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Tailoring Cognitive Behavioral Therapy for Trauma-Exposed Persons Living With HIV

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Abstract

This Treatment Development Report describes the need for evidence-based psychosocial trauma-focused treatment for people living with comorbid posttraumatic stress disorder (PTSD) and HIV. Individuals with HIV have higher rates of exposure to traumatic events and PTSD than the general public, and they also experience additional consequences of PTSD on the management of their chronic disease (e.g., established link between PTSD symptoms and lack of adherence to antiretroviral therapy [ART]). We used the empirically-supported ADAPT-ITT approach to consider the initial steps in adapting evidence-based Cognitive Processing Therapy (CPT) for individuals with PTSD and HIV. This paper reviews a case example that involved various clinical issues that may arise when providing trauma-focused treatment for people living with HIV including HIV-stigma, disease management, and the need for making multicultural adaptations to psychotherapy. This case example illustrates how trauma-focused treatment may benefit from enhancement to address additional barriers that may arise over the course of PTSD treatment in this population. Feasibility of engaging and delivering a “full dose” of evidence-based PTSD treatment among individuals living with HIV is discussed. While evidence-based treatments can reduce PTSD symptom severity, issues related to chronic disease coping and HIV-related stigma management could be integrated to augment the efficacy of treatment for individuals with HIV. Adaptive intervention research targeting PTSD in persons living with HIV warrants further attention, especially given the association between PTSD and adherence to ART.

Keywords

PTSD; Adherence; Mental Health Services Engagement; PLWH; Trauma Treatment

Adapting Evidence-Based Psychosocial Treatment for Trauma-Exposed Persons Living With HIV

It is estimated there were 1,085,100 million persons living with HIV (PLWH) in the United States during 2010–2014 (CDC, 2015). Antiretroviral therapy (ART) for HIV involves the use of daily medications to suppress the HIV virus and the World Health Organization recommends ART for all PLWH (U.S. Department of Health and Human Services, 2018). ART involves an HIV regimen of three or more antiretroviral drugs to be taken daily. An individual's HIV regimen will vary based on individual factors, but typically includes drugs from at least two HIV drug classes. Increasing ART adherence for HIV is an imperative public health priority, because ART adherence significantly reduces risk that HIV multiplies, resistance to HIV medication develops, and HIV transmission (Cohen, et al., 2011). In recent years, 51% of PLWH in the United States did not adhere to ART (CDC, 2015). There are many risk factors associated with poor ART adherence, such as substance use disorders, exposure to past traumatic events, posttraumatic stress disorder (PTSD), and HIV-related stigma (Brezing, Ferrara, & Frudenreich, 2015; Helms, et al., 2016; Langebeek, et al., 2014; Pence, 2009). While many behavioral interventions tailored for PLWH target substance use treatment, fewer target PTSD and HIV-related stigma even though many substance abuse problems in this vulnerable population may be rooted in untreated trauma exposure (Durvasula & Miller, 2014; Berenz & Coffey 2012). Thus, treatments that address PTSD and HIV-related stigma are urgently needed for PLWH. The goal of the current paper is to review the literature and provide a case example that supports enhancing evidence-based trauma-focused treatment for PLWH.

Trauma Exposure, PTSD, and HIV

Potentially traumatic events are defined as experiencing or witnessing an event that resulted in a person fearing that they or a close loved one would die or be seriously injured, and most commonly occur in the context of interpersonal violence (e.g., child abuse, assault, witnessing community violence; APA, 2013). Based on results from a meta-analysis, it is estimated that 61% of women living with HIV experience lifetime sexual abuse and 72% report lifetime physical abuse (Machtinger, Wilson, Haberer, & Weiss, 2012). In addition, among 166 men who have sex with men recruited from HIV/AIDS clinics 71% and 42% reported childhood sexual and physical abuse, respectively (Pantalone, Horvath, Hart, Valentine, & Kaysen 2015). More than half also reported sexual assault (53%) and physical abuse (63%) in adulthood, and childhood sexual/physical abuse was significantly associated with adult sexual/physical abuse. While the rate of sexual assault in HIV-positive women is 30–68% (Kimerling, et al., 1999; Kalichman et al., 2002), the rates of victimization are several times lower for women in the general population (e.g., 9.2%; Kessler et al., 1995). Further, one-fourth of 611 women and men living with HIV in southeastern states reported sexual abuse prior to age 13 and more than half endorsed lifetime sexual or physical abuse (Whetten et al., 2006). Thus, PLWH consistently report higher rates of exposure to potentially traumatic events than the general population (Machtinger et al., 2012; Kessler et al., 1995) and multiple experiences of interpersonal violence or revictimization (Pantalone et al., 2015; Whetten et al., 2006).

Due to high rates of exposure to traumatic events among PLWH, it is not surprising that PLWH report higher rates of PTSD (35–64%; Kimerling et al., 1999; Safren, Gershuny, Hendriksen, 2003) compared to the general population (7–10%; Sherr, Nagra, Kulubya, Catalan, Clucas, & Harding 2010). PTSD is characterized by patterns of intrusive thoughts/memories (e.g., inability to keep memories of the event from returning), avoidance, changes in cognitions and emotions, and hyperarousal following exposure to a traumatic event(s) (APA, 2013). In a sample of 210 primary care patients with HIV, 34% endorsed clinically significant scores of PTSD on a self-report measure (Israelski et al., 2007). Similarly, based on a meta-analysis, it was estimated that 30% of women living with HIV have PTSD. Rates may be even higher among men who have sex with men. For example, 55% of male patients at an HIV clinic who had sex with men had PTSD (Kamen et al., 2011).

Rates of PTSD are likely high among PLWH because of both pre-existing trauma exposure and the impact of receiving an HIV diagnosis on PTSD symptoms (Neigh, Rhodes, Valdez, & Jovanovic, 2016). Receiving an HIV diagnosis involves being confronted with a potentially life-threatening illness. This stressor may cause PTSD symptoms to emerge among people with pre-existing exposure to traumatic life events, and increase risk of developing PTSD if exposed to traumatic events after receiving an HIV diagnosis (Bantjes & Kagee, 2018). Further, managing a lifelong HIV diagnosis may also exacerbate PTSD symptoms. In fact, duration of HIV infections was associated with more severe PTSD symptoms among PLWH in Poland (Rzeszutek, Oniszczenko, Zebrowska, & Firlag-Burkacka, 2015). For some people, receiving an HIV diagnosis is perceived as their most stressful life event and associated with PTSD symptoms. For instance, among 22 PLWH in South Africa who had PTSD, 36% reported their index traumatic event was knowledge of the diagnosis of HIV/AIDS (Olley, Zeier, Seedat, & Stein, 2005). Rates of PTSD symptoms did not differ between people who reported that their index event was receipt of their HIV/AIDS diagnosis compared to those who endorsed other types of index traumatic events (e.g., rape, intimate partner violence, serious accidents). Similarly, the average number of PTSD symptoms endorsed in association to HIV diagnosis on a self-report measure among 110 PLWH recruited from an AIDS service organization in the Midwest was 10 out of 15 (Delahanty, Bogart, & Figler, 2004). It is important to note there is debate regarding if receiving an HIV diagnosis constitutes a stressor that can cause PTSD. Researchers have theorized that because receiving an HIV diagnosis is a future-oriented stressor, the distress resulting from HIV diagnosis may not be fully captured by PTSD and some PTSD symptoms may be less likely to manifest in relation to this stressor (e.g., derealization; Bantjes & Kagee, 2018; Myer et al., 2008). Regardless there is evidence to support that PLWH are at risk to experience PTSD symptoms because they tend to have higher levels of lifetime exposure to traumatic events, and the impact of being diagnosed with HIV, and disease management is a significant stressor that is associated with PTSD symptoms.

Enhancing evidence-based treatments for PTSD among PLWH may be warranted because the comorbidity of PTSD and HIV may interact to produce unique biological and psychological outcomes compared to outcomes associated with each condition in isolation (Neigh, Rhodes, Valdez, & Jovanovic, 2016). Neigh and colleagues (2016) theorized that the impact of HIV on stress response may increase vulnerability to PTSD. For instance, neuronal inflammation is associated with both HIV and increased startle response

(Michopoulos, et al., 2015), suggesting that neuronal inflammation may increase vulnerability for PTSD among PLWH (Neigh, et al., 2016). In addition, the glucocorticoid pathway of the hypothalamic-pituitary-adrenal (HPA) axis is theorized to contribute to development of PTSD (Logue, et al., 2015) and may become dysregulated due to HIV infection (Panagiotakopoulos, Kelly, & Neigh, 2015) indicating another pathway in which PTSD and HIV produce neurobiological vulnerabilities to both stress and HIV infection (Neigh et al., 2016). Due to the potential cyclical relationship between PTSD and HIV, addressing PTSD with psychosocial interventions may serve to increase poor HIV-related health outcomes (Neigh et al., 2016).

Enhancing evidence-based treatments for PTSD among PLWH is also warranted because exposure to traumatic events and PTSD among PLWH is associated with ART adherence (for a review see Sherr et al., 2011). Mugavero and colleagues (2009) examined the median number of stressful life events among 611 PLWH during a prospective period of 27 months. The median number of stressful life events was nine, with a median of three severely stressful life events (e.g., death of an immediate family member, sexual assault, physical assault) occurring during this follow-up period (Mugavero et al., 2009). Experiencing the median number of stressful life events was associated with two times greater odds of not adhering to antiretroviral medication. Further, people exposed to recent traumatic events are 4.3 times more likely to experience ART failure compared to those who are not exposed to recent traumatic events (Machtinger, Wilson, Haber, & Weiss, 2012). PTSD subsequent to receiving an HIV diagnosis was associated with worse adherence to highly active antiretroviral therapy among men and women in the Midwest (Delahanty, Bogart, & Figler, 2004). Addressing PTSD with trauma-focused treatment may serve to increase adherence to ART, which is a health priority of the CDC (2015) because ART adherence can prevent transmission of HIV through reducing viral loads.

There are several potential pathways underlying the association between PTSD and ART non-adherence. For instance, PTSD may impact a person's ability to engage in successful regulation of behavior, which is theorized to relate to medical adherence (Hall & Fong, 2007). Moreover, symptoms of dissociation predicted difficulties adhering to ART (Keuroghlian et al., 2011). In addition, depression is highly comorbid with HIV and PTSD, and depression has been linked to ART non-adherence (Whetten et al., 2006). Furthermore, avoidance coping stemming from PTSD (and reinforced by HIV stigma as discussed below) may drive non-adherence to ART (Martinez et al., 2012). In fact, common reasons reported by PLWH for missing ART are due to not wanting to be reminded of HIV status (Katz et al., 2013). A recent study reported that emotional avoidance predicted non-adherence to ART among PLWH in a sample of 255 people recruited from community based clinics (Berghoff, et al., 2017). In sum, there is theoretical and empirical support that addressing PTSD is a promising avenue to increase adherence to ART.

Enhancing trauma-focused treatment for PLWH can serve to better address mental and medical health outcomes in an underserved and vulnerable population. Although empirically supported trauma-focused treatments for PTSD with HIV-negative populations have been widely established and understood, there are several reasons to further enhance trauma-focused treatment for PLWH. First, some PLWH may experience the compounding impact

of both lifetime exposure to traumatic events and the potentially traumatic events of receiving and managing an HIV diagnosis. In one study looking at the effects of an evidence-based PTSD treatment (Prolonged Exposure; Pacella et al., 2012) on a sample of PLWH, participants with an HIV-related index trauma reported quicker reductions in PTSD symptoms than those receiving treatment for a non-HIV related trauma. Second, PLWH who have PTSD likely have neurobiological vulnerabilities that serve to both maintain PTSD and increase risk of infections (Neigh et al., 2016). Neurobiological data (e.g., cortisol and function of the hypothalamic-pituitary-adrenal axis) also suggest that PTSD and HIV do not merely co-exist within a patient, but are more likely to interact, thus highlighting the need to understand the mechanisms involved in this common comorbidity. Third, trauma exposure and PTSD are associated with decreased adherence to ART, which warrants more attention and intervention given the emphasis on use of ART to prevent HIV transmission by reducing the amount of virus in their blood to undetectable levels (also referred to as Treatment as Prevention). Finally, trauma-focused treatment can be enhanced to address HIV-related stigma which is associated with PTSD adherence to ART. A case study described below serves as an initial step in providing empirical support for the recommendations for enhancements.

HIV-Related Stigma, PTSD, and Adherence to ART

HIV-related stigma is shame or disgrace affiliated with the disease and is associated with negative health outcomes for PLWH (for a review see, Earnshaw & Chaudoir, 2009). There are three types of stigma: 1) Experienced or anticipated stigma in the form of actual rejection or discrimination by people and society; 2) Perceived stigma which is the expectation of experiencing stigma; and 3) Internalized stigma or negative self-perceptions related to having the disease (Earnshaw & Chaudoir, 2009). Reports of fear of being judged by others predicted decreased adherence to ART among PLWH (Golin et al., 2002; Venable, Carey, Blair, & Littlewood 2006). Furthermore, internalized HIV-stigma has been shown to predict poor ART adherence, with mental health symptoms mediating this association in a sample of 202 men/women with HIV (Sayles, Wong, Kinsler, Martins, & Cunningham 2009). Unfortunately, HIV-related stigma is highly prevalent among PLWH (Sayles et al., 2009), further underscoring the significance of incorporating a stigma-focused component within a psychosocial intervention for PLWH.

Each form of HIV-related stigma is also associated with PTSD. For example, intense experiences of experienced HIV-related stigma predicted PTSD after controlling for other forms of traumatic events among a sample of PLWH in a Nigerian study (Adewuya et al., 2009). Similarly, Katz and Nevid (2005) reported that perceived stigma was a stronger predictor of PTSD than negative life events among a sample of female PLWH. Furthermore, there is preliminary research that internalized stigma is associated with hyperarousal and re-experiencing symptoms, presumably due to cognitions related to internalized stigma triggering PTSD symptoms (Gonzalez, et al., 2016). Taken together, there is empirical support that HIV-related stigma and PTSD symptoms are interrelated and both contribute to ART (non)adherence, adding support to the delivery of evidence based trauma-focused treatment among PLWH. Further, although individual treatment will not decrease society's harmful tendency to stigmatize PLWH, trauma-focused treatment may assist in combating

internalized stigma and misperceptions or over-anticipation of perceived stigma. Therefore, enhancing trauma-focused treatment for PTSD among PLWH is critical to aid this population in addressing this potential barrier to HIV treatment adherence.

Cognitive Processing Therapy for PLWH

The literature on the prevalence of trauma exposure in PLWH is extensive, yet effectiveness of trauma-focused treatment on HIV populations is scarce (Machtlinger et al., 2012; Seedat, 2012). Evidence-based treatments for PTSD, such as Prolonged Exposure (PE; Foa et al., 2005, 1999) and Cognitive Processing Therapy (CPT; Resick, Nishith, Weaver, Astin, & Feuer, 2002) have a strong evidence base for reducing symptoms of trauma-related distress, avoidance, and depressive symptoms among civilian and military adult populations with complex histories of traumatic event exposure (Chard, 2005; Monson et al., 2006). CPT has also been shown to reduce trauma-related self-blame and guilt (Nishith, Nixon, & Resick, 2005; Sobel, Resick, & Rabalais, 2009). Despite the evidence of efficacy and effectiveness of PE and CPT, the recent studies that have implemented trauma-focused treatment for PLWH do not involve evidence-based individual treatments and are predominantly group-based (Hien et al., 2010; Ginzburg et al. 2009). Therefore, there is a need to examine the utility of evidence-based treatments among individuals with PLWH who have PTSD.

Among PE and CPT, CPT may be particularly beneficial for PLWH because of the focus on unhelpful cognitions, or “stuck points”, in the form of assimilation (beliefs typically related to self-blame) and over-accommodation (extreme beliefs related to one self and the world) (Resick et al., 2002). The flexibility of CPT to focus on unhelpful thoughts and thinking patterns would allow patients to address both trauma-related and HIV-related stigma cognitions in treatment. Further, the themes addressed in CPT (i.e., safety, intimacy, trust, esteem, power, and control), although originally created from theory on sexual assault victims, may have relevant overlap to the unique issues related to disclosing HIV status, managing, and coping with HIV in interpersonal and intrapersonal domains.

It is important to consider the impact of comorbid substance use disorders (SUDs) when providing trauma focused treatment to PLWH because SUDs are common among this population (Hartzler et al., 2017). In a cohort of 10,652 PLWH the prevalence rate of SUD was estimated to be 48%, with marijuana being the most commonly used substance (Hartzler et al., 2017). Among clinical samples, there have not been significant differences in PTSD and depression following CPT among people with and without comorbid substance misuse; however the samples did not specifically involve PLWH (Kaysen et al., 2015; McDowell & Rodriques, 2012). CPT developers recommend that CPT is generally appropriate for people with comorbid SUD unless detoxification is needed or factors related to SUD interfere with the person’s ability to process their traumatic experiences (Resick, Monson, & Chard, 2017). Thus although there is preliminary support that CPT is appropriate for comorbid PTSD-SUD, more research is needed among PLWH and clinicians should carefully assess for this comorbidity and appropriately prioritize immediate treatment needs related to SUD when recommending trauma focused treatment.

Delivering trauma treatment to people with comorbid PTSD and HIV merits further investigation because of the aforementioned high rates of exposure to traumatic events,

PTSD, and HIV-related stigma and its association with adherence to ART. There is evidence that providing *concurrent* treatment for related disorders can be beneficial to reducing the symptoms of both (e.g., Back et al., 2019). Although HIV is not a mental health disorder, conceptually there are behavioral and cognitive barriers to medication adherence that could be addressed within a concurrent treatment. Tailoring trauma-focused treatment to target the specific needs of this population by including strategies to address HIV-related stigma may help enhance treatment engagement to both trauma-focused treatment and ART treatment, and reduce avoidant coping in this typically treatment-resistant population. Next, a case study describing the implementation of an evidence-based trauma focused treatment (CPT) with a male with PTSD and HIV by the first author is provided.

Method

ADAPT-ITT Framework

The ADAPT-ITT model provides a framework for adapting HIV-related evidence-based interventions (Wingood & DiClemente, 2008) that is widely used in treatment studies with diverse populations of adults and adolescents (Latham et al., 2010; Copenhaver et al., 2011; Wingood et al., 2011). The ADAPT-ITT model consists of eight phases: (1) Assessment of the needs of the target population, (2) Decisions around which empirically supported intervention to use or adapt, (3) Administration of novel methods (e.g., theatre testing) to adapt the chosen intervention, (4) Production of a first draft of the adapted intervention, (5) Identification of topical experts, (6) Integration of content provided by topical experts for the second draft of the adapted intervention (7) Training staff to implement the adapted intervention, and (8) Testing the adapted intervention. This model has been successfully applied to the cultural adaptation of several HIV programs (Wingood et al. 2011) and provides an empirically supported framework to begin to understand the tailored needs of individuals with comorbid PTSD and HIV and identify the “cultural” components (e.g., HIV-related stigma, chronic disease coping, medication adherence, disclosure stress) that may not be addressed by evidence-based PTSD models. The purpose of the present study was to begin initial steps of the ADAPT-ITT framework and determine whether adoption of or adaptation to evidence-based treatment is necessary to address this critical gap in comorbid PTSD and HIV populations. The aim was to explore the utility of an evidence-based PTSD intervention (CPT) with this underserved population.

Previous research informs Assessment of the problem (i.e., Step 1 of ADAPT-ITT and indicates that exposure to traumatic events and rates of PTSD are high among PLWH and associated with ART non-adherence (Brezing et al., 2015; Langebeek et al., 2014; Pence, 2009). The decision (step 2) to use CPT versus other evidence-based treatments for PTSD was based on the potential for CPT to target reductions in symptoms that have been linked to ART adherence including avoidance, hyperarousal, re-experiencing, and depression (Chard, 2005; Monson et al., 2006; Nishith et al., 2005; Resick et al., 2012; Sobel et al., 2009). Furthermore, CPT addresses problematic cognitions allowing flexibility to target HIV-related stuck points in addition to trauma-specific stuck points, which is central because HIV-related stigma may increase risk for PTSD and ART non-adherence. For administration of CPT in Step 3, the principles of theatre testing were used to deliver the unadapted

intervention to the new target population (i.e., PLWH with PTSD) and obtaining qualitative data from the patient and the provider. The following de-identified Case Example is included to provide preliminary empirical support for recommended adaptations to trauma-focused therapy for this population.

Assessment Instruments

PTSD Symptoms.—The PTSD Checklist-Civilian Version (Blanchard, Jones-Alexander, Buckley, & Forneris 1996) is a 17-item self-report measure that assessed severity of distress associated with each of the 17 symptoms of DSM-IV PTSD on a 5-point scale ranging from 1 “Not at all” to 5 “Extremely.” The PCL-C has good convergent and discriminant validity and demonstrates adequate test-retest reliability and internal consistency among civilian samples (Wilkins, Lang, & Norman, 2011). A clinical cut-off for specialty mental health clinics is recommended to range from 45 to 50.

Depressive Symptoms.—The PHQ-9 (Kroenke, Spitzer, & Williams, 2001) is a brief 9-item measure that is widely used in clinical settings to assess severity of depression symptoms. Items range from 0 “not at all” to 3 “nearly everyday.” It has good internal consistency, specificity, and sensitivity (Gilbody, Richards, Brealey, & Hewitt, 2007). A cut-off score of 10 is recommended for depression.

HIV Stigma.—The Internalized HIV Stigma Scale (Sayles et al., 2009) was used to assess HIV-related stigma. The scale includes 28-items that assess stigma related to stereotypes (“People blame me for having HIV”), disclosure concerns (“I am concerned that if I am sick people will find out I have HIV”), social relationships (“People avoid me because I have HIV”), and self-acceptance (“I feel ashamed to tell other people that I have HIV”). The items are rated on a 5-point Likert scale with response ranging from “None of the time” to “All of the time.” Higher scores indicate greater perceived stigma and in a sample of PLWH the mean score on the measure was 41 ($SD=19$). The internal consistency of the measure has been reported to be .93 and it has good construct validity.

Adherence.—One self-report item of adherence with ART medications was used from the ACTG Adherence Questionnaire. The AIDS Clinical Trial Group (ACTG) Adherence Questionnaire (Chesney et al., 2000; Reynolds et al., 2007) is a validated adherence instrument with varying recall periods for past 4 days, past 3 days, past 2 days, past week, or past month. Providers can also assess items related to patient adherence self-efficacy, social support, and reasons for missed doses. In addition to the self-report item, viral load from the electronic medical record was collected.

Participant

The participant was a 40 year old, African-American, gay, Christian male named Troy who had a full time job, lived with a roommate in an apartment complex, and was involved in coursework at night. The participant experienced a rape and aggravated assault several years prior to initiating treatment. He reported that he contracted HIV from the sexual assault. The participant was diagnosed with PTSD and Alcohol Use Disorder in remission. The patient was diagnosed with Alcohol Use Disorder shortly after the sexual assault and had been sober

for the past year. Due to his work and school schedule, a combination of in-person meetings at an HIV treatment center housed within a hospital (Ryan White clinic) where he received medical treatment and Online telehealth sessions were used to decrease barriers to treatment.

The patient's presenting complaints related to PTSD consisted of intrusive thoughts and images (e.g., seeing the image of his perpetrator, nightmares), physiological reactions to reminders (e.g., wearing certain shoes, going out at night alone, driving in cars), avoidance of thoughts and feelings related to rape, hypervigilance, anhedonia, social isolation, emotional numbing, difficulty concentrating, and feeling like he had a shortened future. Troy also reported changes in cognitions related both to his HIV status and rape, such as believing that he could harm people he was close to due to his HIV status and that other people viewed him as 'dirty'. His baseline scores on the self-report measures indicated clinically significant impairment for depressive symptoms (PHQ-9 total score = 16; with scores in the 15–19 range falling in "moderately severe depression" category and warranting treatment) and PTSD (PCL total score = 69; with scores of 45–50 considered a clinical range). He also reported high levels of internalized stigma (HIV Stigma Scale score = 101) and lab reports from his electronic medical record showed a viral load in the range of 19,000 (with viral loads of 100,000 considered high; 10,000 to be considered low; with the goal of a viral load less than 50 copies per mL of blood to be in the undetectable range; NAM, 2014).

Treatment

Troy participated in individual CPT to address his PTSD symptoms associated with his index trauma of rape. The first session consisted of reviewing psychoeducation about PTSD, discussion of the cognitive theory (assimilation vs. accommodation), and natural vs. manufactured feelings. At the second session, per CPT protocol, Troy completed his homework of writing an impact statement. In his impact statement, several statements that stood out to probe for potential stuck points included "was there something about me?" and "I am a big man - how did I let myself get raped. No one will believe me - I don't want my friends to find out" (e.g., subsequent stuck point: "If I tell my friends, I will lose my masculinity"). He believed that after the rape, he would "never have the perfect marriage that [I] was grooming myself for" and reported thinking he was de-valued as dirty goods. He reported that the rape would not have happened if he had just been wearing the right shoes and had not walked alone back to his car to change. He also discussed the impact of interacting with the legal and medical systems on his beliefs. For example, he described that medical providers informed him of his status in a quick and jarring manner without providing emotional support. He also reported his rape to law enforcement; however, his perpetrator was not adequately prosecuted. This resulted in Troy believing that the world is unjust, people do not care about him, and authority is not trustworthy. His final sentence referred to the impact of his HIV status rather than the rape (he believed he was "less trustworthy" as a partner because of his HIV status). Troy mentioned that he had written the statement when he was in a work seminar because he did not want to write it while alone. He had moments of tearfulness when reading the statement aloud for the first time in session. The therapist praised Troy for the powerful impact statement and discussed the connections among events, thoughts, and feelings. In accordance with the CPT protocol, the therapist assisted Troy identify assimilated stuck points and add them to his stuck point log

("I was raped because there is something wrong with me"; "If I would have been a real man, then I wouldn't have been raped").

In accordance with the ADAPT-ITT model for theatre testing (e.g., evaluating if protocol needs to be adapted), the therapist noted during the discussion of his impact statement in session two, Troy made several statements suggesting he had additional beliefs related to safety, trust, esteem, power and control, and intimacy, that were impacted by learning about his HIV status following the rape. In many ways this is similar to the impact statements of individuals with complex trauma histories where they may focus on one discrete trauma and weave in the impact of other traumas while still focusing on the most severe traumatic experience (e.g., a childhood sexual abuse survivor whose adult rape served to confirm unhelpful beliefs about safety; a Veteran who endured childhood physical abuse and because of beliefs formed as a child thinks he deserved the bad events to happen during service). Similarly, some of Troy's beliefs were intertwined with the rape (e.g., "Being diagnosed with HIV is my punishment for causing the rape"), and therefore the two events could have been conceptualized as one traumatic event requiring one impact statement to identify his unhelpful beliefs. However, there were also beliefs that were specifically related to receiving an HIV diagnosis and HIV stigma in the areas of intimacy (e.g., "People will never truly love me because of my status"), esteem ("Providers don't give me good treatment because they believe I am dirty for having HIV"), trust ("It is pointless to date because I will never be able to tell a partner I have HIV"), power ("I don't have control over my health"), and safety ("I don't have control over my health"). Even if Troy shifted his stuck points related to the rape, some of these HIV related beliefs may have remained unchanged. Thus, it may be particularly important to assist patient's in identifying HIV stigma-related beliefs that not only overlap with the rape, but are also unique to receiving and living with an HIV diagnosis.

Over the next 2–3 sessions, Troy and the therapist addressed several unhelpful beliefs related to HIV stigma. For example, when completing his ABC worksheets to track activating events, beliefs/stuck points, and consequences related to the rape for homework, Troy recounted an uncomfortable conversation with his supervisor related to HIV disclosure/stigma-related stress rather than the index trauma of rape. While the therapist appreciated that the worksheets helped Troy process and identify the thoughts and feelings experienced with disclosure of HIV to others, it also introduced the complexity of applying CPT to PLWH. The therapist wondered if more comprehensive enhancements to the protocol would be better suited for the patient, such as 1) including HIV-related stigma within the impact statement if it is relevant to address these related issues concurrently throughout treatment and/or 2) focusing on one worksheet a week about the index trauma and one worksheet a week about any HIV-related stuck points. Another option would be to address the HIV-related stuck points/maladaptive cognitions after CPT is completed but within the CPT framework. However, it is likely that this would only be effective for individuals that do not have traumatic experiences that are closely related to HIV (e.g., those that are sexual in nature, interpersonal in nature, or if HIV was contracted during a sexual assault).

The therapist also noted that during visits 5–7 (CPT protocol session 4 and 5 content), Troy began to mention more details about his sexuality when rewriting the trauma account. He

shared that he had been having consensual sex with men. He also mentioned that he had been outside of a gay bar when he was raped. Content of sessions were focused on processing assimilated stuck points through Socratic dialogue that Troy had related to the reasons he was not only raped but also contracted HIV. Many of the stuck points that Troy had were directly related to HIV stigma such as “If people with HIV contract it because of careless behavior, then I must have been careless”, “If I was a better Christian then this wouldn’t have happened,” and “I was raped because I asked for it by attracting men.” The therapist purposely took time to address his spirituality, “standards of his upbringing”, sexuality, gender, and HIV status within the context of stuck points. Through Socratic questioning and homework sheets, Troy was able to challenge stuck points with some of the CPT skills such as noticing all-or-none terms (e.g., Troy noted that “I made it seem as if all clubs or gay clubs are unsafe which is untrue because rape doesn’t happen at all clubs or only gay clubs.”), making judgments based on feelings rather than facts (e.g., “I have let my emotions take simple things that don’t represent danger and made me fear those situations”) and taking the situation out of context (e.g., Troy was able to arrive at the statement “The rape occurring was not because I went to the club and it could have happened at any place”). Other content included a discussion of duty to warn his status to partners or being able to call the health department so they can reach out to partners in a more anonymous way if they were exposed.

By visit number 9, the patient had covered the content in the first 6 CPT protocol sessions, including completed homework sheets focused on multiple stuck points related to both the rape and being diagnosed with HIV. Troy got very teary-eyed and explained “I should be over it; I should be farther than I am.” After discussion about how symptoms related to rape can decrease, Troy communicated that he was still using avoidance coping and recently began to notice that now his “daily stressors” included coping with HIV-related stigma. When moving on to session 7 content and reviewing homework of challenging thoughts worksheets to help identify patterns of problematic thinking, Troy disclosed that the woman he considered his “local” mother had passed away and he was immediately hospitalized the night after he found out due to blood pressure problems. The therapist noted traumatic grief embedded within the disclosure distress (e.g., he never had a chance to tell her about the traumatic event nor mourn her loss since he was in the hospital). The session focused on processing grief reactions including psychoeducation and exploring potential stuck points related to disclosure distress.

During the tenth and eleventh visit, there were several stuck points identified 1) related to the rape, 2) finding out about his HIV status, and 3) negative disclosure experiences with (former) friends. Troy reported and engaged in Socratic dialogue around the belief “I deserve bad things to happen to me because I went to a gay bar.” He also processed a positive disclosure experience that he had over the phone with his biological mother who knew about the rape, but not his HIV status. Troy stated that she provided very supportive feedback that assisted him in reframing some of his rape-related stuck points related to the rape resulting in him being morally damaged. Although, Troy still struggled with stuck points related to his sexual orientation causing his rape and subsequent HIV status.

The therapist noted that while the patient remained very engaged in attendance and some homework, there was not full homework completion. Failure to complete homework is common among people with PTSD and the provider addressed this issue by completing the homework in-session. The therapist also considered if the complexity of his stressors (i.e., rape, learning of his status, and stigma-related stress/disclosure) and related stuck-points were potentially contributing to avoidance and interfering with homework completion. The therapist explored this in-session and the patient described that completing homework assignments on rape-related stuck points was difficult because it led him to have distressful thoughts about his HIV status and future. He described feeling overwhelmed and having thoughts that he is “damaged” and would not be able to recover from PTSD when completing the assignments. This presented an opportunity to explore this stuck point with Socratic Dialogue in session.

The progress with the CPT protocol was slowed down due to the patient needing to undergo a medical procedure. Troy continued to maintain attendance over telehealth sessions, but therapist noted that his pain medication made him appear very flat and low energy. The therapist noted issues related to fatigue may affect abstract cognitive work. While trauma-informed therapists are careful not to reinforce avoidance by postponing or canceling an intervention exercise, therapists may want to consider how pushing a difficult cognitive exercise on someone with temporary cognitive deficits could potentially lead to the patient feeling ineffective or lead them to disengage from therapy. In this population, medically relevant reasons for postponing protocol may be appropriate. After a few weeks of recovery (visit 13), Troy and the therapist covered CPT session 9 and 10 content targeting trust and control. Troy was incredibly confident in challenging beliefs related to trust. For example, he previously believed that he had perfect judgment, but realized that no one has perfect judgment and that he did the best he could in an unpredictable situation. At the following session covering content related to self-esteem (session content 11; visit 14), Troy reviewed his homework and reported a balanced thought that he could be a Christian AND “dance freely”, which resulted in feelings of relief and decreased guilt. He was somewhat hesitant to believe the statement, “I have HIV and I’m loveable,” and recognized the importance of continuing to work on stuck points related to esteem.

At visit 15, therapist covered the last content of CPT session 12, including reading the new impact statement. Troy discussed how he now believes that the world is generally a safe place, and has improved self-worth. He also stated that he is able to trust some people, and that people can still be trustworthy in some aspects even if they are not trustworthy with disclosing his HIV status or rape history. He admitted to still having urges to engage in avoidance behaviors, particularly related to attending HIV-related medical appointments, but he felt confident in using strategies to challenge and reframe his thoughts (“this is an appointment to check on the control of my wellness and maintaining viral suppression”). Troy’s scores at the end of the treatment protocol suggested clinically meaningful reductions in PTSD symptoms (PCL dropped from 69 to 56; with 10 points as a minimum threshold for clinically significant improvement; Monson et al., 2008) as well as depressive symptoms (i.e., PHQ9 score of 12 fell out of the moderately severe category into the moderate depression range, with providers using clinical judgment about treatment based on patient’s functional impairment). Information from the electronic medical health record showed his

viral load as “not detected.” Troy’s stigma scores also decreased, however were still very high (i.e., HIV Internalized Stigma score was an 89 compared to 101). Again, in line with the ADAPT-ITT protocol, the therapist noted that more targeted focus on each of the different traumatic experiences for the new impact statement might have highlighted additional areas of progress (and potentially remaining stuck points), but patient self-reports suggested appropriate time of termination. Troy’s feedback to the therapist was that he would like to continue having therapy sessions that lasted a full year, especially to help cope with the anniversary of the rape. The therapist reminded Troy of his tools to challenge negative thoughts, but also offered potential booster sessions in the future. At the end of treatment, the therapist noted how the request of the patient to stay in treatment for a longer time frame is inconsistent from what the literature may suggest about this “difficult to treat” multiple needs population. Discussion of extant and/or new modifications of evidence-based treatment on a larger scale may help identify strategies/supports that effectively engage this comorbid population in mental health services.

Discussion

CPT is a cognitive treatment that can help reduce PTSD symptoms. There are additional complexities and challenges that should be considered in the delivery of CPT and other evidence-based PTSD treatments among PLWH. CPT provides a unique opportunity to treat trauma-related and non-trauma-related stuck points within treatment, thereby allowing for the potential to reduce related mental health symptoms. A previously tested modification to CPT includes a flexible number of sessions (e.g., 12–18) of evidence-based PTSD treatment, with additional “stressor sessions” inserted when deemed necessary (Galovski et al., 2012). While the flexible version of CPT has not been explicitly tested in PLWH, a variable length approach to CPT with comorbid PTSD and HIV populations may provide additional gains in reducing PTSD scores (e.g., despite clinically significant improvement of the case study, post-intervention scores still fell in a clinical range). Clinicians may consider additional sessions to increase the benefits of treatment to PLWH. However, PLWH experience additional difficulties and stigma that are not typically addressed within the context of CPT and other evidence-based PTSD treatments. It may be useful to add examples in each of the modules of common HIV stigma related beliefs and education related to stigma-related consequences of contracting HIV, especially if HIV was contracted within the context of the traumatic experience. Alternatively, it may be useful to include an additional session focused on stuck points specifically related to HIV stigma. This could be done within the CPT framework and existing worksheets. Alternatively, components from other treatments, like Acceptance and Commitment Therapy could be adapted for this population for an additional session, however, this path should be proceeded with caution because there is limited evidence for using Acceptance and Commitment Therapy for PLWH (for a meta-analysis, see Graham, Gouick, Krahé, & Gillanders, 2016). Further, medical complexities may arise during treatment with PLWH more so than other trauma-exposed populations. In some situations it may be reasonable to postpone trauma-focused treatment due to onset of medical issues. However, in a population that it is at higher risk to have medical complications, more flexibility around beginning and continuing trauma-focused treatment may be needed. For example, in the case study, the patient had not been treated for PTSD for

several years due to comorbid medical issues and alcohol use; however, PTSD may have been contributing to these comorbidities warranting earlier trauma-focused treatment. More work is needed to complete the steps of ADAPT-ITT to continue to provide empirical support for enhancing PTSD treatment for PLWH, including more formal qualitative evaluation from patients and providers, draft of potential modules to add, feedback from experts in coping for HIV-related stigma and Infectious Disease clinicians, and testing of the enhanced intervention to determine whether the modifications appropriately targeted the current gaps and needs.

Clinical Barriers/Challenges of Comorbid PTSD and HIV Populations

CPT reduces trauma-related self-blame and guilt (Resick et al., 2002), and may serve as a feasible platform to address other relevant themes, such as internalized HIV stigma. Given that the specific component of self-blame is addressed in CPT and that previous studies have demonstrated that avoidant coping (an outcome of PTSD and an associated feature of HIV stigma/discrimination; Singh et al., 1999; Leyro et al., 2015) can be effectively reduced with CPT in PTSD populations, CPT was decided as a better evidence-based model to address the needs of the comorbid PLWH population compared to other PTSD treatment.

Although avoidance and shame are common after experiencing a traumatic event, PLWH who have PTSD may have avoidance and shame related to both the HIV and PTSD. This potential for increased avoidance and shame can complicate treatment if both are not addressed. The CPT protocol does allow for both trauma-related and non-trauma-related stuck points to be addressed, however, it does not include specific examples/content related to HIV-specific stigma. HIV-specific stigma is complicated because it may be present for the individual either within the context of the traumatic event and in general related to living with HIV. For example, if a sexual minority patient experienced sexual assault and contracted HIV from the assault, they may experience stigma related to the sexual assault, the HIV diagnosis, and their sexual orientation. These stigma-related stuck points may compound one another. One potential method to address trauma-related stuck points and HIV-related stuck points could be to conduct an impact statement with specific instructions to also address the impact of receiving an HIV diagnosis on beliefs about why the index traumatic event, why they believe they contracted HIV, and how receiving a diagnosis of HIV impacted their beliefs related to the CPT themes. Providing psychoeducation about the potential impact of receiving an HIV diagnosis and managing HIV on beliefs may assist people identify stuck points that are contributing to current distress and serving to maintain PTSD symptoms. Alternatively two separate impact statements could be conducted. Trauma-related stuck points can be identified within the impact statement of the traumatic experience, and HIV-related stuck points can be identified within the impact statement of contracting HIV. In this case study, the patient's stigma scores were still elevated at the end of treatment, suggesting that additional "stressor sessions" in a variable length approach of CPT (Galovski et al., 2012) may help to adequately address HIV-related stigma.

Similar to the specific handout in CPT related to power and control, therapist feedback during the ADAPT-ITT process involving the case study suggests that it would be helpful for there to be a specific handout and set of coping strategies for HIV-related stigma within each

module. The cognitive challenge examples within CPT currently do not generalize readily to this patient population. For example, there may need to be a specific handout within the “trust” module related to disclosure safety. While PLWH are encouraged to disclose their status since it has been linked with better social support and leading to better medication adherence, there is also a lot of distress associated with this conversation and it would be helpful if there was a role play activity or “checklist” that helped patients identify safe spaces to have these conversations and how to cope if the conversation resulted in a negative outcome (e.g., loss of a relationship, potential risk of former friend discussing HIV status with others).

Another unique aspect of HIV is that some states have a duty to warn associated with HIV diagnoses, while others do not. The authors, topical experts in trauma-related research, noted that it can be important to know the state’s rules related to duty to warn prior to treating PLWH to ensure informed consent. Due to high rates of stigma, many PLWH may have experiences of secondary victimization from health professionals and legal providers. For example, the patient reviewed in the case study perceived that his medical provider was unsupportive when informing him of his HIV status and the legal system failed to prosecute his perpetrator. If a provider needs to break confidentiality without having adequately explained the limits of confidentiality, especially in relation to HIV status, this could be a major betrayal resulting in greater PTSD symptoms, distrust of the medical community, and increase risk for discontinuation of both medical/mental health treatment. Providers need to be aware of the law in their state and prepared to discuss this within the limits of their confidentiality prior to initiating treatment and throughout treatment as needed.

Due to the potential medical complications with HIV, many PLWH have several medical appointments and committing to weekly psychotherapy can be difficult. Therefore, feedback from the current case study in step 2 of the ADAPT-ITT model highlights telemedicine as one way to address barriers to attending treatment. CPT and other evidence-based PTSD treatments delivered via telemedicine have been found to be equally effective to in person delivery (Morland et al., 2015, Acierno et al., 2017) and there is no reason to believe that this would be different for PLWH. The option of telemedicine may increase treatment engagement and attendance. Training providers in Ryan White Clinics in brief interventions that involve screening and referring patients to trauma-focused treatment delivered via telehealth may increase reach of evidence-based treatments for this population.

Acceptability

Providing an evidence-based PTSD treatment to PLWH for the typical 10–12 sessions may not be feasible depending on the case. Many may need a longer course of treatment due to the long-term needs of this population and fewer positive experiences with disclosure. It may take more time with this patient population to develop rapport so that the patient can ensure that HIV disclosure to the therapist can be a corrective experience. Variable time periods for completion have been shown in tailored PTSD treatment for HIV-negative populations (Castillo, Lacefield, C’de Baca, Blankenship, & Qualls 2014; Resick, et al. 2017; Galovski et al., 2012), with a current study by Resick and colleagues examining PTSD treatment sessions that range from 4 to 24 sessions to reach treatment completion goals (Resick, et al.,

in progress). As previously discussed, flexibility in number of weekly sessions may allow for more disclosure processing since both cognitive and behavioral theories for processing traumatic events suggest that disclosure of the traumatic event within the context of treatment is beneficial, however, it is unclear what the effects of HIV disclosure may be. Future research is needed to examine HIV disclosure within the context of PTSD treatment. In this initial examination, it appeared that HIV disclosure was not iatrogenic because patients can improve in their symptomology. However, HIV contraction and disclosure was not specifically targeted within the treatment.

A standard PTSD treatment protocol (i.e., CPT) did allow for the patient to have “control” of the trauma memory, however, this directly contradicted the patient’s feeling of lack of control regarding health. Integrating acceptance strategies regarding physical health changes with HIV may be a helpful adaptation to standard CPT protocols that can be expanded through step 4 in the ADAPT-ITT process. Further, integrating HIV-specific stuck points regarding health was a helpful adaptation with the patient described in the current manuscript and provides empirical support for identifying other enhancements tailored for PLWH. By addressing HIV-specific stuck points regarding health, the patient was able to regain control of health by identifying a goal of staying healthy by suppression through medication adherence.

While therapy interventions have integrated aspects of PTSD treatment with HIV stigma protocols, many of these models are specifically tailored to ethnic and/or sexual minority PLWH with trauma exposure and thus would not generalize to larger PLWH populations with comorbid PTSD meeting clinical thresholds. In the absence of an empirically supported intervention for PLWH with clinically significant PTSD, evidence-based practice encourages providers to find an intervention that effectively targets symptoms and mechanisms that are similar (e.g., step 2 of ADAPT-ITT; “D”ecide on the intervention to use) and determine whether the extant protocol can be “a”dopted (e.g., implemented “as-is” with a new population) or “a”dapted. Given the observations of this case study, next steps for modification may include adoption of existing aspects of CPT such as implementation of a variable length CPT protocol with expansion of “stressor session” protocol to more explicitly address specific cognitions associated with HIV stigma. Alternatively, if subsequent preliminary data indicates that more formal adaptation is warranted, new therapist protocols within the CPT self-blame/guilt module could be added (step 4 of ADAPT-ITT to “p”roduce a written tailored protocol). Next steps would involve a call to convene topical experts in HIV stigma and PTSD treatment (e.g., infectious disease clinicians, trauma-focused psychologists, caseworkers at Ryan White clinics, developer of CPT; step 5 of ADAPT-ITT to identify “t”opical experts) to provide qualitative feedback on the new adapted protocol based on their expertise. Step 6 of the ADAPT-ITT process would then involve “i”ntegration of the qualitative feedback into the adapted protocol. Subsequent steps of the ADAPT-ITT framework would include “t”raining of the providers (step 7) that would deliver the adapted protocol of CPT (along with development of fidelity monitoring) and complete the process with “t”esting the efficacy of the adapted intervention (step 8) in reducing stigma and associated improvements in HIV-related health outcomes.

Feasibility

Clinical lore suggests that it is difficult to engage PLWH in 12+ session manualized protocols. However, it has not been explicitly tested when services are co-located in a trusted setting and/or patients are allowed flexibility with telehealth opportunities to overcome logistical barriers. Provision of mental health services within the Ryan White clinic, or in collaboration with the Ryan White clinic, may be one way to address the potential treatment engagement barrier while also addressing potential barriers related to stigma. Additional preliminary data is needed to determine whether adoption of CPT or more formal adaptation of CPT (using the ADAPT-ITT approach) is warranted.

Therapist-level factors including belief in empirically supported treatments, stereotypes about PLWH, and willingness to enact flexible strategies to engage PLWH within empirically supported treatments may contribute to the effectiveness of CPT with this patient population. It may be helpful for individuals who are providing PTSD treatment to PLWH to consult regularly with other professionals to ensure that they are concurrently addressing PTSD symptoms and addressing any HIV-specific barriers to symptom reduction within PTSD treatment (e.g., impact of a medical appointment when poor viral load results are shared).

Future Directions

This manuscript outlines potential modifications to an evidence-based PTSD treatment to address the unique symptoms and barriers that may be experienced by PLWH in the context of trauma focused therapy. Future work can help inform subsequent enhancements of trauma-related treatments to ensure the needs of PLWH who have PTSD are addressed. First, it would be helpful for clinical trials to examine the efficacy of existing PTSD treatments to decrease PTSD and trauma-related avoidance coping among PLWH. In addition, researchers need to examine if existing PTSD treatment decreases HIV-stigma and ART adherence among PLWH. This would provide additional insights in the need to further enhance trauma-focused treatment for PLWH. Second, qualitative interviews with PLWH who have PTSD could benefit from the process of treatment adaptation. Finally, it would be beneficial to conduct a randomized clinical trial of enhanced trauma-focused treatment (e.g., adding content that focuses specifically on HIV-related stigma and adhering to ART) with PLWH to determine if an adapted version is more effective than the standard protocol with this patient population and ensure that clinicians feel equipped to deliver effective and culturally sensitive treatment to this underserved group.

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