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The Impact of Crime Victimization on Quality of Life

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Abstract

The authors review the extant literature examining the functional impact of crime victimization on indices of quality of life. They present findings within a conceptual framework comprised of role functioning, life satisfaction, and well-being, and social–material conditions, including crime-related medical, mental health, and employer costs, and health care utilization. The review indicates that crime victimization impacts multiple domains, including parenting skills, impaired occupational functioning, higher rates of unemployment, and problematic intimate relationships. However, data on relationships between crime victimization and overall life satisfaction were mixed, suggesting the need for further investigation. The authors conclude with a brief discussion of directions for future research.

Here we examine the functional impact of crime victimization on quality of life. Assessing quality of life has been the focus of multiple research efforts aimed at understanding the significance of life events, physical and mental health disorders, and various interventions on an individual's functioning and overall sense of well-being (e.g., Gladis, Gosch, Dishuk, & Crits-Christoph, 1999; Kaplan, 2003; Katschnig, 2006). However, limitations to this research include difficulties in defining and measuring the quality of life construct and different conceptualizations across studies (Gladis et al., 1999; Leplege & Hung, 1997; Muldoon, Barger, Flory, & Manuck, 1998). Recent studies have attempted to define a more uniform conceptualization to facilitate comparisons across the medical and mental health fields (Gladis et al., 1999; Schnurr, Lunney, Bovin, & Marx, 2009). For example, Gladis and colleagues (1999) conceptualized quality of life across three domains: (a) role functioning (i.e., difficulties in social, occupational, and interpersonal functioning), (b) life satisfaction and well-being, and (c) social–material conditions (i.e., health costs, health care utilization, and employer costs). Schnurr and colleagues (2009) used this framework to examine quality of life among combat veterans presenting with symptoms of anxiety, posttraumatic stress disorder (PTSD), or both (Gudmundsdottir, Beck, Coffey, Miller, & Palyo, 2004; Norman, Stein, & Davidson, 2007; Olatunji, Cisler, & Tolin, 2007). Specifically, Schnurr and colleagues (2009) identified significant links between anxiety, PTSD symptoms, and reduced quality of life among combat veterans, as measured by impaired role functioning (e.g., Engelhard et al., 2007; Rona et al., 2009), decreased life satisfaction and well-being (e.g., Lapierre, Schwegler, & LaBauve, 2007), and impaired social–material conditions,

such as increased likelihood of unemployment (Magruder et al., 2004; Smith, Schnurr, & Rosenheck, 2005), homelessness (O'Connell, Kaspro, & Rosenheck, 2008), and divorce (Riggs, Byrne, Weathers, & Litz, 1998; Rona et al., 2009).

Although these findings have advanced the traumatic stress literature, it is important to examine quality of life indices among survivors who have experienced other types of traumatic events. Thus, we focused on crime victims. Our definitions of crime victimization are consistent with those of the Uniform Crime Report (Federal Bureau of Investigation, 2009), and include victims of forcible rape, sexual assault, aggravated assault, and survivors of homicide. We also review the relevant literature on victims of intimate partner violence, using the definition by the Centers for Disease Control (CDC; 2008): "intimate partner violence describes physical, sexual, or psychological harm by a current or former partner or spouse. This type of violence can occur among heterosexual or same-sex couples and does not require sexual intimacy." In defining quality of life, we rely on the conceptual framework proposed by Gladis et al. (1999) that focuses on (a) role functioning, (b) life satisfaction and well-being, and (c) social-material conditions. Within this framework, role functioning includes the parenting role, intimate relationships, and occupational and social functioning; life satisfaction, and well-being refer to the victim's subjective report of these constructs; and social-material conditions include direct (e.g., medical costs, lost wages) and indirect (e.g., lost productivity) costs of crime victimization to the victim and employer, and problems with healthcare utilization. We review literature examining the impact of crime victimization across these three separate, but highly related domains.

ROLE FUNCTIONING

Crime victimization can impact an individual's ability to perform across a variety of roles, including those related to parenting, intimate relationships, and occupational and social functioning. Much of the available research focuses on changes in functioning among victims of intimate partner violence, with less research devoted to examining the consequences of other crime types on role functioning. In the sections below, we review the available literature on the impact of crime victimization on parenting, intimate relationships, and occupational and social functioning.

Parenting Role

Much of the work examining the impact of crime victimization on parenting focuses on female victims of partner violence or parents with a history of abuse as children. In general, theories proposed that partner violence has a negative impact on the ability to parent due to the victim's own physical and emotional distress (e.g., Graham, Rawlings, & Riggsby, 1994; Herman, 1992). Some studies have suggested that mothers in abusive relationships perceive more stress and difficulty in the parenting role (e.g., Holden & Ritchie, 1991; Levendosky & Graham-Bermann, 1998; Levendosky, Lynch, & Graham-Bermann, 2000), whereas other studies have found mixed results. For instance, in a qualitative study of women who were abused by an intimate partner, Levendosky and colleagues (2000) found that the majority of women believed that their partner's violence affected their parenting. However, the women identified both negative (e.g., reduced patience and motivation, increased agitation and irritability, harsh discipline tactics) and positive (e.g., increased empathy and caring) effects of the partner violence on their parenting. Similar results were found by Casanueva, Martin, Runyan, Barth, and Bradley (2008) who examined recency of victimization among a nationally representative sample of mothers. Findings indicated that women who had experienced previous partner violence had higher parenting scores, reflecting positive parenting strategies, than those who were currently involved in an abusive relationship. These findings support the hypothesis that current/ongoing partner violence may adversely affect the parenting role, but that women attempt to compensate once the abuse has ended by

increasing positive parenting strategies such as empathy and nurturing behaviors (Letourneau, Fedick, & Willms, 2007). Levendosky, Huth-Bocks, Shapiro, and Semel (2003) found that mental health problems also affect parenting among partner violence victims, as depressed mothers evidenced poor parenting strategies whereas other mothers appeared to compensate for the violence by becoming more effective parents. These results highlight the importance of considering an ecological model that includes multiple parent (e.g., maternal mental health, abuse history, frequency/chronicity of partner violence) and environmental (level of support, marital satisfaction) factors as contributing to the effects of partner violence on the parenting role (Levendosky & Graham-Bermann, 2001).

Studies also suggest that parents' abuse histories are risk factors for negative parenting behaviors. Specifically, a child sexual abuse history has been linked to difficulty establishing appropriate hierarchical boundaries with children, an overly permissive parenting style, excessive use of harsh discipline tactics, and decreased parental competence and self-efficacy (e.g., DiLillo & Damashek, 2003; Elliott & Carnes, 2001; Fitzgerald, Shipman, Jackson, McMahon, & Hanley, 2005). Similar results have been found for the impact of child physical abuse history on parenting (e.g., Merrill, Hervig, & Milner, 1996; Milner, Robertson, & Rogers, 1990). However, this research is complicated by the fact that child sexual and physical abuse frequently co-occur with other risk factors for poor parenting, making it difficult to determine if the child maltreatment history is the cause of altered childrearing patterns. More recent studies have attempted to examine potential mediators in this relationship. For instance, in a sample of mothers with a child sexual abuse history, Schuetze and Eiden (2005) found that child sexual abuse was no longer associated with parenting perceptions and discipline style when maternal depression and partner violence history were examined, suggesting that the effects of child sexual abuse on parenting are indirect.

Intimate Relationships

Another consequence of crime victimization is the dissolution or disruption of intimate relationships as evidenced by changes in a victim's ability to function in the role of spouse or intimate partner. As cited in Whisman (2006), Whiffen and Oliver (2004) proposed two mechanisms by which child or adult trauma may affect intimate relationships. First, the avoidance and hyperarousal symptoms of PTSD may mediate the relationship between victimization and intimate partner functioning: avoidance symptoms reduce a victim's interest in activities, increase feelings of detachment from others, and restrict affect, whereas hyperarousal symptoms increase anger, irritability, and preoccupation with the trauma. Second, child trauma affects the ability to form secure attachments with others, thereby adversely influencing intimate adult relationships. Other researchers have proposed that child sexual abuse contributes to feelings of betrayal and lack of trust in adults; in later years this betrayal may contribute to anger, distrust, and suspiciousness of intimate relationships (Finkelhor & Browne, 1985). Numerous studies have supported these hypothesized links between child abuse and relationship problems, including marital dissatisfaction and marital disruption or dissolution (Finkelhor, Hotaling, Lewis, & Smith, 1989; Nelson & Wampler, 2000; Whisman, 2006). Further, individuals who have been sexually assaulted are less likely than those who have not experienced sexual assault to be married (Golding, Wilsnack, & Cooper, 2002; Radomsky, 1992) and more likely to be divorced (Finkelhor et al., 1989; Radomsky, 1992). Crenshaw (1978) reported that between 50 and 80% of women who were raped subsequently experienced dissolution of their intimate relationship. Other research has suggested that rape survivors are more likely to have trouble with communication and emotional support in their intimate relationships as compared to their nonassaulted cohorts (Miller, Williams, & Bernstein, 1982).

One area of intimate relationship functioning that has received significant attention, particularly in the sexual assault literature, is that of postassault sexual functioning. Sexual difficulties following rape are very common, including avoidance of sexual activities and reduced sexual satisfaction (Burgess & Holmstrom, 1979; Ellis, Calhoun & Atkeson, 1980; Kilpatrick, Saunders, Veronen, Best, & Von, 1987). Becker, Skinner, Abel, and Cichon (1986) found that 59% of sexual assault victims reported at least one sexual dysfunction, compared to only 17% of nonvictims. In addition, 69% of victims who reported sexual dysfunction viewed their assault as the cause of their problems. Sexual problems among victims of other types of crime have not been adequately studied and are an important area of investigation for future studies.

Occupational Functioning

Another consequence of crime victimization is the ability to obtain and maintain gainful employment. A significant amount of research in this area has been conducted with female partner violence victims. Compared to nonvictims, victims of partner violence report lower productivity; more frequent tardiness; higher rates of absenteeism, job turnover, and unemployment; fewer hours worked in the past year; and a higher likelihood of receiving public assistance (e.g., Reeves & O'Leary-Kelly, 2007; Staggs & Riger, 2005; Tolman & Wang, 2005). Perhaps because of poor productivity, these women were also more likely to miss advancement opportunities, lose their jobs, and earn lower wages. For example, Swanberg and Logan (2005) found that 91% of victims indicated they had resigned from a job or been terminated over the past 2 years as a result of difficulties related to partner violence.

Several explanations have been offered for these findings. First, partner violence is associated with physical injuries that may prevent women from being able to work, either in the immediate aftermath of an assault, or long-term because of a chronic, abuse-related disability. Partner violence also increases the risk for symptoms of psychological distress, perhaps due directly to the abuse or to fear of the perpetrator, which adversely affects the ability to concentrate and negatively impacts work productivity (Swanberg, Macke, & Logan, 2007). Third, women leave a job prematurely because of safety concerns related to themselves and/or others (e.g., coworkers). Finally, many women report that their partners purposely sabotage their abilities to sustain gainful employment (e.g., depriving the victim of sleep; destroying or hiding clothing, work materials, or car keys; refusing to watch children or interfering with child care; inflicting physical injuries; and work-related stalking; Lloyd & Taluc, 1999; Swanberg, Logan, & Macke, 2005; Tolman & Wang, 2005). Research has indicated that between 23 and 54% of employed partner violence victims reported being absent from work, and 50 to 65% reported being tardy because of the abuse and interference tactics of the abusers (Swanberg & Logan, 2005; Tolman & Rosen, 2001).

In contrast to partner violence, other forms of crime victimization have received minimal attention in research on occupational outcomes. However, studies to date suggest that other types of crime victimization negatively impact the victim's ability to perform in the workplace. For example, Resick and colleagues (Resick, Calhoun, Atkeson, & Ellis, 1981) found that rape victims' work adjustment was impaired for up to 8 months following the rape, and Yancey, Gabel-Hughes, Ezell, and Zalkind (1994) found a positive association between victimization and unemployment among a sample of violent trauma victims. Additionally, following the homicide of a family member, survivors' rates of employment decreased by 27% (Mezey, Evans, & Hobdell, 2002). Similarly, in a sample of parents whose child was murdered, over 50% of the parents perceived themselves as nonproductive at their jobs in the 4 months postdeath (Murphy et al., 1999). In a synthesis of several published reports, Kessler (2000) reported that individuals with PTSD had a 150% elevated likelihood of being unemployed compared to those without PTSD; however, the study

participants were not limited to crime victims. It will be important for future studies to examine further the impact of other types of crime victimization on employment patterns and workplace functioning and to examine the mechanisms by which these consequences occur (e.g., mental health difficulties, physical injuries).

Social Functioning

Crime victimization can also cause disruptions in social activities and impaired functioning in social relationships. Multiple studies have found that sexual assault victims experience subsequent impairments in their social and leisure activities (e.g., Ellis, Atkeson, & Calhoun; 1981; Kilpatrick et al., 1987). Specifically, in a meta-analysis of six general population studies, victims of sexual assault were less likely than nonvictims to report at least weekly contact with friends or relatives, and also reported less emotional support from friends and relatives (Golding, Wilsnack, & Cooper, 2002). Although there is general agreement that sexual victimization impacts social functioning, the length of disruption has been inconsistent across studies. For example, Resick and colleagues (1981) reported that social and leisure adjustment were significantly worse for rape victims than for controls 2 months after the assault, but subsequently improved so that no differences were observed by 4 months postassault. In contrast, Nadelson, Notman, Zackson, and Gornick (1982) found that over half of the rape victims in their study continued to report a restricted social life 15 to 30 months after their assault.

Social functioning within the context of partner violence is unique in that batterers seek to maintain dominance and control by keeping the victim dependent and isolated from others (Dobash & Dobash, 1998). Therefore, social isolation is a common phenomenon among women living in abusive situations. Studies generally find that women in violent relationships have an inadequate number of supporters and are often reluctant to ask these supporters for help (e.g., Dunham & Senn, 2000; Levendosky et al. 2004), even though social support and positive social relationships can significantly help a victim cope and reduce the negative impact of the abuse (El-Bassel, Gilbert, Rajah, Foleno, & Frye, 2001). Additionally, inadequate social support often contributes to a victim remaining in an abusive relationship (Barnett, 2001).

In terms of the role of social support among crime victims more broadly, studies indicate that perceptions of lower levels of social support are associated with increased levels of emotional distress following victimization (Green & Diaz, 2007; Green & Pomeroy, 2007; Hanson, Kilpatrick, Falsetti, Resnick, & Weaver, 1995). Yap and Devilly (2004) suggested that social support may initially serve as a buffer to reduce adverse consequences associated with crime victimization. However, repeated victimization and exposure to chronic stressors may alter victims' perceptions of available social support which exacerbates subsequent levels of distress.

To further understand these relationships, several researchers have focused on gender and racial/ethnic differences in social support levels following victimization. Although no gender differences were found in levels of positive social support, women were more likely than men to report negative responses from family and friends following victimization (Andrews, Brewin, & Rose, 2003). The authors proposed that these higher levels of negative social interactions accounted for the women's increased severity of PTSD symptoms. These results were consistent with a previous study where "interpersonal friction," but not positive social support, predicted PTSD symptom severity in female victims of assault (Zoeliner, Foa, & Brigidi, 1999).

To investigate racial/ethnic differences in levels of social support, Lewis and colleagues (2005) examined a national probability household sample of 4,008 women and found that,

although victims of assault were more likely than nonvictims to seek help from family and friends, a person's race/ethnicity was not related to their likelihood of seeking this type of help. Research on social support, crime victimization, and ethnicity is limited, and few studies exist that include adequate numbers of members of ethnic minority groups to allow for comparisons (Alim, Charney, & Mellman, 2006).

In contrast to seeking social support, some individuals withdraw from others after experiencing a crime. These individuals learn to avoid situations, places, and other trauma reminders because this escape/avoidance temporally reduces associated anxiety. Crime victims who continually avoid feared situations are unable to learn new associations between feared stimuli and positive/neutral stimuli; therefore, they may become housebound or unable to leave their homes at night (Kilpatrick & Acierno, 2003), which inadvertently affects social functioning. In a study comparing female victims of various types of assault, the use of social withdrawal as a method of coping with victimization was related to fewer improvements in PTSD symptoms, regardless of type of assault (Gutner, Rizvi, Monson, & Resick, 2006). Increasing social contact and engagement are important targets for early interventions for crime victims (Gutner et al., 2006), and victims who increase or continue positive social interactions following trauma often show better adjustment and more resilience (Bonanno, 2004).

LIFE SATISFACTION AND WELL-BEING

In addition to the effects of victimization on role functioning, researchers postulate a link between crime and the victim's report of life satisfaction and well-being. Studies examining these constructs typically focus on indicants such as fear of crime, concerns for personal safety, happiness, and satisfaction with overall quality of life (e.g., Demaris & Kaukinen, 2005; Michalos & Zumbo, 2000; Norris & Kaniasty, 1994; Zlotnick, Johnson, & Kohn, 2006). In general, a history of crime victimization does not appear to have a profound effect on these variables. For example, in their study examining the impact of crime-related issues on happiness and satisfaction with quality of life in British Columbia, Michalos and Zumbo (2000) concluded that "crime-related issues have relatively little impact on people's satisfaction with the quality of their lives, with life satisfaction or happiness here" (p. 290). Although victimization was associated with some concerns about neighborhood crime and problems, a tendency to engage in more defensive behaviors, less satisfaction with their own and their family's safety in neighborhoods, as well as lower levels of satisfaction with quality of life, the overall relationships (i.e., proportion of variance accounted for) were quite low, leading the authors to conclude that victimization did not have a significant overall impact on these factors. However, it is important to highlight that few respondents were victims of violent crimes (38%); the vast majority were non-violent, property crimes (90%), which likely contributes to these findings.

Using data from the National Survey of Families and Households, Zlotnick et al. (2006) examined whether women reporting partner violence at an initial interview differed from those who did not report these experiences on measures of global life satisfaction, functional impairment, social support, and past 30-day alcohol use obtained in a 5-year follow-up interview. Results indicated that partner violence reported at the initial interview was related to a greater degree of functional impairment and less life satisfaction 5 years later. Consistent with these findings, Demaris and Kaukinen (2005) found that individuals who experienced a serious injury and those who had been stalked were more likely to be "very concerned" about their personal safety and to "always" carry a protective device, which may affect life satisfaction and well-being. Physical and sexual assault severity were also related to a greater likelihood of always carrying a protective device, but not to being very concerned about personal safety. However, once timing of first victimization and the

victim–offender relationship were included in analyses, only severity of physical assault was related to an increased likelihood of carrying something for personal protection.

Some studies suggest that there may be racial/ethnic differences in life satisfaction and well-being indices following crime victimization. For example, Norris (1992) found that African American men were particularly vulnerable to the negative effects of trauma. Several possible explanations for these findings were provided, including the ideas that higher social status may buffer the adverse effects of a traumatic event, whereas hostility and prejudice experienced by minorities may exacerbate an event's negative impact. Additionally, symptoms of distress following crime victimization may be expressed differently across varied cultural/ethnic groups. Therefore, it is important for clinicians and researchers to consider cultural factors when assessing victimization and its impact (Carlson & Dutton, 2003).

In sum, based on available literature, victimization may increase safety concerns and predict less overall life satisfaction, but these associations are not robust. This suggests that other factors associated with victimization, rather than the incident per se, may place individuals at risk for negative outcomes. For example, higher crime-related fears are reported among specific populations such as women, younger respondents, minorities, and residents in inner cities (Demaris & Kaukinen, 2005; Hanson et al., 1995; Hanson, Smith, Kilpatrick, & Freedy, 2000), suggesting that demographic factors are important to consider. In addition, other moderating and mediating variables, such as increased psychological and physical problems, need to be examined when exploring the impact of crime victimization on overall life satisfaction and well-being.

SOCIAL–MATERIAL CONDITIONS

Crime victimization is associated with myriad physical and psychological health problems, resulting in widespread treatment needs and substantial costs to both the victim and society. However, several limitations preclude the ability to generate accurate estimates regarding these costs. First, there are significant methodological differences across studies such as variability in the way costs are measured, the types of crimes or traumas being assessed, the time since the victimization incident, and the type of injury sustained (i.e., physical injuries versus mental health and psychological consequences). Relatedly, authors rely on different indices and definitions to derive cost estimates, making comparisons difficult. Second, if costs are based on reported incidents, these values will be underestimates because of the low reporting rates of such crimes as sexual assault and domestic violence (e.g., Corso, Mercy, Simon, Finkelstein, & Miller, 2007; Robinson & Keithley, 2000), which are nonetheless prevalent and costly. A third issue affecting the utility of available figures is the timeliness of publications. Due to the lengthy review process and publication delays, cost estimates are typically dated by the time they are finally in print. Thus, published data must be extrapolated to arrive at cost estimates for a given calendar year. Nonetheless, based on the available data, it is apparent that costs associated with crime victimization are extremely high.

In an effort to address these methodological limitations, Corso and colleagues (2007) examined several nationally representative datasets to determine the incidence of fatal and nonfatal violence-related injuries in 2001 and derive estimates of the costs associated with these experiences. According to their analyses, approximately \$4 billion was spent on medical treatment for violence-related injuries. Average medical costs per case were \$4,906 for a fatal assault, \$24,353 for a nonfatal assault requiring hospitalization, and \$1,002 for a nonfatal assault treated in an outpatient setting (i.e., emergency department, office-based, or hospital outpatient visit). In addition, their data indicated that nearly 17,000 acts of

interpersonal violence resulted in homicide, at a cost of \$22.1 billion in medical costs and lost productivity. Another important contribution of this study was the finding that individuals between the ages of 15 and 44 (who comprise 44% of the U.S. population) accounted for almost 75% of the injuries and 83% of the total costs due to interpersonal violence, indicating that the younger segment of our population remains an important group for prevention and intervention efforts. Gender also appears to play a role in violence-related medical and service utilization costs, with data estimating that female partner violence victims averaged more than twice the costs of men (Arias & Corso, 2005).

Aside from direct medical expenses, employers face several additional costs due to crime victimization, including the consequences of lowered productivity as described above; indirect medical costs, such as increased health insurance premiums and sick leave expenditures; administrative costs (e.g., leave or transfer costs); separation and replacement costs (i.e., hiring and training costs); legal liability (i.e., agencies are responsible for protecting their employees); increases in security costs; workers' compensation; lost business; damaged reputation; and damaged property (e.g., Bell, McLaughlin, & Sequeira, 2002; Chenier, 1998; Johnson & Indvik, 1999; Swanberg et al., 2005). Consequences related to partner violence and other forms of violence against women are particularly costly. It has been estimated that abused women lose a total of nearly 8 million days of paid work annually, costing almost \$728 million in lost productivity. In 1995, intimate partner violence resulted in estimated total costs (including expenditures for medical and mental health care; lost productivity from injury and premature death) of \$5.8 billion (or \$8.3 billion in 2003 U.S. dollars; Max, Rice, Finkelstein, Bardwell, & Ledbetter, 2004).

Another important social-material condition involves health care utilization among victims, although findings specific to interpersonal crime are somewhat mixed. (For a more thorough review of this topic, refer to McCart & Smith, this issue, pp. XXX-XXX). Some data suggest that, among victims of violent crime, those with depression, PTSD, recent victimization, and involvement with the crime justice system may be more likely to seek treatment (e.g., Hanson et al., 2001; Hidalgo & Davidson, 2000; Miller, Cohen, & Rossman, 1993; Norris, Kaniasty, & Scheer, 1990; Robinson & Keithley, 2000). Gender may also play a role, with some studies suggesting that female victims are more likely than their male counterparts to seek services (e.g., Arias & Corso, 2005; New & Berliner, 2000). However, Kimerling and Calhoun (1994) found that, although women who experienced a sexual assault were significantly more likely than nonvictims to utilize medical services, there were no differences found between victims and nonvictims in use of mental health services. Almost all of the sexual assault victims sought medical services in the year after being assaulted (72.6%), but only 19% sought mental health treatment. These findings are consistent with other published studies, which find that victims seek medical services, but they do not appear any more likely to seek mental health services (Demaris & Kaukinen, 2007). As suggested by Kimerling and Calhoun, perhaps this is due to the stigmatization of mental health services and the higher social acceptance of medical care.

Researchers examining differences in healthcare utilization have found that members of certain ethnic minority groups may be less likely to seek formal help following victimization. For example, among a national sample of women, Lewis and colleagues (2005) found that African Americans and Hispanics were less likely than Caucasians to engage in formal help seeking behavior. In a study of mental health service utilization by crime victims, New and Berliner (2000) found greater rates of service utilization among Caucasians and Native Americans than among adult victims of other racial/ethnic backgrounds.

FUTURE DIRECTIONS

In general, studies indicate that crime victimization is associated with changes and impairments in functioning that adversely impact quality of life. These types of complex relationships argue for the importance of developing sophisticated models that examine the mechanisms by which victimization affects these separate, yet overlapping quality of life indices. This type of sophisticated modeling can be applied to a host of complex relationships that would increase our understanding of the developmental trajectory of adverse crime-related consequences and help to inform policy and practice.

Importantly, further research on the functional impact of crime victimization is necessary to guide efforts in the development of education and training programs for victims. For example, educational programs aimed at places of employment can be helpful to reduce onsite violence and may be particularly useful for victims of partner violence and their coworkers to address potential safety risks. Consistent with Conservation of Resources Stress Theory (Hobfoll, 1989; Hobfoll, Dunahoo, & Monnier, 1995), interventions that address or prevent depletion of resources following crime victimization should reduce the severity of posttrauma symptoms. Some examples include programs that enhance provision of tangible (e.g., financial compensation) resources to victims as soon as possible after a crime occurs; cognitive behavioral therapy interventions to correct inaccurate or distorted perceptions of available social supports, which can buffer the effects of crime; social skills training programs that enhance an individual's abilities to receive needed support (i.e., social skills training), and community level programs that increase available resources for crime victims (e.g., after school programs for high crime communities; employee trainee programs for victims of partner violence).

Another important area for future research involves improving methodology for estimating costs related to crime victimization. As a step in this direction, Corso et al. (2007) discussed four strategies to improve cost estimates: (a) improve data on incidence of violence, particularly for partner violence, sexual violence and child maltreatment (i.e., since these crimes are less likely to be reported, they are more difficult to determine cost estimates); (b) better identification and documentation of crime-related injuries in emergency departments and medical care settings; (c) more longitudinal research to examine links between crime exposure and long-term physical health and social consequences; and (d) consideration of costs associated with violence that does not result in physical injuries (i.e., changes/impairments in role functioning; quality of life indices).

Finally, there is a gap in research on gender and ethnic/cultural issues related to crime victimization. It appears likely that the functional impact of crime victimization may differ across genders and cultural/ethnic groups. Specifically, the impact of crime on relationships and role functioning has been relatively unstudied among men. Therefore, it will be important for future research to include male and female victims to further understand potential gender differences in response to crime victimization. Relatedly, few studies examine whether there are different costs associated with care for different ethnic minority groups or as a function of gender.

In sum, findings from the well-established literature on general trauma and the emerging research on crime victimization indicate significant functional impact on the quality of life for victims. However, more research is necessary to understand the mechanisms of these relationships and differences among types of crime victimization, gender, and racial/ethnic groups. Further knowledge will help in developing and refining policies and prevention/intervention efforts to improve quality of life for crime victims.

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