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A Review of Recent Literature on Trauma among Individuals Living with HIV

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Abstract

Persons living with HIV (PLWH) report disproportionately high levels of exposure to traumatic events in childhood and adulthood. Traumatic experiences are associated with negative health and behavioral outcomes. Current research in this area seeks to further explicate the myriad health effects of trauma on PLWH and the pathways through which trauma operates. In this paper, we review articles published in English between January 2014 and June 2015 that examine traumatic experiences among PLWH, including intimate partner violence (IPV), domestic abuse, child abuse, and other forms of violence. A selection of studies examining trauma among PLWH and its associations with mental health, antiretroviral medication adherence, clinical outcomes, HIV disclosure, and sexual risk behaviors were included. Studies describing trauma coping strategies and interventions were also included. We conclude with recommendations for care of trauma-exposed PLWH and directions for future research.

Keywords

HIV; trauma; mental health; adherence; clinical outcomes; risk behaviors; trauma-informed care

Introduction

Individuals exposed to various types of past and current trauma, such as childhood sexual and physical abuse, intimate partner violence, physical assault, or psychological abuse, often experience negative physical, mental, behavioral, and social consequences. There is a growing body of evidence that persons living with HIV (PLWH) are exposed to high levels of trauma during childhood and adulthood, often at rates greater than those experienced by the general population [1-7]. For example, high rates of intimate partner violence (IPV) among PLWH across geographical regions have been well established, particularly among women and men who have sex with men (MSM) [7, 10–15]. Recent studies continue to find high levels of trauma among PLWH [1–9]. Brezing and colleagues found rates of violent trauma ranging from 10 to 90 % among PLWH. Although the range was wide, most of the reviewed studies found high levels of trauma that were typically much greater than those found in the general population. A study in Togo, West Africa, found high rates of IPV among HIV-positive women receiving care at a university hospital. Lifetime physical violence was reported by 63.1 % of women, while sexual violence was reported by 69.7 %. The prevalence of violence victimization was significantly higher for HIV-positive women when compared to HIV-negative women [4].

Trauma, often operating through complex pathways, is associated with poorer outcomes among PLWH [2, 16, 17]. Exposure to trauma is associated with mental health conditions such as depression, posttraumatic stress disorder (PTSD), and anxiety, which PLWH experience at disproportionately high rates [10, 14, 18]. In turn, depression, anxiety, and PTSD are linked to poorer adherence, increased viral load, and decreased CD4 counts [12, 16–20]. Fear or experience of trauma, such as IPV, can also act directly as a barrier to disclosure of HIV status, accessing HIV care, and adherence to medication [10, 12]. Finally, there is some evidence that exposure to trauma may also negatively affect immune function, leading to faster HIV disease progression [12, 16].

In order for PLWH who have experienced trauma to fully benefit from the dramatic advancements in HIV treatment, current research must seek to better understand the associations between trauma and negative health and behavioral outcomes and use this knowledge to guide the development of effective interventions. In this paper, we review studies published in English between January 2014 and June 2015 that examine trauma among PLWH. Because many different types of traumas have been associated with negative outcomes in PLWH, we used broad search terms to identify recently published studies on this topic in PubMed, CINAHL, Web of Science, and PsycINFO. A selection of observational, interventional, and review studies related to associations between trauma and mental health, antiretroviral medication adherence, clinical outcomes, HIV disclosure, sexual risk behaviors, coping strategies, and interventions to minimize the negative effects of trauma were included in this review. Studies with a major focus on one or more of these

areas that also had a strong study design were included in this review. The types of trauma discussed in this paper are described in Table 1. We conclude with recommendations for future research and implications for care of HIV-positive individuals who have experienced trauma.

Trauma and mental health

Among PLWH, childhood maltreatment and IPV have been consistently related to higher levels of psychiatric symptoms in later life including depression, anxiety, and PTSD [10, 21]. Psychiatric symptoms in turn have been consistently related to poor HIV-related health outcomes and thus may act as mediators in the relationship of trauma and HIV outcomes [18].

Childhood Trauma

Recent literature continues to demonstrate a relationship between childhood trauma and psychiatric symptomology [22, 23]. Recent studies further elucidate this relationship by examining moderators and mediators of the association of trauma and psychiatric symptoms in PLWH. For example, Allen and colleagues studied the association of childhood trauma with depression and the adult stressors that potentially moderate this relationship in HIV-positive MSM with a history of childhood maltreatment. They found that childhood adversity, including childhood sexual abuse, was a significant predictor of depression as an adult and experiencing racial discrimination was a mediating factor in this relationship. These findings indicated that men with histories of childhood adversity were more likely to experience discrimination as an adult, putting them at greater risk for depression in adulthood and providing a potential pathway for the effects of childhood maltreatment and depression in later life. In addition, both chronic stress and discrimination moderated the relationship between current perceived social support and depressive symptoms, indicating that for those with high levels of experienced discrimination or chronic stress, greater perceived social support was protective with respect to depressive symptoms. The authors concluded that although the study results generally support prior findings regarding the association of childhood maltreatment and depression in adulthood, “for the men in this study, this relationship was largely affected by adult experiences” [22].

Two recent studies examined the relationship of resilience with trauma and depression. Spies and colleagues studied resilience and depression among 95 HIV-positive women in South Africa who had experienced childhood trauma. Lower levels of resilience, childhood trauma, and greater posttraumatic stress symptoms independently predicted depressive symptoms among participants. The authors suggested that resilience might act as a buffer against the development of depression. Posttraumatic stress symptoms partially mediated the relationship of resilience and depressive symptoms indicating that greater resilience may impede the development of traumatic stress symptoms, which in turn influence the development of depression [21]. Dale and colleagues also examined the relationship of resilience and depression in HIV-positive women in the USA and found that higher resilience significantly predicted lower depressive symptoms and that childhood sexual abuse was related to higher depressive symptoms only for those with lower levels of

resilience [24]. These studies have important implications regarding the potential to mitigate depressive symptoms through fostering resilience among HIV-positive women.

Lifetime Trauma including adult trauma/IPV

Similar to other recent studies, Brandt and colleagues studied mediators related to trauma and mental health. However, this study focused on lifetime trauma in HIV-positive men and women and examined how trauma is related to avoidant coping and posttraumatic stress. Consistent with previous research, avoidant coping was significantly associated with greater posttraumatic stress. Sensitivity to anxiety was found to mediate the relationship between avoidant coping and posttraumatic stress suggesting that avoidant coping affects posttraumatic symptoms at least in part through anxiety sensitivity [25].

Dissociative symptoms, including detachment and emotional numbing, commonly occur in reaction to traumatic stress [26]. Yiaslas et al. explored the understudied effect of sexual violence revictimization in the etiological pathway of dissociative symptoms, PTSD, and HIV symptom severity utilizing data from 167 HIV-positive men. Sexual revictimization mediated the relationship between childhood sexual abuse and peritraumatic dissociation, as well as the relationship between adult sexual abuse and peritraumatic dissociation, suggesting that sexual victimization in both childhood and adulthood is more strongly associated with peritraumatic dissociation than being victimized solely as a child or as an adult [27].

Yiaslas et al. also tested a revision to Schnurr and Green's integrative model of trauma exposure, PTSD, and health, which posits that PTSD mediates the relationship between trauma exposure and poor health status; peritraumatic dissociation is considered a symptom of PTSD in this model [28]. Yiaslas et al. found support for their hypothesis that peritraumatic dissociation actually acts as a mediator of the sexual revictimization/PTSD relationship. The authors concluded their findings suggest peritraumatic dissociation is an important risk factor for developing PTSD. Additionally, current posttraumatic stress symptom severity was found to partially mediate the relationship between sexual revictimization and HIV symptom severity.

Several other recent studies examine experiences of violence, direct and witnessed, among individuals living with HIV. Phillips and colleagues studied lifetime experience of violence among young (age 13–24) minority MSM in the USA. Fear of violence and emotional or physical abuse by a caregiver were associated with depressive symptoms; witnessing violence committed with a deadly weapon was associated with alcohol and drug use [29]. In a qualitative study of Latino HIV-positive MSM living on the US-Mexico border, Beltran-Perez examined factors associated with depressive symptoms and other mental health concerns and found that border violence was reported to negatively influence mental health [30].

IPV and other forms of gender violence have been consistently related to psychiatric symptoms among PLWH [10, 31]. Recent literature provides additional evidence of this relationship. For example, Ceccon et al. examined gender violence, including IPV, in a sample of Brazilian women living with HIV and multivariable analysis indicated that women

who had experienced gender violence were 5.7 times more likely to report suicidal ideation [32]. In a review of IPV and IPV-related outcomes, Siemieniuk and colleagues listed a greater understanding of the spectrum and intensity of IPV and its relationship to HIV outcomes as a future research need [10]. Hansrod and colleagues provided research on the topic, as they studied IPV severity among HIV-positive women in South Africa. Study results indicated that the rate and severity of IPV did not significantly predict PTSD in HIV-positive women when childhood trauma and life events were controlled for [33].

In another recent study of victimization of HIV-positive women in Uganda, Tsai et al. prospectively examined the relationship between forced sex victimization and depression. Although the association of victimization and depression is well elucidated, the temporal aspect of this association has not been well established. Study results indicated that victimization predicted greater depression symptom severity and lower mental health-related quality of life as well as heavy drinking [31]. Although substance abuse has been consistently associated with trauma and IPV [2, 21], this study was one of the few recent studies identified to explore this relationship. Finally, a recent study explored the potential bidirectional relationship between PTSD and HIV diagnoses. Rzeszutek et al. investigated the relationship between HIV infection duration and PTSD symptoms in a sample of HIV-positive Polish men and women. Study findings suggested that longer HIV infection duration may intensify PTSD symptoms. However, social support appeared to moderate this relationship, as a positive relationship between HIV infection duration and the level of trauma symptoms was observed only in the group of individuals with low perceived social support, suggesting that although HIV infection duration may intensify trauma symptoms, perceived availability of social support may be a buffer against HIV-related trauma symptoms [34].

Trauma, adherence and clinical outcomes

Trauma has been found to be associated with lower rates of antiretroviral therapy (ART) adherence, increased viral load, and virologic failure among PLWH [14, 17, 35–39]. Recent research has sought to further explicate these pathways, to inform intervention approaches to improve clinical outcomes.

Childhood Trauma

Wilson et al. examined if gender moderated pathways within a stress and coping model of HIV medication adherence among a sample of HIV-positive adults with a history of childhood sexual abuse. The relationship between psychological distress and ART adherence was mediated by drug use for women, but not for men. Additionally, the relationship between drug use and viral load was mediated by ART adherence for women, whereas drug use did not predict ART adherence in men [40].

Lifetime Trauma and Syndemics

Two recent studies examined immune system effects of trauma among HIV-positive women. A study exploring if IPV is a risk factor for impaired cellular immunity, and thus HIV disease progression, found exposure to emotional abuse was a risk factor for faster decline in

CD4 and CD8 T cell counts among 103 ART-naïve HIV-positive young women, accelerating the expected rate of CD4 decline by 50–100 %. Exposure to physical or sexual IPV and/or non-partner rape did not have significant effects on the rate of T cell decline. The authors conclude the findings highlight the importance of including emotional abuse, a relatively understudied form of IPV, in future research into the physiological impact of IPV on women's health [41]. Another study exploring immune function effects of trauma among

HIV-positive women found that among a sample of 710 HIV-positive women in Rwanda, those with PTSD were almost twice as likely to report shingles in the past 6 months, providing evidence of PTSD-related immune suppression; depressive symptoms did not have a significant effect in adjusted models [42].

Prior research has documented the clustering of substance abuse, violence, HIV/AIDS (SAVA syndemic), and other related psychosocial problems among marginalized groups [20, 43–45]. However, limited research has utilized syndemic models to understand viral load suppression among PLWH. Sullivan et al. examined viral load suppression among 563 HIV-positive women of color in the USA as an outcome in syndemic framework analyses. Consistent with previous research, lifetime experiences of IPV were associated with lower odds of viral load suppression. Additionally, a SAVA score, created by adding dichotomous measures of five associated psychosocial factors (IPV, substance abuse, binge drinking, poor mental health, and sexual risk taking) was associated with reduced viral suppression suggesting a syndemic framework for understanding viral suppression among this population was supported [46].

Dale et al. cited above explored the effects of resilience on ART adherence and HIV viral load among 138 HIV-positive women in the Chicago area. Increases in resilience, as measured by the Conner-Davidson Resilience Scale [17], were associated with increased odds of 95 % ART adherence and decreased odds of having a detectable viral load. Subsequent interaction analyses indicated the relationship between resilience and ART adherence was only present for women with a history of sexual abuse or multiple types of abuse [47].

Hatcher et al. qualitatively explored bidirectional links between IPV and HIV among pregnant women in South Africa, utilizing a socio-ecological conceptual framework that conceptualized

IPV as a potential structural driver of HIV-related health. Interviews and focus groups were conducted with a range of stakeholders, including pregnant women, pregnant women experiencing IPV, health workers, and others. IPV was found to lead to non-adherence to prevention of mother-to-child transmission (PMTCT) services and poor mental health as well as secondary HIV risk due to a lack of relationship control [48].

Trauma and sexual risk behaviors

Three recent studies, two in the USA and one in Rwanda, explore how experiences of trauma and violence are associated with sexual risk among individuals living with HIV. Lyon et al. conducted a study of HIV-positive urban youth in the USA. When mode of HIV

transmission was controlled for (perinatally vs. behaviorally infected), having ever bartered sex was significantly associated with violence victimization [6].

Experiences of violence in the community may be central to understanding sexual risk among individuals living with HIV. A study among 173 HIV-positive African-American adults found significant associations between experiences of sexual assault, recent domestic violence or experience of violent crime, and sexual risk after controlling for demographics and other psychosocial factors. Community violence, defined as lifetime experience of violent crime, had the strongest effect on sexual risk behaviors, independent of domestic violence, sexual victimization, drug use, and negative affect (e.g., depression). While men were more likely to report experiencing community violence, only women experienced an increase in sexual risk behaviors associated with community violence exposure, providing evidence of a moderating effect of gender [8]. This study expands upon the limited science associating experiences of violence in the community among individuals living with HIV and sexual risk.

A prospective observational cohort study of women in Rwanda who were over 15 years old during the 1994 genocide, living with (n=710) and without HIV (n=226), found most HIV-positive women experienced rape during the Rwandan conflict (genocidal rape, 77%) and at other times (86%). All women who experienced genocidal rape were significantly more likely to engage in sexual activity in the last 6 months, but women living with HIV were significantly more likely to use condom at least 50 % of the time. Women who experienced genocidal rape were more likely to engage in transactional sex and were more likely to have had a non-HIV STI [49].

Trauma and HIV disclosure

Disclosure of HIV status to a partner can result in conflict and IPV within the partnership, especially for women who are disclosing their status. Most research on this issue has been conducted in sub-Saharan Africa with HIV-positive women, although one recent study looked at disclosure-related IPV among MSM in the USA.

Okareh et al. found that among HIV-positive women in Nigeria, 37% of participants reported that disclosure had resulted in partner conflict, and 20% of women reported ongoing conflict or abuse with partners as a result of disclosure [50]. Another cross-sectional survey in Nigeria found HIV-positive women experienced partner violence at higher rates after disclosure than before disclosure (55.8 and 38.3%, respectively) [5]. HIV-positive women in Zimbabwe experienced higher rates of IPV after disclosure of HIV status than HIV-negative women but both experienced IPV, indicating that disclosure-related IPV is a concern for women regardless of HIV result [51].

Disclosure of HIV status can trigger IPV or the experience of IPV may prevent women from disclosing their HIV status to a partner. A qualitative study in Swaziland supports the premise that one of the primary pathways through which women experience IPV after HIV diagnosis is an acute trigger, such as disclosing serostatus to a partner or HIV diagnosis of a child [52]. A recent systematic review also found that relationship factors influence a

woman's decision to disclose, and women were less likely to disclose their HIV status to their partners if they had prior experiences of violence or if they were financially dependent on the partner [53]. These findings are consistent with prior research [12].

Limited research has been conducted on disclosure-related IPV with MSM. In a recent study, 6.2% of men reported experiencing partner violence after disclosing HIV-positive status to a partner. Increases in substance use and depressive symptoms were associated with increased odds of experiencing disclosure-related IPV. This study reveals an important relationship between mental health, substance use, and disclosure-related IPV among MSM [54].

Coping with trauma and trauma interventions

PLWH can employ positive (i.e., problem-focused coping, social support) and/or negative (i.e., substance abuse, avoidant coping) strategies for coping with trauma [25, 55]. Two recent studies examined spiritual coping, which can be used positively or negatively, as a strategy for dealing with trauma. Both studies conducted secondary analyses on data from a 10-year longitudinal study that examined psychosocial and spiritual factors related to health among 177 PLWH in South Florida, USA. Kremer and Ironson examined the ways in which PLWH used spirituality to cope with traumatic events and HIV-related stress. Most individuals in the study identified as spiritual (92%), defined as a connection to a higher presence. Based on the results of qualitative analyses, 65% used spiritual coping positively to deal with trauma while 7% used it negatively and 28% had no notable use. Women, heterosexuals, and African-Americans reported greater benefit from spiritual coping [56]. A separate study examined the association between compassionate self-love and spiritual coping with trauma. For both men and women, compassionate self-love was associated with greater spiritual coping [57].

Although there is a tremendous need for behavioral interventions for PLWH who have experienced trauma, few empirically supported interventions exist that are specific to this population [58]. For example, a recent review identified only two empirically based interventions for PTSD in HIV-positive adults, both of which utilized cognitive behavioral strategies. The dearth of available evidenced-based interventions for addressing trauma found in this review was consistent with three prior reviews conducted within the last 10 years. Based on the findings from the two reviewed studies and effective interventions for PTSD in the general population, the authors proposed several potential approaches for future PTSD interventions for

PLWH: multidimensional cognitive behavioral therapy (CBT) approaches, prolonged exposure treatment, CBT for substance abuse, cognitive processing therapy, written emotional disclosure, and cognitive behavioral stress management [59].

One recent US-based study examined the trauma characteristics of participants who had the greatest improvements in psychological stress as the result of an 11-session trauma intervention for HIV-positive women (n=78) with a history of childhood sexual abuse [60]. The psychoeducational intervention, which addressed linkages between historic sexual

trauma and current sexual risk behaviors and coping and emotional problem solving, was found to be effective overall in reducing PTSD symptoms in a prior study [17]. In the recent study, the intervention was determined to be most effective for women who had a high overall trauma burden [60]. This study makes an important contribution to the literature because it explores an important unanswered question in the field: “Who benefits most from trauma interventions?” The findings suggest that interventions that are tailored to each participant's unique trauma needs are needed. In another recent study, Machtinger and colleagues evaluated the impact of an expressive therapy disclosure group intervention on the lives of HIV-positive women (n=8) in San Francisco. The intervention involved a series of intensive workshops, writing exercises, and a theatrical performance. In addition to overall positive reviews, key themes about the impact of the intervention emerged: sisterhood, catharsis, self-acceptance, safer and healthier relationships, and gaining a voice. As a result of their experience in the intervention, half of the participants left or avoided unsafe or unhealthy relationships [61].

In their review of trauma and HIV, Brezing and colleagues recommend that all HIV providers adopt a trauma-informed approach to care. Based on principles set forth by the Substance Abuse and Mental Health Services Administration's National Center for Trauma-Informed Care, the authors made recommendations for trauma-informed care for PLWH including (1) a trauma-sensitive practice environment, (2) identification of trauma and its mediators, (3) education to patients about the relationship between trauma and its negative influence on behavior and health, and (4) provision of appropriate resources and referrals to more specialized treatment when needed [2]. The White House Working Group on the Intersection of HIV/AIDS,

Violence Against Women and Girls and Gender-Related Health Disparities also recently recommended the development, implementation, and evaluation of trauma-informed care approaches for HIV-positive women and girls [62].

Conclusion

Given the high rates of PLWH who have experienced traumatic events, addressing trauma among those presenting for mental health, medical care, and other related services is critical.

As reviewed in this paper, trauma is associated with poorer mental health, substance abuse, ART adherence, and immunologic outcomes. Furthermore, trauma is related to lower rates of HIV disclosure and increases in risk behaviors. As such, trauma-informed care should be part of the standard of care for PLWH worldwide. Practical guidance on providing trauma-informed primary care is provided in an article by Machtinger et al., which describes an approach to designing clinic environments that support healing and avoid trauma-related triggers. All HIV care clinic staff and providers should receive training on the effects of trauma, trauma-informed practices for working with patients and each other, and available trauma-specific services. Routine and universal screening for trauma should be conducted, and supportive and appropriate responses to disclosure of trauma provided, potentially including safety planning, referrals for community resources, and/or therapy [63]. Underlying this model of care is an organizational foundation that embraces trauma-

informed values of safety, collaboration, trustworthiness, empowerment, and respect for patient choice and includes a clinic champion [63, 64]. Such care practices can be beneficial for all patients, not just those who have experienced traumatic events. Furthermore, additional research is needed to determine strategies that optimize the feasibility of adoption of trauma-informed care practices on a large scale in both high- and low-resource settings.

Future research on this topic should focus on several key areas. Studies to better understand the role that trauma plays in the behavior and outcomes of young people with HIV, including those who are perinatally infected or identify as MSM or transgender, are essential. In addition, common instruments for screening for and measuring potentially traumatic events need to be further developed and disseminated. Biological and social science research is needed to help us better understand which potentially traumatic events have the greatest impact on behavioral and immune functioning. Further, future research should compare the effectiveness of trauma interventions tailored to address the unique aspects of individuals' trauma experiences such as the specific type(s) of trauma experiences and related sequelae (e.g., PTSD, depression) versus those that are not tailored. For group-based interventions, additional research should be conducted to determine if effectiveness varies for gender- and/or sexuality-specific groups compared to mixed groups. Several recent studies examined factors that mediate and moderate the relationship between trauma and health and behavioral outcomes, such as resiliency.

Interventions designed to increase resiliency may be beneficial for PLWH who have experienced trauma. However, additional research is needed to determine the most important components of resiliency on which to intervene and the strategies that may be most effective in building resiliency. Research on other factors that mediate and moderate the relationship between trauma and health outcomes should also be expanded, as it will improve our understanding of these relationships and provide additional information about opportunities for intervention.

Finally, longitudinal studies of promising interventions to address trauma, such as cognitive behavioral therapy, should be conducted. Interventions that have proven to be successful in addressing trauma in the general population should be adapted and tested with PLWH. Additionally, given that most PLWH are living in low-resource settings, and the interventions presented in this review were conducted in the USA, it is imperative that culturally relevant interventions be adapted or developed within low-resource contexts. Research designed to determine who can appropriately deliver trauma interventions is also needed. For example, if lay providers are found to be as effective in delivering trauma interventions as professionals, this could vastly extend the reach of such interventions in low-resource settings. Given recent findings related to the importance of resilience in buffering the negative effects of trauma, interventions that are designed to bolster resiliency should be pursued. Improved understanding of the complex relationships between trauma and health will enhance our ability to provide effective, compassionate, and comprehensive care for PLWH.

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Table 1
Types of trauma discussed in this paper

Type	Includes
Intimate partner violence, Partner abuse	Physical abuse, sexual abuse, emotional/psychological abuse, neglect, isolation, gender-based violence, intimidation, and/or financial abuse by an intimate partner
Child abuse	Includes physical abuse, sexual abuse, emotional/psychological abuse, neglect, child maltreatment, isolation, and/or intimidation by a parent or caregiver
Violence	Physical assault, sexual assault, witnessing violence, community violence
Syndemics	Clustering of associated synergistic epidemics (i.e, trauma and HIV; substance abuse, violence and AIDS [SAVA])