevalence of violent crime. Violence contributes to high rates of injury and death in young people in the US, with 16 adolescents aged 10-24 murdered each day and 700,000 emergency department visits due to violent assault each year (CDC, 2012). In addition, adolescents have high rates of violent crime arrests especially among males ages 15-19 among whom the rate is 730.3 per 100,000 (Uniform Crime Report, 2012). Gang violence and membership remain high with an approximate 756,000 gang members in 2010 (National Gang Threat Assessment, 2011).

Direct victimization and participation are not

the only way that violence impacts American children and youth. Approximately 60% of children 17 and under were exposed to some sort of violence over the span of one year, and lifetime exposure rates are two to three times higher (Finkelhor, Turner, Ormrod, Hamby & Kracke, 2009). Children and adolescents living in poverty are at an increased risk for violence exposure (National Prevention Council, 2011).

The full effects of violence exposure in children and adolescents are complex. Much of the previous research in this field has focused on the effects specifically of domestic violence exposure and direct victimization. The implications of exposure to community violence are still not fully understood. This review seeks to synthesize the current body of literature regarding the physical and mental health effects of community violence exposure (CVE). Community Violence Exposure is a broad classification of many types of exposures to violence including direct victimization, witnessing, and hearing about violence within a community. In this paper, the relationship of community violence exposure to internalizing behavioral problems and somatic complaints are the focus because their associated symptoms are common reasons for youth to present for health care. Increased understanding of the health effects of CVE will allow for improved health care screening, diagnosis, and treatment. Further research in this field has the potential to inform violence prevention efforts and direct policy at local, state and national levels.

Methods

A literature search was performed using

PubMed and the Cumulative Index of Nursing and the Allied Health Literature (CINAHL). The search terms used were community violence, community violence and youth, community violence and health, community violence and asthma, and urban violence. More than 100 articles resulted from these search terms. Of these results, only articles from the United States were retained due to the confounding potential of social and cultural differences. The results were further limited to those involving youth ages 0-18 and published after 2003. From the remaining collection of articles, only those that were research studies and focused on internalizing symptoms and physical health manifestations were retained. Exclusively articles assessing the association between community violence exposure and internalizing symptoms or physical health were included.

Key variables included in this analysis are post-traumatic stress disorder (PTSD), somatic complaints, asthma, and general health status. PTSD is a mental disorder that is grounded in a traumatic event and to which individuals experience problematic symptoms (intrusive thoughts, avoidance, hyper-arousal) that extend for more than one month after the event and interfere with normal life activities. Somatic symptoms refer to a variety of physical symptoms that an individual may experience. Common complaints include stomachache, headache, decreased appetite, difficulty sleeping. Somatic symptoms may or may not have underlying medical explanations. The term is often associated with physical manifestations of psychosocial issues. Asthma is a chronic inflammatory disorder of the airways. In the United States, asthma is found in higher rates among children, minority populations, and those with a family income below the poverty level. (Akinbami, Moorman & Liu, 2011). Asthma accounts for approximately a quarter of all emergency department visits in the US. High-risk populations for asthma are also among the populations at risk for increased community violence exposure. General health status considers a variety of health indicators. The studies reviewed here took into account physical and mental health in addition to socio-economic situation and environment. Health was determined by self-report and no medical records were reviewed.

Results

The relationship of community violence exposure to mental and physical health was analyzed. The mental health impacts explored in the studies included

PTSD and the internalizing symptoms of depression and anxiety. The physical health impacts that were analyzed include somatic symptoms such as cough, stomachache, poor appetite, and difficulty sleeping. The association between CVE and asthma was examined. General health status was also considered in relation to CVE.

PTSD

Two studies examined the association between CVE and PTSD. Fowler, Tompsett, Braciszewski, Jacques-Tiura, and Baltes (2009) synthesized data from 114 studies in their meta-analysis. They found a significant association between community violence exposure and PTSD. The effect size was greater for more recent exposures. The proximity of the community violence (victimization, witnessing, hearing, etc.) did not have an effect on PTSD symptoms. In fact, community violence victimization, witnessing, and hearing were equal in predicting PTSD symptoms.

Hunt, Martens, and Belcher (2011) conducted a retrospective cohort study using the medical records of 257 African American children, and found that exposure to community violence was associated with higher levels of PTSD. Children who had been exposed to community violence were 2.6 times as likely to display clinically significant PTSD symptoms with a 95% confidence interval of [1.19, 5.65]. Community violence exposure had a similar association to PTSD as being a victim of physical abuse and a stronger association than being a witness to domestic violence.

Internalizing Symptoms: Depression and Anxiety

Five studies examined the association between internalizing symptoms and CVE. Fowler et al. (2009) found in their meta-analysis that the association of CVE to internalizing symptoms is dependent on multiple factors including the recency and proximity of exposure, and relationship to the victim. The effect of CVE on internalizing symptoms was stronger with more recent exposures and was directly related to the proximity of the exposure, with witnessing more proximal than hearing (Fowler et al., 2009). Gaylord-Harden, Cunningham, and Zelencik (2011) conducted a cross-sectional study of 278 African American youth receiving free or reduced lunches in five Mid-Western inner-city public schools. They found a curvilinear association between community violence exposure and depression in inner-city, African American youth. The association leveled off and ultimately decreased with persistent accumulation of violence exposure. Community violence exposure

was found to have a dose-dependent effect on depressive symptoms and anxiety in a mixed-race sample of children and families. Accumulation of community violence exposures was associated with higher rates of depression and anxiety.

Margolin, Vickerman, Oliver, and Gordis (2010) performed a longitudinal cohort study involving 98 families with at least one child age nine or ten at the beginning of the three-year study. High levels of exposure to community violence were associated with twice the rates of depression and anxiety (Margolin et al., 2010). This is consistent with the finding that internalizing symptoms in children and adolescents were predicted by total community violence exposure (Fowler et al., 2009).

Lambert et al. used a cross sectional study design involving 501 tenth graders of which 87% were African American and 13% were European American. Among this cohort, no relationship was found between witnessing community violence against a stranger and depressive symptoms. However, witnessing violence against a family member or close friend showed a strong positive association with depressive symptoms (Lambert et al., 2012). Anxiety was strongly associated with witnessing community violence against a family member in both genders. Among males, witnessing violence against a close friend was associated with anxiety; among females, witnessing violence against an acquaintance was associated with anxiety. Finally, Hertwick, Ziegler, and Logsdon (2010) performed a cross-sectional cohort study of 100 adolescent females: 39 predominantly African Americans of low socioeconomic status, and 61 predominantly middle class Caucasians. They found an association between depressive symptoms and CVE for the entire population. The association was equal between the sample of low-income, predominately African-Americans recruited from a teen clinic and the predominantly Caucasian college freshmen sample. However, the low-income teens did not experience the mediating effect of social support found in the college freshmen sample. This evidence suggests that socio-economic status may impact the effect of mediating factors after CVE.

Community violence exposure was consistently found to be associated with the internalizing symptoms of depression and anxiety in youth. The severity of the depressive symptoms is dependent on the cumulative exposure to community violence. The behavior of the association as the cumulative violence

exposure increased was slightly different in two studies.

Somatic Complaints

Two studies examined the association between CVE and somatic symptoms. Bailey et al. (2005) used a cross-sectional cohort design with a sample of 268 African-American children. Somatic complaints such as stomachaches and headaches are positively associated with community violence exposure. Bailey et al. (2005) found that community violence exposure in children was associated with a 28% increased risk of appetite problems, 94% increased risk of sleeping problems, 57% increased risk of headaches, and a 174% increased risk of stomachaches. These results were based on children's self-report as well as teacher report.

Hart, Hodgkinson, Belcher, Hyman, and Cooley-Strickland (2012) also conducted a cross-sectional cohort study using a sample of 409 primarily African American (85.6%) urban elementary school children. In this study, they measured CVE by child self-report. Information regarding somatic complaints was collected in two ways: by child self-report and by parent report. Hart et al. (2012) found that community violence exposure was positively associated with children's self-reports of somatic complaints. Children reporting community violence exposure were at an increased risk for self-reported, clinically significant somatic complaints; however, community violence exposure as measured by child report was not associated with parents' reports of children's somatic symptoms. This indicates the likelihood that in children, the perception of violence is more important than the actual presence of violence. Therefore, the perception is what is linked to the somatic complaints. In fact, when community violence was measured using objective data on crime such as murder, theft, and assaults, there was no association with somatic complaints.

Asthma

Two studies examined the association between CVE and asthma. Wright et al. (2004) performed a cross-sectional cohort study with a sample of 937 children aged 5-12 with asthma recruited from seven major cities who had at least one hospitalization or two emergency room visits during the six months before screening. After controlling for income, employment status, caretaker education, housing problems, and other life events, community violence exposure was positively associated with increased asthma morbidity as measured by wheezing, sleep disruption, and inter-

ference with activities.

Walker, Lewis-Lad, Kub, Tsoukleris, and Butz (2008) conducted a longitudinal cohort study of 231 urban caregivers with children ages 5-12 with asthma. Among 231 predominantly African American children with asthma, community violence exposure as reported by caregivers was associated with increased frequency of night symptoms (Walker et al., 2008). This is consistent with the results of Wright et al. (2004) in their study of 937 inner-city children with asthma.

General Health Status

Two studies looked at the association between CVE and overall health, and the effect of CVE on general health status was unclear. Fredland, Campbell, and Han (2008) used a cross-sectional predictive correlational model with their sample of 309 predominantly African American 7th graders. The model used by Fredland et al. (2008) found no significant effects of CVE on overall health status among 890 urban middle school students, whereas domestic violence exposure, direct victimization and coping did have a significant impact. Health encompassed physical, mental, and behavioral symptoms.

Boynton-Jarrett, Ryan, Berkman and Wright (2008) used a nationally representative sample of 8984 youths aged 12-18 for their longitudinal cohort study. Contrary to Fredland et al. (2008), they found a graded increase of self-reported poor health with increased cumulative violence exposure. These results are more convincing due to the large, nationally representative sample size. More studies are needed to confirm these findings.

Gender

The mediating effect of gender is not consistent throughout the results. It is unclear if there were gender differences in PTSD symptoms associated with community violence exposure. Fowler et al. (2009) found no significant differences between males and females in prevalence of PTSD symptoms. This contradicts the results of Hunt et al., who found an association between female gender and increased prevalence and severity of PTSD symptoms.

Gender has an important impact on internalizing symptoms. Fowler et al. (2009) determined that all female samples generated higher rates of internalizing symptoms than all male samples. Lambert et al. (2012) found that females reported higher rates of anxiety and depressive symptoms than males. Gaylord-Harden et al. (2011) found that their curvilinear association between community violence exposure and

depressive symptoms was only statistically significant in males. On the contrary, females displayed a positive linear association between community violence exposure and depressive symptoms, similar to anxiety. This may be due to a numbing effect in males after repetitive exposure to violence that does not occur in females. The linear association between CVE and anxiety held true for both males and females.

Age

Age-related differences exist in the type and magnitude of effects of community violence exposure. Boynton-Jarrett found that early violence exposure had a greater impact than adolescent exposure on poor self-reported health. In the association between CVE and PTSD, there were no differences in prevalence between children and adolescents (Fowler et al., 2009; Hunt et al. 2011). Age seemed to have the greatest mediating effect on somatic complaints. Hart et al. (2012) found an adjusted 38% decrease in odds of somatic symptoms for every year older the child was.

Summary

Overall, the empirical evidence suggests that there are significant mental and physical health consequences associated with CVE. Increased risk for PTSD symptoms is associated with CVE. Internalizing symptoms are positively associated with CVE and are dependent on the cumulative exposure. CVE was linked to increased risk of somatic complaints, and asthma morbidity is higher in children with CVE.

Discussion

Limitations

Research in the field of community violence exposure is still in its infancy with much room to grow. One of the greatest limitations in synthesizing the current body of literature is the inconsistency of community violence exposure measurements. The determination of CVE ranged from validated measures to a set of questions specific to one study. For example, Bailey et al. (2005) used the "Things I've seen and Heard" 5-point scale self-report questionnaire which consists of 20 questions determining type and frequency of exposure to violence when investigating the association between somatic symptoms and CVE. Hart et al. (2012) studied the same association but used the Children's Report of Exposure to Violence, a 29-item questionnaire assessing children's self-reported exposure to community violence. The different measures of CVE make it difficult to compare results. Fowler et al. lists the variety of measures of CVE as one of the limitations to their meta-analysis.

Other validated measures used in the studies included the Multicultural Events Schedule for Adolescents, an 82-item self-report measure of stress for adolescents living in an urban environment, the Survey of Exposure to Community Violence Scale.

Another common limitation in these studies is the reliance on self-report in measuring both CVE and health status. This can have a significant impact on the accuracy of results. Hart et al. found that the parental reports of children's somatic symptoms differed greatly from the children's self-report as did their reports on CVE. This makes it difficult to draw conclusions about the association between CVE and somatic symptoms, though it does provide insight on the effects of perception.

Subsequent studies should involve more diverse samples. Most of the studies used for this review examined samples of predominantly low-income, urban, African American. This may reflect a societal belief that community violence is an urban problem associated with low-income, under-resourced areas, which tend to be populated with racial minorities. This has the potential to build into a dangerous stereotype that community violence is a minority problem. Further, it has the potential to indicate that community violence is not present anywhere else, a view unsubstantiated by data. In order for results to be generalizable, studies must include a variety of ethnicities, races, and socio-economic groups. This information will also be important for understanding mediating factors and developing appropriate interventions.

Research Implications

Future research needs to focus on developing a common measurement of CVE. The measure should be able to account for the different types of violence, the proximity of the violence, the relationship to the victim, and the recency of the exposure. Future studies should further seek to determine if exposure to different types of violence has different outcomes. In addition, it will be important to further illuminate the mediating factors involved, as more is understood about the specific impacts of CVE. Future studies should seek to understand which factors help decrease the negative impact of CVE. Ultimately, it will be important to test the efficacy of various interventions at the individual, family, and community level in reducing the negative effects of CVE.

Clinical Implications

There is convincing evidence that CVE has a significant impact on physical and mental health in

low-income, urban, African-American youth. While remaining sensitive to the potential racial and/or socioeconomic bias of the current research, this information can still inform clinical practice in several ways. Youth should be screened for their perceived levels of CVE. Those reporting exposure should be screened for PTSD, internalizing symptoms and somatic symptoms, and conversely, youth presenting with psychological or somatic symptoms should be screened for CVE. Youth diagnosed with asthma having significant CVE may need to be followed more closely to ensure that symptoms are being controlled. Finally, clinicians should seek education about PTSD, depression, and anxiety in order to provide effective interventions and referrals as needed.

Policy Implications

Evidence of the negative effects of CVE on physical and mental health demonstrates the need for increased violence prevention efforts. Cities should focus on improving the economic viability of low-income neighborhoods with high rates of violent crime. The effects of CVE on mental health should help inform the practices of the juvenile criminal justice system especially when re-initiating youth into a community with high rates of violence. Further research in this field may also inform firearm policy as it relates to public health. The government should continue its efforts to reduce violence in the United States through education and initiatives carried out by the CDC, NPC, and Healthy People.

Conclusion

Despite limitations of sampling and self-report, current research suggests an association between CVE and health in low-income, urban, African-American youth. In this population, CVE has been associated with PTSD, depression, and anxiety. In addition, CVE has an impact on somatic symptoms and asthma morbidity. Effects of race, socioeconomic status, gender and age are still unclear and merit further research. As this field of research grows and associations are better understood, interventions can be developed both for treatment and prevention. Policy at all levels should compliment these efforts by attempting to reduce violence through legislative action. Violence continues to be problem of epidemic proportions in the United States, and its full impacts are only beginning to be understood. With prevention, treatment, and violence reduction efforts, public health can be significantly improved and health care costs reduced. Understanding the effects of community violence exposure is impera-

tive to developing healthy youth and a healthy country.

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