THE EPIDEMIOLOGY OF WITNESSING COMMUNITY VIOLENCE
IN CHILDHOOD AND ADOLESCENCE

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ABSTRACT

We review recent empirical work investigating the distribution, determinants and consequences of witnessing community violence among children and adolescents. 30 studies systematically reporting the prevalence and/or consequences of witnessing community violence during childhood and/or adolescence were identified and summarized (table 1). Lifetime prevalence estimates ranged from 1 to 43% for witnessing a murder, from 9 to 55% for witnessing a stabbing, and from 4 to 70% for witnessing a shooting. Variability is less among studies using inner city, low-income American youth where witnessing murder was typically reported by a quarter of the participants. Combining major findings across studies indicates that males, ethnic minorities and urban residents are at increased risk for witnessing violence, and that higher rates of PTSD, depression, distress, aggression, and externalizing behavior disturbances are reported among those who witness violence. Degree of family conflict, domestic violence and family support were demonstrated to moderate the impact of exposure to violence.

Many of the studies reviewed investigated exposure to community violence during a period in which urban crime rates were at their peak. Few comprehensive studies on children’s exposure to community violence have been conducted since the recent downward trends in urban violence in the U.S. Longitudinal research designs will be essential to capture a more complex picture of the impact of children’s exposure to violence given recent changes in trends. The review has proved particularly useful in related efforts to improve the capacity to accurately measure ETV in the context of the multilevel, longitudinal research design of the Project on Human Development in
Chicago Neighborhoods (PHDCN). The results of this review have been applied to refine conceptual, methodological and analytical features of the PHDCN. New directions in this research and recommendations for an ongoing research agenda and reasoned policy on children’s exposure to violence are discussed along with improvements in clinical and public health prevention and intervention efforts.

INTRODUCTION

According to most reports, the “epidemic” of violence affecting young Americans peaked in 1993 and has been on a promising, more or less linear decline ever since (Cole, 1999). Despite recent reports that violence in many of the major urban areas in the United States is on the decline, the impact of such trends on the degree to which children, especially those in inner-city urban areas, are exposed to community violence remains a complex issue. Violence in major American cities rose throughout the 1980s and peaked by the early 1990s. By 1992, homicide had become the leading cause of death among black males and females 15-34 years of age and the second leading cause of death for all 10-19 year olds (Hammett et al., 1992). A great deal of concern was directed at the increasing rates of violence among youth as the years 1985-1991 witnessed a 154% increase in the rate of homicide among young people aged 15-19, surpassing that for young adults in the 25-29 year old and 30-34 year old age groups. Even though rates of homicide for 15-19 year olds reached their peak in the late 1980’s, they now remain among the highest ever recorded in the US for this age category. Thus, even as the US is experiencing a welcomed decline in violence, the degree to which young people are impacted by violence remains “unacceptably high” (Cole, 1999).
Recent reports from the Centers for Disease Control (CDC) demonstrate that homicide remains the second leading cause of death for young people between 15-24 years of age. Moreover, homicide is the leading cause of death for African Americans and the second leading cause of death for Hispanic youth in this age category (Cole, 1999).

Though startling, such homicide figures only reflect the most extreme forms of community violence in many neighborhoods throughout the United States (Richters & Martinez, 1993a). It has been estimated that the ratio of non-fatal to fatal assaults may be as high as 100 to 1 (Rosenberg & Mercy, 1985). Even though the overall rates of violence in major urban areas are falling, the rate at which American youth, especially those in certain sociodemographic groups or geographic groups, are exposed to violence in their communities continues to be a source of great concern. Of particular interest to the medical and public health community are the non-fatal health consequences for those children and adolescents who are exposed to chronic violence and urban conflict. Longitudinal studies such as the Project on Human Development in Chicago Neighborhoods, present important opportunities for assessing both acute and chronic exposure to violence in children and adolescents and understand their long-term impact. In this light, this review has provided a better understanding of the current and future challenges that are involved in the conceptualization and improvement of a measure of child and adolescent exposure to violence in our study which will be discussed at the end of this review.
Nature of Exposures Included in Review

When studying youth exposure to violence, many authors have considered both “direct” exposure, or victimization, and “indirect” exposure, i.e. witnessing (Richters & Martinez, 1993; Osofsky et al., 1993; Martin et al., 1995). Victimization refers to intentional acts initiated by another person to cause harm. Examples include being chased, threatened, beaten up, robbed, mugged, raped, shot, stabbed or killed. There is less agreement regarding the definition of “witnessed” violence. Some authors have referred specifically to eye-witnessing an event that involves death, injury or a threat to the physical integrity of another person (Shakoor and Chalmers, 1991). Others have also included hearing violent events take place such as gun shots or screams (Campbell & Schwarz, 1996). Others still have included the witnessing of lesser crimes such as property damage (Lai, 1999), witnessing of violence on television and in movies (Cooley et al., 1995), having knowledge of close other’s victimization (Bell & Jenkins, 1993) or hearing about violent events (Richters & Saltzman, 1990). Sheley, McGee, and Wright (1992) measure exposure to violence in terms of participants’ perceptions of the amount of gun-carrying in and outside of school, the amount of violence in their school, and whether they feel scared most of the time at school.

In this paper we consider exposure to violence as a broad class of events, composed of victimization from, witnessing of and hearing about “real life” (not fictional) violent events. We refrain, however, from labeling exposure as either “direct” or “indirect”. As the observation of a violent act, such as a stabbing, before one’s eyes, can easily be viewed as a direct exposure, the use of this terminology can be misleading. Instead, we will describe exposure to violence in terms of different levels of exposure:
Primary exposure, indicating victimization; Secondary exposure, referring to witnessing violence visually or auditorily; and Tertiary exposure, where one hears or learns about violent death, serious harm, or threat of death or injury to another person.

Most previous research has focused on youth primary exposure to violence (personal victimization) and less is known about the prevalence, antecedents or consequences of secondary or tertiary exposure. In documenting exposure to violence in children, the public health significance of being a witness has become as much a concern for the production of psychological harm as being a victim (National Research Council, 1993). This paper will review recent empirical data that has focused on witnessing violence by children and adolescents. The literature review will focus specifically on violence occurring in the community, rather than domestic violence, which has been reviewed elsewhere (Attala et al., 1995).

**Focus of Review**

This paper will aim to integrate available empirical evidence regarding: (1) the prevalence of witnessing community violence in childhood and adolescence; (2) individual and contextual risk factors for witnessing violence; (3) the consequences of this type of exposure in terms of health effects, including psychiatric disorder, social-emotional adjustment, behavioral and physiological consequences; and (4) potential moderators of the impact of witnessing violence.

**Methods**

A literature search was conducted to identify all studies investigating exposure to community violence in the period between March 1984 to March 2000. Searches were
conducted on Medline (National Library of Medicine), PubMed and PsychLit for English-language literature containing the subject terms exposure to violence, violence, community violence, adolescence, adolescent behavior, children and environmental exposure. In addition, bibliographies of relevant published books and articles were reviewed. Original studies with quantitative data on the prevalence and/or consequences of witnessing community violence during childhood and/or adolescence (up to 18 years of age) were selected for detailed review. Studies which used well-defined and systematic methods for assessing exposure to violence were given priority.

**Prevalence of Witnessing Violence**

**Overview of Results**

Attempts to provide accurate national or local estimates for the prevalence of exposure to violence are limited by the fact that there has been no uniform collection of data regarding child and adolescent witnessing of violence. Police statistics reflect only the homicides and other crimes that have been reported to authorities and do not provide information regarding witnesses. Because of these and other restrictions, empirical studies often rely on local samples, use a variety of survey measures, and may look to either the child/adolescent or a parent as the reporting source. Most studies investigating the prevalence of youth exposure to violence have focused on urban settings, particularly high-crime neighborhoods. In this paper, we shall focus mainly on the witnessing of community violence. This is not always possible, however, as witnessing and being directly victimized are sometimes combined; similarly, witnessing in the home and the community are not always assessed separately.
Table 1 presents a summary of studies indicating the prevalence of children’s exposure to violence as reported either by a primary care giver or via self-report. The results are particularly troubling. Prevalence estimates indicate that, by most reports, youth living in American cities are witnessing a great deal of violence in their communities. The proportion of children and adolescents who reported eye-witnessing murder ranged from a low of 1% in a "resort" group — specifically middle and upper class, predominantly Caucasian youth (Gladstein et. al., 1992) — to a high of 47% in a low-income, African-American sample (Fitzpatrick, 1996). Variability was less among studies assessing predominantly low-income, urban youth where witnessing murder was typically reported by a quarter of the participants. The proportion of participants who reported witnessing stabbings in their lifetime ranged from 9% in the resort group and 13% among suburban sixth graders (Campbell & Schwarz, 1996), to 46% among boys in a central city school in Ohio, and a high of 56% among the central city summer camp population studied by Fitzpatrick (1996). Finally, the percentage of those witnessing a shooting sometime during their life ranged from 4% to 70% (Fitzpatrick & Boldizar, 1993). Among urban youth populations surveyed, the lowest prevalence rate was 20%. Parent reports were routinely lower than child or adolescent self-reports. Parent-reported rates of witnessing stabbing ranged from 4 to 19%, witnessing murder from 3 to 6%, and witnessing shooting from 7 to 26% of those studied. The consistent pattern of parent underreporting in children’s exposure to violence has been confirmed by Kuo (in press).

Findings across studies consistently indicate that youth living in urban areas are exposed to high levels of community violence. While it is often suspected that the
problem is more severe in inner-city communities, this review reveals the paucity of data collected in other types of settings. The survey of children of farm workers by Martin and colleagues (1995) and students from a school in a small Ohio city (Singer et al., 1995) reveal levels of exposure comparable to the urban samples, suggesting that the problem may be overlooked in some rural and small city settings. The two remaining suburban groups (Campbell & Schwarz, 1996; Singer et al., 1996) and the resort group (Gladstein et al., 1992) reported rates lower than among the urban populations.

**Similarities and Differences Studies**

The varying prevalence estimates for witnessing violence may result in part from differences in sample characteristics, data collection instruments, and reporting methods. These methodological differences and limitations affect the resulting prevalence estimates and make interpretation of results and comparisons across studies difficult. Study samples differed considerably from youths living in housing projects to those being seen for pediatric care to those attending specialized schools. As shown in Table 1, samples also differed in socioeconomic and age composition.

A variety of instruments have been developed and used to assess youth exposure to violence. In the studies summarized in Table 1, authors for the most part developed a questionnaire for the purpose of their study or used an adaptation of the NIMH Survey of Exposure to Community Violence, Self-Report Version (Richters & Martinez, 1993a). The different instruments lack uniformity in how they are administered as well as in defining what events are considered ‘violent’ and where events occur. Although many studies have inquired about violence in diverse settings (e.g. in the community versus in
the home), most instruments fail to separate the nature or impact of exposure by setting, despite the acknowledged importance of such analyses (Selner-O’Hagan et al., 1998).

Methods for combining information into some aggregate index of levels of exposure to violence also differ radically across studies. Most measures weight violent events equally despite extensive qualitative differences between item content (e.g. seeing someone hit versus seeing someone shot). Finally, as Cooley and colleagues (1995) point out, psychometric characteristics of these inventories are largely unknown. Two existing studies reported psychometric properties for the instruments used (Cooley et al., 1995; Selner-O’Hagan et al., 1998). The instrument, My ETV, developed by Buka et al (1996) is innovative in that it is calibrated to attribute appropriate weights to different types and severities of violence exposures. Furthermore, My ETV measures exposure to family violence, sexual violence and other sorts of personal victimization as well as exposure to community violence. Additionally, the instrument is able to distinguish persons exposed to acute and chronic violence (Buka et al., 1996).

Nature of Violent Incidents Witnessed

Putnam and Trickett (1993) warn ETV researchers of a potential methodological problem: heterogeneity in the nature and severity of traumatic exposures. They urge that studies attempt to carefully clarify the nature and types of traumatic stressors so that definitions and criteria can be standardized across studies and instruments developed to quantify levels of exposure. As yet, it is not understood which types of violent events pose the greatest threat to children, in terms of social and emotional functioning. Richters and Martinez (1993a) asserted that a “taxonomy of violence exposure will be
“indispensable” to identifying populations at greatest risk for maladjustment and psychopathology following exposure.” To a large extent, we know most about the three types of witnessing events reported in Table 1: the witnessing of a stabbing, shooting, or killing as reported across studies. In order to provide some comparison across studies, the lifetime prevalence of exposure to these events was summarized where available.

It may prove difficult to determine the relative effects of different types of violence exposure as it seems that subjects rarely report having witnessed more severe types of violence without having seen lesser types of violence. Bell and Jenkins (1993) point out that students’ experiences with violence have shown to be cumulative: those witnessing a killing had also witnessed other severe violence (robbery, shooting, stabbing). To these authors, the “pattern suggests immersion in a violent milieu in which children are exposed to violence.” In such an environment, it may not be possible to witness only one type of violence. Later studies have provided evidence confirming the cumulative nature of children’s exposure to violence (Kindlon et al., 1997; Selner O’Hagen et al., 1998).

The relationship between the victims and perpetrators of witnessed violence also bears further attention in research design. Richters and Martinez (1993a) attempted to assess the nature of the violence children witness by probing their participants for details surrounding violent events, such as location, frequency and persons involved. They found that the majority, 62%, of violence witnessed was committed by people familiar to fifth and sixth graders (families, friends, acquaintances rather than strangers). Similarly, 67% of the victims of violence witnessed by older children were known to the children. Future studies applying the My ETV instrument (Buka et al., 1996) will be directed at
examining similar contextual variables such as location of the exposure and identity of the victim and perpetrator.

**Setting of Events Witnessed**

Richters and Martinez (1993a) attempted to gauge the prevalence of witnessing violence outside versus inside the home. In their NIMH Community Violence Project, the fifth and sixth grade participants were asked about the location of the violence they had witnessed; specifically, whether the events took place in the home, near home, in school, or near school. The children reported that most of the violence they had witnessed took place predominantly near their homes (68%). Only 7% of the violence witnessed took place in their homes and 9% in school. It is possible that incidents of violence witnessed in the home or in school differ in nature and type from those listed in the questionnaire used. For example, events like shootings, stabbings, muggings, drug trade, arrests, etc. may be more likely to occur outdoors rather than indoors and for this reason, the children reported witnessing violence more outside than inside the school or home.

Using the Parent-Report version of the NIMH Survey, Osofsky, et al. (1993) report a strong and significant relationship between exposure to community violence and the incidence of family violence. For example, a regression analysis of severe family conflict and witnessing community violence yielded a coefficient of .37, p<.005. The relationship between domestic violence and exposure to community violence is an area that needs to be studied more intensively. In this same manner, family violence is
underlined as an important control variable to be considered in studies investigating the psychosocial impact of exposure to community violence.

**Who Witnesses Violence?**

**Individual Risk Factors**

**Gender**

Several studies found that males were more likely than females to be victims of and witnesses to violent acts (Fitzpatrick and Boldizar, 1993; Gladstein, Rusonis, & Heald, 1992; Schwab-Stone et al., 1995; Selner-O’Hagan et al.; Singer et al., 1995). Gladstein and colleagues found this to be true in both the inner-city and the upper-middle class groups studied. However, some evidence exists that the role of gender as a risk factor of exposure to community violence may differ by age. In a recent study of preschool children, Shahinfar et al. (2000) observed no main effects or interactions of gender on children’s exposure to community violence. In a longitudinal study, Attar and Guerra (1994) found that girls of elementary school age actually reported more violence exposure than boys, but two years later, there were no gender differences in exposure to neighborhood violence.

**Age**

There were some inconsistencies in the findings regarding age of the participants and prevalence of exposure. In general, most studies reported increasing prevalence of lifetime exposure to violence with age. Parental reports in Richters and Martinez’s (1993a) study indicated that fifth and sixth grade children were significantly more likely than first and second graders to have witnessed both muggings (43 versus 25 %) and
arrests (70 versus 37 %). Similarly, Selner O’Hagan et al. (1998) found that younger subjects generally reported less exposure than did older subjects. In contrast, Schwab-Stone et al. (1995) found that eighth-grade students’ level of exposure was significantly greater than that of either the sixth or tenth-grade students. Fitzpatrick and Boldizar (1993) tested the association of witnessing violence with different age groups and found no relationship. The degree to which young children can reliably report exposure to violence continues to be raised as an important challenge in this domain of study.

Richters and Martinez (1993a) found that the significant parent-child associations on summary ratings of exposure to violence indicated that children as young as age 6 may be able to provide “useful information” on exposure to violence. Several measures have been developed to assess exposure to violence in young children (Richters, Martinez, & Valla, 1990; Fox & Leavitt, 1995).

Overall, it was clear from most studies that even the youngest participants are witnesses to community violence (Taylor et al., 1994; Richters & Martinez, 1993a; Shahanifar, Fox, & Leavitt, 2000). The self-reports of younger children suggest that a significant number had already witnessed high levels of violence by the time they entered first grade -- significantly more so than indicated by their parents’ reports (Richters & Martinez, 1993a). Parental reports noted by Taylor et al. (1992) indicate that one of every ten 1- to 5-year-old children attending Boston City Hospital witnessed a shooting or stabbing; half in the home, half on the streets.

**Race/Ethnicity and SES**

In studies comparing the prevalence of witnessing violence among adolescents of different ethnicities or social classes, violence exposure was greater for ethnic minorities.
Several studies reported higher rates of exposure among African-Americans (Fitzpatrick & Boldizar, 1993; Gladstein et al., 1992; Selner-O’Hagan et al., 1998). In some studies, African-American and Latino/Latina students combined (Singer et al., 1995) reported more witnessing than Caucasian youth. Among children of migrant and seasonal farm workers, Martin et al. (1995) found that exposure to violence was significantly higher among African-American children than Hispanic children, and was more common among English speakers compared with Spanish speakers (this difference had borderline statistical significance).

Across most studies in this review, those reporting the highest rates of exposure to violence tended to live in low-income areas (Fitzpatrick & Boldizar, 1993; Schubiner, et al., 1993; Fitzpatrick, 1996; Moses, 1999; Overstreet et al., 1999). Singer and colleagues (1995) also found that students of low SES reported higher rates of exposure to violence. Campbell and Schwarz (1996) compared ETV in preadolescent children living in urban as compared to suburban areas of Philadelphia. Combined exposure by witnessing a beating, robbery, stabbing, shooting or murder was 57% in the suburban sample and 88% in the urban sample. Gladstein et al. (1992) found that in comparing upper to middle class and inner city samples, significantly more of the inner city sample had been exposed to severe violence and knew someone who had been victimized personally. The authors of both studies pointed to the importance of the fact that high rates of ETV are not endemic to low-income neighborhoods, but that the intensity and severity of events witnesses appears to disproportionately affect low-income youth. Further corroborating the view that SES may not provide a buffer against traumatic exposures, findings of a study on posttraumatic stress disorder in a community population of older teens (Gianconia et al.,
1995) demonstrated that higher SES teens were no more likely to have higher overall trauma scores ($X^2=.22$, $P<.64$, NS) experience severe traumas such as rape and physical assault when compared to lower SES teens ($X^2=.05$, $P<.99$, NS).

Not included in Table 1, but relevant to this discussion, is a study by Breslau (1991) designed to assess risk factors for young adult exposure to ‘trauma’ reports that the following characteristics were associated with a higher risk for exposure to traumatic events: male gender, less than college education, a history of early conduct problems, neuroticism, extroversion, and family history of any psychiatric disorder or substance problems. In a longitudinal design, Lynch & Cichetti (1998) observed a “transactional relationship” whereby children who had clinically high levels of externalizing behavior at Time 1 witnessed more community violence one year later when compared to children below the clinical cut-point. ($F(1, 313)=5.58$, $p <.02$). Important to our understanding of exposure to traumatic events was the finding that the probability of exposure was not the same for all participants, and thus unlikely due to chance alone. It may be the case that some factors, including personality traits, may be associated with increased probability of exposure.

Familial Risk Factors

Living Arrangement & Family Composition

Researchers also examined numerous demographic and family characteristics as possible risk factors for violence exposure. After testing parents’ education, income level, family structure and living arrangements, Richters and Martinez (1993a) found that
the only characteristic significantly associated with total violence exposure in both younger and older children’s reports was family living arrangements. More specifically, younger children who reported higher levels of witnessing community violence were more likely to live in houses rather than apartments \((r=.34, \ p<.01)\). Families living in houses were also more likely to have lived longer at their current residence \((r=.43, \ p<.01)\) and to have moved less in the past 5 years than those residing in apartments \((r=-.26, \ p<.05)\). Martin and colleagues (1995) found that children of seasonal farm workers who were not living with both of their biological parents were significantly more likely to be exposed to violence compared with children living in two biological-parent families. Shubiner and colleagues (1993) found that subjects living with families headed by their fathers or their grandmothers were significantly more likely to have seen a physical fight in the three months prior to the interview than were those living in homes headed by their mothers or by themselves. Fitzpatrick and Boldizar (1993) did not find significant differences in the degree of exposure based on the presence of first-degree male or first-degree female relatives in the household. They did note nonsignificant trends, however, indicating that children living in households with no first-degree females and two first-degree males present were at greater risk than others for witnessing violence. Miller et al. (1999) observed that the younger male siblings of adjudicated juvenile offenders had rates of exposure to violence comparable to other community samples.

**Parenting Characteristics**

Although family-child relations appear to play a more important role in moderating children’s response to ETV as discussed later, the nature of family relationships contributed minimally to the ability to predict a child’s ETV. Gorman &
Tolan (1998) found that family and parenting characteristics did not predict those children more likely to be exposed to community violence. Likewise, Miller et al. (1999) found that the degree of parent and child conflict, monitoring, and involvement did not predict a child’s level of exposure to violence in a sample of younger male siblings of adjudicated juvenile offenders. Overall, general aspects of family-child relations were not able to reliably predict risk of ETV.

**Community Risk Factors**

The literature suggests that community risk and protective influences on child ETV is more poorly understood than are family and individual types of factors. The primary reason for this is that community level influences have been typically been deduced from a variety of structural and compositional aspects of neighborhood settings. Population indicators such as poverty rates, proportion of female-headed households, and race/ethnic composition are the more frequently used markers from which risk has been inferred (Fitzpatrick & Boldizar, 1993; Campbell & Schwarz, 1996; Selner-O’Hagen, 1998).

**Neighborhood Economic & Demographic Variables**

Of the studies reviewed for this paper, some did investigate comparisons between high and low-income communities. Results from Fitzpatrick and Boldizar’s (1993) comparison of ETV among low-income African-American and upper-middle class resort youth indicate that either sociodemographic or environmental characteristics, or both, are
contributing to a higher risk of exposure among the urban participants. In the largest empirical investigation conducted to date, Singer and colleagues (1995) found differences between witnessing among large-city students, small-city and suburban youth, particularly in the type of violence witnessed. Adolescent males from large-city schools had the greatest levels of witnessing severe violence such as stabbings and shootings (38 - 62%). However, males from a small-city school in the sample also reported substantial exposure to severe violence (35%). Suburban youths had relatively low exposure to severe violence (5-14%). Boys from this site, however, had high exposure to lesser forms of violence in school, such as witnessing someone being threatened (70%), slapped/hit/punched (81%), and beaten or mugged (32%) at school. Such findings illuminate the issue of threatening and psychological abuse from peers that characterizes the experiences of many American school children. In this same manner, it must be recognized that such statistics may be inflated by the fact that a perpetrator of such acts also witnesses their own behavior.
CONSEQUENCES OF WITNESSING VIOLENCE IN CHILDHOOD AND ADOLESCENCE

The numbers of young people witnessing violent activity in the populations studied are clearly high, if not startling. While the complexities of primary child victimization have been well studied (Putnam & Trickett, 1993; Cicchetti & Lynch, 1995; Breslau et al., 1999), much less attention has been paid to the effects of witnessing violence on adolescents and children. While witnessing violence is believed to negatively impact development and cognition, its impact on the social and emotional functioning of young people is not clearly understood. Many authors urge more research to understand the implications of witnessing violence, particularly the short- and long-term consequences of these events. Existing research, reviewed below, suggests that high levels of witnessing violence indeed place youth at risk for the development of psychological, social, academic, and physical difficulties as well as engaging in violent acts themselves. Richters (1993) found that research on children living in war-torn areas and children growing up in violent families “point to numerous domains of cognitive, social, emotional, and psychophysiological functioning that can be severely affected by exposure to violence, including depression, withdrawal, fear, anxiety, affect deregulation, aggression, dissociative reactions, and intrusive thoughts.”

The psychological, emotional and physiological impact associated with varying degrees of youth exposure to, including witnessing, violence is becoming more apparent. Studies assessing the mental health and physiological effects of witnessing violence are discussed in more detail below, according to the different outcomes investigated.
Mental Health Effects of Witnessing Violence

PTSD

Jaffe and colleagues (1990) note that while specific traumatic events may have specific effects on children depending on the type of trauma, children’s stage of development and other risk factors, there are similarities among the child victims’ symptoms: “At the extreme, post-traumatic stress disorder (PTSD) appears to offer a unifying description of the anxiety disorder most often associated with overwhelming life experiences.” Indeed, empirical studies link both chronic and acute exposures to violence with the symptomatology of PTSD, particularly among younger persons (Dyson, 1990; Pynoos, 1985). It is this outcome that is the focus of most studies investigating the effects of exposure to violence.

In a review of early clinical studies addressing the effects of acute trauma, Lyons (1987) found that children who witnessed single violent events reported the following PTSD symptomatology: diminished concentration in school, sleep disturbances, flashbacks, disordered attachment behaviors, sudden startling, and hypervigilance. An example of this type of study is the work of Pynoos and colleagues (1987) in which the reactions of 159 elementary school-children to a sniper attack on their school playground were investigated. Significant relationships were found between proximity to the violence and type and number of PTSD symptoms.

The use of clinical-descriptive methodology and anecdotal evidence of these early exposure studies limits the generalizability of the conclusions reached. Furthermore, as they are focused on single violent incidents or more acute forms of community violence, the findings may not apply to children who are exposed to chronic urban violence.
(Fitzpatrick and Boldizar, 1993). In response to these limitations, Fitzpatrick and Boldizar (1993) examined the prevalence and consequences of exposure to violence in non-clinical, multi-site samples of young persons representing a wide range of age groups. They studied the relationship between chronic exposure to community violence and post-traumatic stress disorder symptoms in a nonrandom sample of 221 low-income African American youth between seven and 18 years of age. PTSD symptom reporting was moderately high for this sample of youth; 54 youth (27.1%) met all three of the diagnostic criteria established by DSM-III-R (American Psychiatric Association 1987) and witnessing violence was significantly related to the reporting of PTSD symptoms. 34% met at least two of the three criteria, 27 % met only one of the three and 12 % met none of the criteria. Greater exposure either as a victim or witness, was positively related to increased reporting of PTSD symptoms (p<.01 in both cases). In a longitudinal study of a community sample of adolescents, Gianconia et al.(1995) found that by age 18, over two-fifths of the sample had experienced a “qualifying trauma” among which exposure to extreme community violence was included, but not examined separately. The researchers found no differences between males and females with regards to risk of exposure to specific and total traumatic events. Notably, females in the sample exposed to such trauma demonstrated a six-fold higher likelihood of developing PTSD ($X^2=12.71$, df=1, p<.001) than males.

**Depression**

He sought to compare the levels of depressive symptoms in witnesses with victims of violence. The study yielded unexpected results. First, regression analyses indicated that victims of violence reported more depressive symptoms. This psychological consequence of violent victimization has been well documented (Bell & Jenkins 1990; Dyson, 1990; Richters & Martinez, 1991). Extensive depressive symptomatology is recognized as one of several expected consequences of these experiences. It is for this reason Fitzpatrick was surprised to find that witnessing violence had no significant effect on depression. Upon further analysis, witnessing violence became statistically significant: it had a negative effect on depression. That is, witnesses to violence reported significantly less depressive symptoms (regression coefficient $\beta = -1.6$, $p<.05$). Thus, while there appears to be a strong link between exposure to violence and posttraumatic stress symptomatology reporting for youth, the depression outcome may be less sensitive to these more chronic forms of exposure to violence. Fitzpatrick suggested that perhaps youths chronically exposed to violence experienced a desensitization process such that these types of daily stressors had little or no impact on their well-being.

**Dissociation**

Acknowledging the lack of empirical research on both acute and enduring effects of exposure to violence, Putnam & Trickett (1993) claimed that the chronicity of stress and the likelihood of future traumatization that is common to both child sexual abuse and community violence may induce similar dissociative coping mechanisms. Ludwig (1983) enumerated some of the protective functions that dissociation appears to serve in the face of pain, fear, or horror: 1) the automatization of certain behaviors; 2) the
resolution of irreconcilable conflicts; 3) escape from the constraints of reality; 4) isolation of catastrophic experiences; and 5) the cathartic discharge of certain feelings. A dissociated state of consciousness, or psychological distance from a situation can thus serve as an “analgesic for pain.” Desensitization to chronic community violence may result from similar defense mechanisms. In her study of 337 inner-city adolescents, Moses (1999) found that exposure to violence was correlated with hostility for all types of violence except violence directed at strangers. Moses posited that this finding gave further credence to the growing concern that many urban youth demonstrate a desensitization to the high degree of community violence in their neighborhoods. Although Moses agreed that such a reaction may serve an adaptive role for many young people, prolonged desensitization and lack of empathy for other may have other adverse and long-term consequences for urban youth.

Aggression

The Role of Family Violence

Evidence linking ETV with aggression in studies of children in violent homes and has implications for understanding children’s exposure to community violence. Documented effects of exposure to familial abuse include PTSD, difficulty controlling anger, chronic anxiety and substance abuse (Famularo, Fenton & Kinscherff, 1993; Dodge, Bates & Pettit, 1990; Hibbard, Ingersoll & Orr, 1990; Lewis, 1992). Intrafamilial ETV has been implicated in the association between abusive parenting and exhibiting violent behavior (Dodge, Bates, & Petit, 1990; Farrington, 1991; Patterson, 1986; Patterson, Debaryshe & Ramsey, 1989; Straus, 1991). In a review of domestic violence
and sexual abuse literature, Gelles and Conte (1990) estimate that 30% of those who witness violence in their homes become perpetrators of violence. This is considerably higher than the abuse rate of 2 to 4% found for children in the general population. Widom (1992) suggests that the incidence of childhood abuse increases the odds of future delinquency and criminality by 40 percent. Using the Child Witness to Violence Interview with children of battered women, Jaffe and Wolfe (1990) observed that children of both sexes have more pronounced inappropriate attitudes about violence as a means of resolving conflict and have a greater willingness to use violence themselves compared with children not exposed to wife assault. These children also tend to hold themselves responsible for the violence in their family, often admitting that their behavior caused the father’s violence. These issues seem more pronounced with the greater severity and frequency of violence observed. Undoubtedly, understanding the possible moderating effects of family violence is a critical issue to be addressed when discussing the consequences of exposure to community violence on children.

The role of aggression in those who witness violence in the community, may not be as clear-cut as in those who witness it in the home. Some evidence suggesting an independent impact of community violence on later aggression exists. DuRant et al. (1994) found that among social and psychological factors associated with the use of violence among 225 Black adolescents (living in a community with a high level of violent crime), previous exposure to violence and victimization was the strongest predictor of use of violence. Exposure to violence explained 26.6% of the variation in the adolescents’ use of violent behavior as compared to 3.8% for depression, and 1.6% for gender. The authors conclude from these data that experiencing or being a victim of
violence will increase the risk that an adolescent will, in turn, use violence against others. Jenkins and Bell (1994) reported that exposure to high levels of community violence led to defensive and offensive fighting as well as other serious high-risk behaviors, including alcohol and drug use, carrying knives and guns, and trouble in school. Martin et al. (1995) found that children exposed to violence were found to be four times more likely to carry weapons such as knives or guns.

Several longitudinal studies shed some light on the manner in which exposure to violence may relate to later aggressive behaviors. In a longitudinal study with a large sample of elementary school students, Attar & Guerra (1994) found that exposure to chronic community violence predicted peer-rated aggression. In their study of inner-city boys, Gorman & Tolan (1998) found that controlling for other types of life stressors and previous aggression, exposure to community violence was significantly related to changes in aggression a year later (accounting for an additional 5% of the variance in time 2 aggression, p<.0001). When exposure to community violence was investigated along with other life stressors, these stressors were associated with changes in anxiety and depression but were not associated with changes in aggression. This finding led Gorman & Tolan to conclude that the relationship between exposure to community violence and aggression was “qualitatively different” than that for other life stressors. Likewise, Miller et al. (1999) demonstrated that after controlling for key aspects of the parent-child relationship, witnessing community violence was significantly and positively related to changes in antisocial behavior in 6-10 year old, urban boys after 15 months of follow-up.
Distress

In several studies of younger children, scales investigating such behavioral and emotional disturbances as depression, anxiety/intrusive thoughts, sleep problems and impulsiveness demonstrated correlations strong enough to allow a single score of distress to be created (Martinez & Richters, 1993). In Part II of the NIMH Community Violence Project, Martinez and Richters (1993) systematically examined the relationship between children's chronic exposure, as a victim or witness, to community violence and their reporting of such distress and fear symptoms. For both younger (1st and 2nd grade) and older (5th and 6th grade) children, high levels of violence exposure were associated with increased reporting of distress symptomatology \( r(81) = .30, p < .01 \), but not to fear at school \( r(81) = .07, \text{ns} \) or at home \( r(81) = .09, \text{ns} \). Whereas distress symptoms in the younger children were significantly related to witnessing violence in the community and witnessing guns and drugs in their homes, for the older children, symptoms were related only to witnessing violence in the home, and not in the community. Younger children experiencing the highest levels of distress were more likely to report having been witness to someone being stabbed \( t(82)=2.30, p < .01 \), drugs in the home \( t(82)=2.60, p < .01 \), and guns in the home \( t(82)=2.38, p < 0.01 \). Richters and Martinez (1993a) demonstrated in their findings that exposure was only significantly correlated with distress in those cases where the victim was a “familiar” person. The researchers found no relationship between distress and exposure to violence directed at strangers.

In their survey of 53 mothers of elementary school children in an area of New Orleans with a high level of violence, Osofsky et al. (1993) found significant relationships between witnessing and hearing about community violence and reports of
stress symptoms in the children (r=.48 and r=.42 respectively). In their large-scale investigation of 3,735 high school students, Singer et al. (1995) used self report measures of victimization and witnessing of violence and found significant correlations with a broad range of psychological outcomes including depression ($R^2=0.31$), anger ($R^2=0.30$), anxiety ($R^2=0.30$), dissociation ($R^2=0.23$), posttraumatic stress ($R^2=0.31$) and total trauma ($R^2=0.37$).

**Substance Abuse**

Kilpatrick et al. (2000) hypothesized that witnessed violence would predict greater substance use and dependency. The researchers did observe that in a large community sample of adolescents, witnessed violence was one of the strongest risk factors for disorders related to substance use. In fact, upon controlling for demographics, family substance abuse and individual victimization, witnessing violence tripled the risk of abuse or dependency for all substances. Overall, given current attention to increasing rates of substance use and abuse by young people (Kilpatrick, 2000; Gilvarry, 2000), the relationship between exposure to violence and substance abuse merits a great deal more attention in the research literature. This research need is further compelled by known associations between early aggressive and anti-social behavior and substance abuse/dependency (White, Brick, & Hansell, 1993; Loeber, 1988).

**Psychosocial Effects of Acute versus Chronic Exposure to Violence**

Cooley-Quille et al. (1995) argue that literature on acute violent incidents suggests that children exposure to acute violence is related to features associated with
internalizing problems, such as psychological disorders, fear and anxiety, depression, helplessness and hopelessness, emotional withdrawal, and somatic symptoms. They claim that research examining exposure to chronic (high-frequency) community violence suggests a stronger relationship to externalizing behavior disturbances, such as conduct problems. In assessing the effects of differing levels of community violence among 37 school children (7-12 years), the authors found that exposure to high levels of community violence was not related to internalizing behavior and disorders (i.e. somatic complaints, withdrawn and depressive behaviors: p-values>.10), but rather was associated with externalizing behavior, i.e. impaired social and behavioral functioning (r=.44, p=.06). Martin et al. (1995) found that children exposed to violence were eight times more likely to manifest internalizing behaviors and six times more likely to evidence externalizing behaviors than nonexposed children.

In a longitudinal analysis of exposure to violence, Lynch & Cicchetti (1998) observed that witnessing community violence was correlated negatively with ratings of internalizing behavior 1 year later. Additionally, children’s externalizing behaviors at baseline were able to predict increased victimization and further witnessing of community violence by time 2. This finding indicated some support for a “transactional relationship” whereby externalizing behavior, an individual attribute, was related to subsequent exposure to community violence. Whereas their study design had focused mainly on ecological interrelationships between child maltreatment, victimization and witnessing of community violence, the authors remarked that future ecological studies could benefit from investigation of the role of protective factors along with risks.
Physiological Effects of Witnessing Violence

The impact of witnessing violence on the physiological functioning and physical development of youth, particularly at critical stages such as infancy and puberty, is less well understood but may have profound implications. Research on PTSD indicates that there can be long-term biological alterations produced by exposure to trauma, such as increased heart rate, elevated or lower cortisol levels, and chronic sleep disturbance (Hefez, Metz & Lavie, 1987; Orr et al., 1990; Pitman & Orr, 1987 & 1990; and van der Kolk, 1987).

Putnam and Trickett (1993) consider that hormonal or biological responses to trauma during the pubertal period - a time of rapid physical growth and physiological change - would occur in the context of newly maturing hormonal systems, such as the hypothalamic-pituitary-gonadal axis. The authors theorize that biological responses to stress may be similar to those reported in depression, eating disorders, and physically stressed adolescent populations (e.g. athletes, ballet dancers). Such responses include: elevated cortisol levels, elevated androstenedione, decreased levels of leutinizing hormone (LH), decreases testosterone levels, and decreased dihydroepiandosterone levels.

Goenjian and colleagues (1996) have conducted the first study to assess neuroendocrine responses to trauma, specifically a catastrophic disaster, among adolescents. They evaluated cortisol and 3-methoxy-4-hydroxyphenylglycol (MHPG) levels in a sample of 37 Armenian adolescents, five years following the 1988 earthquake. The authors found that adolescents from the city closest to the epicenter experienced more severe posttraumatic stress reactions and had significantly lower morning baseline
cortisol levels and greater cortisol suppression by dexamethasone than those living further from the city center. The authors summarized that “chronic PTSD reactions among adolescents exposed to catastrophic disaster are associated with HPA axis alterations”, which is consistent with findings described in adults with chronic PTSD. There were no significant salivary MHPG differences between the two groups of adolescents.

A possible physiological alteration caused by stressors may be timing and/or rate of physical development in traumatized children. Stress-related effects on the HPG axis include alterations in the timing and progression of physical growth, timing of puberty, and cognitive, social, and emotional development. Studies disagree, however, on whether stress activation of the HPA system, and subsequently the HPG axis, is associated with delayed or earlier menarche in girls. As these biological mechanisms remain speculative at this point, there is need for further research on the physiological responses of children and adolescents to witnessing violence (Obeidallah, et al., in press).

PROTECTIVE FACTORS AND MODERATING EFFECTS IN CHILDREN’S EXPOSURE TO VIOLENCE

In assessing children’s reactions to exposure to violence, a number of individual, family and community factors have been identified as potential moderators of the impact of ETV. Moderating variables may best be described as “third factors” whose presence or level may change the magnitude and even direction of the association under study (Hennekens & Buring, 1987). Such factors observed in the study of ETV and its impacts include age of the child at time of exposure (Hughes, 1988; Shakoor & Chalmers, 1991;
Wolfe et al., 1985), gender (Fitzpatrick & Boldizar, 1993; Gladstein et al., 1992; Richters & Martinez, 1992; Schubiner et al., 1993; Singer et al. 1995), demographics of a child’s caregivers, such as education, income, gender (Fitzpatrick & Boldizar, 1993; Richters & Martinez, 1993a; Osofsky, 1993), family/household structure (Richters & Martinez, 1993a), school characteristics (National Research Council Report on Violence, 1993), and peer relationships (Parker & Asher, 1987; Shakoor & Chalmers, 1991). Although these may have been found to exacerbate or inhibit the negative impact of exposure, they have not been well investigated in a comprehensive research design.

**Individual Moderators**

**Gender**

Although boys tend to experience exposure to violence at higher rates than girls, the literature suggests that the impact of exposure to community violence, especially over the long-term, may be more deleterious for girls. Singer et al. (1995) found that the female gender was the strongest demographic predictor of total trauma symptoms. Moses (1999) observed that although males in her sample were more likely to experience a higher exposure to violence in the community, cumulative exposure to violence (including both witnessing and victimization) was predictive of depression for females, but not for males. Exposure to violence was correlated with hostility for both males ($r=.33$, $p≤.001$) and females ($r=.22$, $p≤.01$) in her sample. Farrell & Bruce (1997) demonstrated that, examined over a series of three time intervals, exposure to violence was significantly related to the frequency of violent behaviors for girls, but not for boys.
Characteristics of the Violent Event

Characteristics of the event themselves (e.g. setting, severity, relationship to victims or perpetrator, whether witnessed alone or with others, etc.) are thought to have a moderating influence on the impact of ETV. Richters (1993a) stressed the need to delineate which types of violent experiences in different contexts carry the greatest threat in order to develop and implement appropriate intervention strategies with those at greatest risk for maladjustment. In early studies of exposure to traumatic events, Pynoos et al. (1987) indicated that a child’s reaction to trauma is “related to the proximity to the violent event, the victim’s relationship with the child, and the presence of a parent or caretaker to moderate the intensity of the event.” In their large community sample of 6 public high schools, Song, Singer, & Anglin (1998) reported that certain types of violence exposure were highly associated with specific categories of trauma symptoms. For males, the combined measure of exposure (witness/victim) to shooting or knife attack was the strongest predictor of violent behavior as well as a significant predictor of anger. For females, exposure to a knife attack or shooting, being the victim of school violence and witnessing domestic violence were equivalently associated with violent behaviors. As noted prior, further research needs to clarify the nature and types of traumatic stressors so that definitions and criteria can be standardized across studies and instruments can be developed to quantify level of exposure.

PTSD as a Moderator of Other Psychiatric and Behavioral Sequelae

PTSD symptoms may act as a mechanism by which the relationship between exposure to community violence and other co-morbid psychiatric sequelae are shaped.
Kliewer et al. (1998) found partial support for their hypothesis that intrusive thoughts mediated associations between exposure to violence and internalizing symptoms such as depression and anxiety.

Gianconia et al. (1995) observed that more than 40% of adolescents with PTSD also met criteria for major depression as compared to the 8% without PTSD who also met criteria ($X^2=31.42$, df=1, $p<.001$) for major depression. Furthermore, the study’s longitudinal design demonstrated that PTSD either proceeded or co-occurred with major depression in 70% of the cases with both disorders.

In a recent study, Mazza & Reynolds (1999) observed that PTSD symptoms may act to moderate the relationship between exposure to community violence and the outcomes of suicidal ideation and depression. Using a series of hierarchical regression analyses, the researchers demonstrated that upon controlling for depression and suicidal ideation, PTSD symptoms were the only variable to maintain a significant relationship with exposure to violence ($p<.001$). Furthermore, regression analyses designed to test moderating relationships indicated that upon controlling for PTSD, the relationships between exposure to violence and these mental health variables were weak. In this manner, both depression and suicidal ideation demonstrated an indirect, rather than direct association with exposure to violence. These authors discussed their findings as lending support to the view that PTSD resulting from exposure to violence is the mechanism may subsequently lead to depression and suicidal ideation. Because their results were from a small, cross-sectional sample, Mazza & Reynolds suggested that longitudinal studies would be an important next step in further delineating this relationship. These findings have further implications for future investigations of changes in the suicide trends among
US youth, particularly for recent information indicating that suicide is on the rise in certain groups such as African-American males (Public Health Policy Advisory Board, 2000).

PTSD has also been presented as a potential pathway linking exposure to violence with substance abuse and dependency. In a large community sample of adolescents (N=4023), Kilpatrick et al. (2000) found that controlling for demographic and family variables and victimization and witnessed violence, PTSD independently predicted increased risk of abuse/dependency of marijuana (OR=2.86, p<.001) and hard drugs such as LSD (OR=2.41, p<.05), but not alcohol. Gianconia et al. (1995) observed an association between PTSD and serious substance dependence whereby for a majority of adolescents with both PTSD and drug dependence (66.7%) and nearly half of adolescents with alcohol dependence (45.5%), development of PTSD either preceded the substance abuse disorder or occurred at the same age.

In sum, studies have linked both chronic and acute exposures to witnessed violence with PTSD symptomatology and diagnoses, using strict diagnostic criteria. It may be important to note that while adult PTSD rates have been estimated at approximately one percent in the general population, the rate of the disorder among the general pediatric population or among special populations like inner-city African-American youth has not been well-established. There is thus no control or comparison group in the non-clinical studies mentioned. Some recent studies using community samples have reported lifetime prevalence of PTSD as high as 6.3% among a sample of adolescents (Gianconia, et al., 1995) and 9.2% for young adults aged 21-30 years (Breslau et al., 1991). As Gianconia et al. (1995) point out a need to investigate the
prevalence of PTSD in the general pediatric population as many of “cross-generational” epidemiologic studies may underrepresent traumas and subsequent PTSD given potential secular increases in traumas, including exposure to community violence, experienced by today’s youth.

**Familial Influences**

In several studies, features of family and parent-child relationships were demonstrated to moderate the impact of exposure to community violence on children studied. Richters & Martinez (1993b) investigated the relationship between exposure to community violence and “adaptational success” (socio-emotional and academic functioning) while also considering teacher and child reports of family safety and stability. Although level of exposure to community violence was not a significant predictor of adaptational success, in situations where both family stability and safety were compromised, the odds of adaptational failure were dramatically increased. Overstreet et al. (1999) studied the mother’s presence in the home (as an indication of availability of family support) as a potential moderator of the emotional impacts of children’s exposure to community violence. The researchers observed that upon controlling for age, gender and other concurrent life stressors, the presence of a mother in the home was able to significantly moderate the relationship between exposure to community violence and depressive symptoms (p<.01), but not PTSD. In this fashion, children living in mother-absent homes were at risk of depressive symptoms as level of exposure to community violence increased. Family size was also observed to approach significance (p=.06) as a potential moderator of depressive symptoms, but not PTSD.
In a recent longitudinal study of urban boys at “familial risk” for antisocial behavior (younger siblings of adjudicated juvenile delinquents), Miller et al. (1999) demonstrated that the degree of parent-child conflict in the home had a moderating effect on the degree to which exposure to violence predicted later antisocial behavior, especially for boys with very low or very high exposure to community violence. In their findings, witnessed community violence was most influential in families with a low degree of parent-child conflict. In such families with a low degree of parent-child conflict, exposure to community violence was significantly related to changes in antisocial behavior over time. However, in families with a high degree of parent-child conflict, the additional impact of exposure to community violence added little to the ability to predict later antisocial behavior. In another longitudinal study, Gorman-Smith & Tolan (1998) observed differences in the ways in which two attributes of family functioning: structure and support, moderated the relationship between exposure to community violence and mental health problems. Changes in aggression were significantly related to exposure to community violence ($r=.37$, $p<.001$) in families with a high-degree of structure. This finding suggested that even highly-organized families are not able to buffer the impacts of exposure to community violence on aggression. In families with low-cohesion, exposure to community violence was significantly related to increases in symptoms of anxiety and depression a year later ($r=.30$, $p<.001$). In the presence of high levels of community violence, high family cohesion was not demonstrated to reduce the likelihood of aggression, while low levels of family cohesion appear to moderate the relationship between community violence and anxiety and depressive symptoms. The researchers viewed their findings as lending further credence to the need to investigate family
cohesion and support as an important protective factor moderating the impact of exposure to community violence on children.

**Community Influences**

The literature on community-level influences on children’s exposure to community violence and its impact remains minimal. Understanding the relationship between community influences and ETV has been a major impetus for several current studies including the ongoing work of the Project on Human Development in Chicago Neighborhoods (PHDCN). Whereas community-level influences on many psychosocial aspects of child development are commonly defined in structural terms, the PHDCN has launched methods for also understanding the *processes* which take place within and between communities which may help increase particular understanding of children’s exposure to violence. Several longitudinal investigations are currently underway with the goals of examining possible interrelationships between both community-level processes and structures on children’s ETV and outcomes such as antisocial behavior and posttraumatic stress disorder (Selner O’Hagen et al., 1998).

**CONCLUSION: Suggestions for Further Research and New Developments in the Project on Human Development in Chicago Neighborhoods**

As demonstrated by this review, several studies since the late 1980s indicate that reported rates of children’s exposure to community violence are disturbingly high, particularly among inner-city American youth. The evidence that such exposure leads to
adverse, potentially long-term, mental and physical disturbance is accumulating. The
literature to date indicates that the distribution of ETV, in most cases, is not random and
that a number of risk and protective factors and modifying variables can be identified.
Nonetheless, several areas of debate persist in children’s ETV research. For instance,
some researchers have cautioned that a “substantial proportion” of reported ETV in youth
engaging in deviant acts such as violence perpetration and substance abuse may also be
attributable to concurrent delinquency and peer-effects (Kilpatrick, 2000). Similarly, the
overlap between domestic and community violence needs to be teased apart and explored
further. It is important to note that in the studies reviewed thus far, many authors did not
separate community violence from violence witnessed in the home. As discussed,
evidence exists that a child’s response to ETV may vary depending on degree of conflict,
cohesion or support in the home environment. In all such research, there is a need to
rigorously define and distinguish between key aspects of actors and settings of ETV.

It is evident from the research reviewed in this paper that the problem of
children’s exposure to violence is a complex one necessitating a much more elaborate
and multi-faceted research response. In addition to these persistent areas of debate, four
key aspects of study and practice merit particular attention in future ETV research.
Several new initiatives within the Project on Human Development in Chicago
Neighborhoods have been launched to address gaps identified in the present research.

High-Quality Measures

First of all, there is a need to establish and replicate measures of ETV with proven
validity and reliability to allow research findings to be compared across studies and to
increase opportunities for meta-analysis. It is still not clear which results of ETV may be considered as transient, with few if any implications for subsequent development, and which symptoms or reactions have implications for long-term development of the child. For example, as many of the studies reviewed asked about lifetime exposure, none were able to explicitly investigate the relationship between duration of exposure to violence and associated impairment. Key measurement issues and greater complexity in study design may assist us in developing taxonomies of ETV which may shed light on what types of violent events lead to specific mental and behavior difficulties.

**Protective Factors, Moderating Factors & Secondary ETV Effects**

There is still a great deal of to be known about the role of individual, family, peer and ecological influences on children’s ETV and its impacts. At the peer, family and community level, the literature-to-date would be strengthened by efforts to investigate protective factors such as key supports which moderate the impact of exposure to community violence on children. At the individual level, more intricate knowledge of the impact of ETV on a child’s self perception and ability to manage other developmental tasks is needed. Additionally, it is important to develop greater understanding of the range of possible effects of Secondary ETV (e.g. Does witnessing of violence lead to more carrying guns for self-defense/protection?). In this manner, the research community should be concerned about cycles wherein exposure to violence leading to disorders such as PTSD may in turn increase the likelihood of involvement in behaviors or situations which perpetuate exposure to further violence and other traumatic events.
Routine Population Surveys

A great deal is still unknown about the psychological sequelae resulting from ETV. Furthermore, epidemiological mechanisms such as routine population surveys are needed to continuously monitor violence exposure among youth and track trends over time.

Longitudinal Studies

The dearth of longitudinal studies on children’s community ETV presents serious limitations for understanding causal pathways between ETV and other psychiatric and behavioral sequelae. Longitudinal and multi-level approaches for investigating these issues, such as the Project on Human Development in Chicago Neighborhoods (PHDCN), are a promising approach for investigating the greater complexities of the impact of exposure to violence across many levels of influence in child development. In such approaches, interactions with other types of life disruption must also be given thorough consideration.

In conclusion, it is useful to summarize several refinements in the conceptualization and measurement of child ETV in the PHDCN that are attributable to this review. First, an improved measure of ETV was developed and tested which adjusts for severity of ETV (Selner O’Hagan, et al., 1998). Secondly, the importance of contrasting acute and chronic exposure to violence has been sharpened in formulating research hypotheses and implementing a methodology. Thirdly, the study design has been strengthened to reflect a greater range of ages and developmental diversity in the
sample by measuring primary caretakers’ exposures as a proxy for young children.

Fourthly, parallel forms of the ETV measure for parents and children over the age of 6 have been tested with results that strongly support the superior validity of child reports (Kuo, et al., in press). Another refinement has been to recognize the importance of working with detailed measures of psychopathology to capture the specific disorders and impairments that are associated with ETV. And finally, the salience of adaptive aspects of children’s ecological settings and their individual psychological and physiological responses to ETV have been underscored. In all these respects, the multilevel, longitudinal design of the PHDCN has benefited. As with these improvements in the design of the PHDCN, such efforts to better investigate the complexity of children’s exposure to community violence will prove critical to moving toward a research agenda, reasoned policy as well as improved clinical and public health prevention and intervention efforts.


adaptation (pp. 32-71). New York: Wiley.


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<tr>
<th>Source, yr.</th>
<th>Location &amp; Setting</th>
<th>Age Group</th>
<th>Measure</th>
<th>Sample Characteristics</th>
<th>Witness Murder</th>
<th>Stabbing</th>
<th>Shooting</th>
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<td>Columbus, Ohio general adolescent medicine clinic</td>
<td>11-21 yrs</td>
<td>questionnaire</td>
<td>N=167 80% F 55% AA</td>
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<td>(17% of F; 28% of M)</td>
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<td></td>
<td>(17% of AA; 4% of W)</td>
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<td>(32% of B; 20% of W)</td>
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<td>N=536 45% F 100% AA</td>
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<td>Berman et al 1996</td>
<td>Miami, FL public high school</td>
<td>14-18 yrs</td>
<td>SECV</td>
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<td>60%</td>
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<td>Campbell &amp; Schwarz 1996</td>
<td>Philadelphia, PA suburban vs. urban middle schools longitudinal design</td>
<td>6th graders</td>
<td>questionnaire</td>
<td>N=437 suburban N=228: 51% F 27% AA; 65% W; 8% O urban N=209: 50% F 95% AA; 0% W; 5% O</td>
<td>3% suburban 22% urban</td>
<td>13% suburban 55% urban</td>
<td>8% suburban 47% urban</td>
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<td>Farrell &amp; Bruce 1997 (longitudinal)</td>
<td>three urban public schools S.E. United States 6th graders (avg. age 11.7 yrs) modified vers. of Things I Have Seen and Heard Survey</td>
<td>6th graders</td>
<td>modified vers. of Things I Have Seen and Heard Survey</td>
<td>N=436 58% F 94% AA 2% W</td>
<td>-</td>
<td>18% of F 26% of M</td>
<td>30% of F 42% of M</td>
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<td>Fitzpatrick &amp; Boldizar 1993</td>
<td>large, southern central city 8 housing communities</td>
<td>7-18 yrs</td>
<td>questionnaire adaption of SECV (group administered)</td>
<td>N=221 low-income N=190: 54% F 100% AA</td>
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<td>questionnaire</td>
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<td>100% AA low-income</td>
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<td>Gladstein &amp; Slater 1988</td>
<td>Ocean City, MD adolescent medicine clinic</td>
<td>11-20 yrs</td>
<td>questionnaire dev. by researchers</td>
<td>N=168 80% F predominantly AA</td>
<td>24%</td>
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<td>42%</td>
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<td>Gladstein et al. 1992</td>
<td>Baltimore &amp; Ocean, MD health clinics</td>
<td>11-24 yrs</td>
<td>questionnaire dev. by researchers (self administered)</td>
<td>N=858 74% F (inner City N=403) (80% F; 93% AA)</td>
<td>23% inner city 1% resort town</td>
<td>25%</td>
<td>42%</td>
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51
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<tr>
<th>Source, yr.</th>
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<th>Age Group</th>
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<th>Stabbing</th>
<th>Shooting</th>
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<td></td>
<td>middle-to upper class</td>
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<td>Gorman-Smith &amp; Tolan 1998</td>
<td>Chicago, IL inner city</td>
<td>11-15 yrs</td>
<td>interview (Exposure to Violence Interview)</td>
<td>N=245 100% M low-income</td>
<td>seen someone shot or killed 16% past year</td>
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<td>not asked</td>
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<td>N.E. city</td>
<td>9-19 yrs.</td>
<td>questionnaire (residential tx)</td>
<td>N=67 83% M; 17% F SECV 44% AA; 29% LAT; 16% W</td>
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<td>41%</td>
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<tr>
<td>Horowitz et al. 1995</td>
<td>New Haven, CT urban adolescent health clinic</td>
<td>12-21 yrs</td>
<td>questionnaire (Adolescent Self-Report Trauma Questionnaire)</td>
<td>N=79 100% F 81% AA 15% LAT 3% W</td>
<td>13% seen friend killed (before age 13) 28% seen friend killed (after age 13)</td>
<td>29%</td>
<td>20%</td>
</tr>
<tr>
<td>Hill &amp; Jones 1997</td>
<td>Washington D.C. child self-report</td>
<td>9-12 yrs</td>
<td>structured interview</td>
<td>N=45 low violence neighborhood</td>
<td>9% (seen fatal shooting)</td>
<td>22%</td>
<td>23%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>N=51 high violence neighborhood</td>
<td>32%</td>
<td>27%</td>
<td>37%</td>
</tr>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>all predominantly low-income</td>
<td>100% AA</td>
<td></td>
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<td></td>
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<td></td>
<td>parent report</td>
<td>N=24 low violence Neighborhood</td>
<td>4% (seen fatal shooting)</td>
<td>29%</td>
<td>33%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>N=29 high violence neighborhood</td>
<td>28% (seen fatal shooting)</td>
<td>20%</td>
<td>35%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>low-income</td>
<td>N=997 24%</td>
<td>35%</td>
<td>39%</td>
<td></td>
</tr>
<tr>
<td>Jenkins &amp; Thompson 1986 (unpublished)</td>
<td>Chicago, IL 4 high schools 3 middle schools</td>
<td>10-19 yrs</td>
<td>32 item questionnaire</td>
<td>N=997</td>
<td>17%</td>
<td>25%</td>
<td>28%</td>
</tr>
<tr>
<td>Kliewer et al. 1998</td>
<td>Richmond, VI 8-12 yrs. primary caregiver</td>
<td>structured interview (SECV)</td>
<td>N=99 60% F 96% AA low-income</td>
<td></td>
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<tr>
<td>Martin et al., 1995</td>
<td>rural North Carolina participants' homes</td>
<td>8-11 yrs</td>
<td>structured interview (SECV)</td>
<td>N=54 children of migrant farm workers 57% M 15% AA; 85% L</td>
<td>11%</td>
<td>Not asked</td>
<td>20%</td>
</tr>
<tr>
<td>Source, yr.</td>
<td>Location &amp; Setting</td>
<td>Age Group</td>
<td>Measure</td>
<td>Sample Characteristics</td>
<td>Witness Murder</td>
<td>Stabbing</td>
<td>Shooting</td>
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<tr>
<td>Miller <em>et al</em> 1999</td>
<td>New York City</td>
<td>6-10 yrs</td>
<td>questionnaire</td>
<td>N=97</td>
<td>25%</td>
<td>35%</td>
<td>33%</td>
</tr>
<tr>
<td><em>(longitudinal)</em></td>
<td></td>
<td></td>
<td></td>
<td>100% M</td>
<td>51% AA</td>
<td>45% LAT</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>Things I Have Seen and Heard &amp; SECV items</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>“high risk” (younger brothers of juvenile offenders)</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Moses 1999</td>
<td>NYC, NY</td>
<td>14-19 yrs</td>
<td>questionnaire</td>
<td>N=337</td>
<td>-</td>
<td>30%</td>
<td>“”</td>
</tr>
<tr>
<td></td>
<td>inner city</td>
<td></td>
<td></td>
<td>45% AA; 51% LAT</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>public high school</td>
<td></td>
<td></td>
<td>38% M; 62% F</td>
<td></td>
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<tr>
<td>O'Keefe 1997</td>
<td>Los Angeles</td>
<td>9-12 graders</td>
<td>questionnaire</td>
<td>N=935</td>
<td>-</td>
<td>53%</td>
<td>56%</td>
</tr>
<tr>
<td></td>
<td>suburbs and inner city</td>
<td></td>
<td></td>
<td>13% AA; 53% LAT</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>20% W; 7% AS</td>
<td></td>
<td></td>
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<tr>
<td>Osofsky <em>et al.</em> 1993</td>
<td>New Orleans, LA</td>
<td>9-12 yrs</td>
<td>structured interview (parent)</td>
<td>N=53 mothers</td>
<td>6%</td>
<td>19%</td>
<td>26%</td>
</tr>
<tr>
<td></td>
<td>elementary school serving housing development</td>
<td></td>
<td></td>
<td>100% AA low-income</td>
<td></td>
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<tr>
<td>Overstreet <em>et al.</em> 1999</td>
<td>Inner city</td>
<td>10-15 yrs</td>
<td>Survey</td>
<td>N=75</td>
<td>Not reported</td>
<td>Not reported</td>
<td>55%</td>
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<tr>
<td></td>
<td>Public housing</td>
<td></td>
<td></td>
<td>Things I have seen and heard</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>100% AA low-income</td>
<td></td>
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<tr>
<td>Pastore <em>et al.</em> 1996</td>
<td>New York City</td>
<td>11-12 graders (16yrs. ave.)</td>
<td>survey questionnaire</td>
<td>N=563</td>
<td>50% “knew someone murdered”</td>
<td>37%</td>
<td>31%</td>
</tr>
<tr>
<td></td>
<td>urban high school</td>
<td></td>
<td></td>
<td>61% AA; 30% LAT; 6% W</td>
<td></td>
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<tr>
<td>Source, yr.</td>
<td>Location &amp; Setting</td>
<td>Age Group</td>
<td>Measure</td>
<td>Sample Characteristics</td>
<td>Witness Murder</td>
<td>Stabbing</td>
<td>Shooting</td>
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<tr>
<td>Richters &amp; Martinez 1993</td>
<td>Washington, D.C.</td>
<td>6-10 yrs.</td>
<td>Structured interview (group administered)</td>
<td>N=111 49% F</td>
<td>37% (seen dead body)</td>
<td>–</td>
<td>47%</td>
</tr>
<tr>
<td>child self-report</td>
<td>elementary school</td>
<td>11-12 yrs.</td>
<td></td>
<td>N=54 48% F</td>
<td>9% 17%</td>
<td>31%</td>
<td></td>
</tr>
<tr>
<td>parent report</td>
<td></td>
<td></td>
<td>questionnaire</td>
<td>all ages low-income N=111</td>
<td>3% 13%</td>
<td>9%</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>all ages low-income</td>
<td>N=111</td>
<td></td>
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<tr>
<td>Schubiner et. al. 1993</td>
<td>Detroit, MI</td>
<td>14-23 yrs.</td>
<td>questionnaire</td>
<td>N=246 57% F 91% AA low-income</td>
<td>22%</td>
<td>42% “seen someone shot or knifed”</td>
<td>34%</td>
</tr>
<tr>
<td></td>
<td>inner city</td>
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<tr>
<td>Schwab-Stone et al. 1995</td>
<td>New Haven, CT</td>
<td>6th, 8th, &amp; 10th graders</td>
<td>group administered questionnaire</td>
<td>N = 2,248 61% AA; 22% L; 16% W</td>
<td>-</td>
<td>41.3% witnessed at least one stabbing or shooting</td>
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<tr>
<td></td>
<td>urban public school</td>
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<tr>
<td>Selner-O’Hagan et al. 1998</td>
<td>Chicago, IL</td>
<td>9-24 yrs</td>
<td>questionnaire</td>
<td>N=80 39% F 47% AA; 38% W; 10% L</td>
<td>23% lifetime 11% past year</td>
<td>51% lifetime 31% past year “weapon attack”</td>
<td>28% lifetime 16% past year</td>
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<tr>
<td>Shakoor &amp; Chalmers 1991</td>
<td>Chicago, IL</td>
<td>10-19 yrs</td>
<td>questionnaire</td>
<td>N=1035 100% AA</td>
<td>23% overall 35% overall</td>
<td>39% overall</td>
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<tr>
<td></td>
<td>7 public elementary and high schools</td>
<td></td>
<td></td>
<td></td>
<td>26% (10 y.o.) 41% (10 y.o.) 22% (10 y.o.)</td>
<td>30% (19 y.o.) 30% (19 y.o.) 60% (19 y.o.)</td>
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<tr>
<td>Sheehan et. al. 1997</td>
<td>Chicago, IL</td>
<td>7-13 yrs.</td>
<td>questionnaire (D.O.V.E.)</td>
<td>N=146 100% AA 75% below FPL 53% M</td>
<td>-</td>
<td>37%</td>
<td>42%</td>
</tr>
<tr>
<td></td>
<td>inner-city public housing</td>
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<tr>
<td>Singer et al. 1995</td>
<td>Denver, CO; Cleveland central, small Ohio city &amp; Cleveland suburbs public high schools</td>
<td>14-19 yrs</td>
<td>questionnaire</td>
<td>N=3735 52% F 35% AA; 33% W; 23% L 9% Other</td>
<td>-</td>
<td>Denver (N=1265) 30% F 38%M</td>
<td>37% F 49%M</td>
</tr>
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<td></td>
<td></td>
<td></td>
<td>Cleveland (N=1228) 44%F 46% M</td>
<td>49%F 62% M</td>
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<td></td>
<td>small Ohio city (N=862) 28% F 35% M</td>
<td>25% F 36% M</td>
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<td></td>
<td></td>
<td></td>
<td>Cleveland suburb (N=379) 7% F 14%M</td>
<td>5% F 5% M</td>
</tr>
<tr>
<td>Taylor et al. 1994</td>
<td>Boston, MA</td>
<td>1-5 yrs</td>
<td>structured interview (mothers reporting)</td>
<td>N=115</td>
<td>Not asked</td>
<td>4%</td>
<td>7%</td>
</tr>
<tr>
<td>Source, yr.</td>
<td>Location &amp; Setting</td>
<td>Age Group</td>
<td>Measure</td>
<td>Sample Characteristics</td>
<td>Witness Murder</td>
<td>Stabbing</td>
<td>Shooting</td>
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<td></td>
<td>pediatric primary care clinic</td>
<td>mothers</td>
<td>low-income</td>
<td>primarily minority</td>
<td></td>
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</tr>
</tbody>
</table>

AA = African American; L = Latino and/or Hispanic; W = White; M = Male; F = Female