Application of the Consolidated Framework for Implementation Research to Facilitate Delivery of Trauma-Informed HIV Care

Kaitlin N. Piper, MPH[1]; Lauren L. Brown, PhD, LCSW[2];
Ilyssa Tamler, MPH[1]; Ameeta S. Kalokhe, MD, MSc [3,4];
Jessica M. Sales, PhD[1]

Background: The high prevalence of trauma and its negative impact on health among people living with HIV underscore the need for adopting trauma-informed care (TIC), an evidence-based approach to address trauma and its physical and mental sequelae. However, virtually nothing is known about factors internal and external to the clinical environment that might influence adoption of TIC in HIV primary care clinics.

Methods: We conducted a pre-implementation assessment consisting of in-depth interviews with 23 providers, staff, and administrators at a large urban HIV care center serving an un-/under-insured population in the southern United States. We used the Consolidated Framework for Implementation Research (CFIR) to guide qualitative coding to ascertain factors related to TIC adoption.

Results: Inner setting factors perceived as impacting TIC adoption within HIV primary care included relative priority, compatibility, available resources, access to knowledge and information (ie, training), and networks and communications. Relevant outer setting factors included patient needs/resources and cosmopolitanism (ie, connections to external organizations). Overall, the HIV care center exhibited high priority and compatibility for TIC adoption but displayed a need for system strengthening with regard to available resources, training, communications, cosmopolitanism, and patient needs/resources.

Conclusions: Through identification of CFIR inner and outer setting factors that might influence adoption of TIC within an HIV primary care clinic, our findings begin to fill key knowledge gaps in understanding barriers and facilitators for adopting TIC in HIV primary care settings and highlight implementation strategies that could be

Background

Exposure to traumatic events is a critical social determinant of health that often goes undetected and unaddressed. People living with HIV (PLWH) disproportionately experience physical, emotional, and sexual traumatic events.[1] Approximately half report experiences of childhood sexual and/or physical abuse,[2-4] nearly double the prevalence of childhood abuse observed in the general population.[5] Similarly, compared with the national lifetime prevalence estimate of intimate partner violence among women (~33%),[6] several studies have documented that lifetime experience of intimate partner violence is twice as prevalent among PLWH.[4,7,8]

Furthermore, the prevalence of recent post-traumatic stress disorder (PTSD) among women living with HIV is approximately 30%, more than five times the national average.[4]

Along with being highly prevalent among PLWH, traumatic exposures are adversely linked to engagement in medical care and health outcomes. It is associated with decreased adherence to clinic appointments and antiretroviral therapy (ART), higher HIV viral loads, lower CD4 counts, increased ART resistance, more opportunistic infections, and higher rates of AIDS-related morbidity and mortality.[8-12] Additionally, individuals with histories of traumatic exposures are more likely to engage in substance abuse and unprotected sexual

intercourse, promoting transmission of HIV to others.[8,13] Thus, there is great need for improved clinical management of trauma-related complications within HIV primary care.

Trauma-informed care (TIC) can be defined as principle-driven practices adopted by organizations that promote safety, empowerment and healing among individuals with traumatic exposures.[13] According to the Substance Abuse and Mental Health Services Administration (SAMHSA), trauma-informed systems are assumed to: 1) realize the widespread impact of trauma and

> *Along with being highly prevalent among people living with HIV, traumatic exposures are adversely linked to engagement in medical care and health outcomes.*

understand potential paths for recovery; 2) recognize signs and symptoms of trauma in clients, staff, and others involved with the system; 3) respond by fully integrating knowledge about trauma into policies, procedures, and practices; and 4) seek to actively resist re-traumatization.[14] To achieve these principles of TIC, organizations typically must be educated on trauma, adopt practices to effectively recognize trauma (eg, screen and as-

sess patients for trauma), and be able to respond to patients' trauma needs (ie, link patients to appropriate treatments and services).[14] Evidence from mental health, substance use, and social service settings demonstrate that adopting TIC practices improves patient outcomes, including mental health symptoms, substance abuse severity, and trauma symptoms,[15,16] and enhances patient satisfaction and engagement with clinic staff.[16-18]

TIC often requires a pragmatic change to organizational culture so that all decisions are informed by the ways that trauma impacts patients' lives; and service delivery is intended to promote healing and prevent harm.[19,20] Because patients have variable trauma exposures and trauma-related needs, there is no single trauma treatment that can meet the needs of all individuals.[14,21] Therefore, TIC is guided by a set of skills, values and principles that can be adapted to the varied needs of individuals, rather than a standardized set of procedures.[14,21,22] Without a single fixed protocol, TIC is sometimes referred to as "complex" because it requires substantial forethought and implementation planning, so that the "intervention," often times consisting of multiple protocols, is appropriately tailored to the needs of the organization and patient population.[22,23] However, the lack of a singular set of procedures provides flexibility, so that TIC can be tailor-made for different users and adopted across a wide variety of settings (ie, schools, jails, hospitals).[24,25]

Despite the need for TIC, there is a paucity of research on the feasibility and capacity to adopt TIC in Ryan White-funded HIV primary

care settings.[1,7] Ryan White-funded HIV centers serve approximately 50% of all PLWH in the United States, providing care to low-income, un-/under-insured populations, who often have experienced high levels of trauma.[26] These centers typically utilize integrated care models, providing medical, behavioral, psychological, and social services on-site; suggesting an infrastructure in which TIC can be integrated.[26]

In this study, we conducted a pre-implementation assessment involving key stakeholders (clinical providers, staff and administrators), to inform implementation planning for TIC adoption within Ryan White clinics. We utilize the Consolidated Framework for Implementation Research (CFIR) as our analytic framework[27] to systematically assess context-specific factors that may be related to the success of TIC implementation in HIV services. CFIR provides a comprehensive set of constructs known to be associated with successful implementation. These 39 constructs are organized into 5 domains: intervention characteristics; inner setting; outer setting; characteristics of individuals; and implementation process.[27] CFIR can be used as a practical guide to assess context-specific barriers/facilitators to implementation, which can aid in preparing and planning for the implementation of evidence-based interventions (EBI).[27]

METHODS

Study Design

Between March 2017-January 2018, we conducted a formative

pre-implementation assessment consisting of semi-structured, in-depth qualitative interviews with 23 providers, staff, and administrators at an urban HIV primary care center as part of a larger mixed-methods study. We employed a framework-driven approach, using CFIR to guide qualitative analysis to ascertain factors related to implementation of TIC.

Study Setting

This study was conducted at an urban, HIV primary care center (hereafter referred to as "the Center") in the southeastern United States. The Center receives Ryan White HIV/AIDS Program funding to serve more than 6,000 un-/under-insured PLWH, the majority of whom are men (75%) and African American (83%). Many patients have histories of trauma, homelessness, and substance abuse. The Center is staffed by roughly 160 individuals and has onsite medical, behavioral health, spiritual services, legal support, and oral health care.

Sample and Recruitment

Prior to initiation of research activities, the team met with key Center administrative stakeholders to introduce the study, address questions, and obtain feedback on recruitment procedures. With the support of Center leadership, qualitative interviews were conducted with Center providers, staff, and administrators. Purposive sampling was utilized to sample participants to ensure adequate representation across different services and staff roles. Providers were defined: as advanced practice providers and physicians; staff as nurses, case managers, social workers, health educators, patient navigators, patient access representatives, etc.; and administrators as members of the Center's executive leadership.

Data Collection

After providing informed consent and completing the survey portion of the larger mixed-method study, staff and providers were given the option to participate in an in-depth interview. Interviews were conducted in-person by trained Master's-level study staff in a private space at the Center and audio-recorded. Participants received $50 for completing the interview. Average interview duration was 30-60 minutes. The interview guide was informed by "Creating Cultures of Trauma-informed Care" materials and CFIR constructs.[27,28] The guide focused on participants' perceptions (related to their acceptability and prioritization of TIC) across several TIC domains including trauma screening, assessment, and treatment. Interview guides also inquired about staff training needs, capacity for implementation of TIC, and processes for adoption of new practices. Interviews were transcribed verbatim and checked against the original audio recording to ensure accuracy. The study was approved by the university and hospital-affiliated institutional review boards. All procedures were in accordance with the ethical standards of the responsible committee on human experimentation (institution and national) and with the Helsinki Declaration of 1975, as revised in 2000.

Data Analysis

Using deductive (ie, framework-driven) methods,[29] CFIR was utilized as the analytic framework for data analysis. To identify CFIR constructs that are salient for adoption and implementation of TIC, the team reviewed the TIC literature to identify constructs important for TIC implementation, and analysts conducted an initial reading of the transcripts to identify the CFIR constructs that were most commonly discussed across interviews.[14,19-22] The coding identified seven constructs from two CFIR domains: outer setting and inner setting (see constructs and definitions in Table 1). To develop the codebook, CFIR construct definitions were operationalized in the context of TIC and were given a set of inclusion and exclusion criteria. Coding was conducted by two analysts, and passages in the interviews were coded into the relevant CFIR constructs. To enhance coding consistency, the two analysts coded the transcripts together, where coding and discussions about code definitions and applications occurred simultaneously. All text was coded until 100% agreement was reached. Iterative adjustments to operationalized definitions and inclusion/exclusion criteria occurred throughout the coding process. After coding, an analysis memo was created for each of the 7 CFIR constructs, which summarized the most common strengths and weaknesses for each implementation construct. These strengths and weaknesses were then consolidated into a narrative and described below in the results section. Interviews were coded and analyzed using QSR NVivo qualitative software.[30]

Results

Nine providers, 10 staff, and four administrators completed in-depth interviews. Inner setting CFIR constructs (ie, relative priority, access to knowledge and information, available resources, compatibility, and networks and communications) and outer setting constructs (ie, cosmopolitanism and patient needs and resources) are discussed below (Table 1).

Inner Setting

Relative Priority

Providers and staff believed that TIC should be a priority, since it can improve patient outcomes, such as treatment adherence:

"*I personally think [TIC] might actually improve outcomes in terms of retention and engagement in care, because of the amount of understanding that our providers can show towards the patients*" (Provider).

Weighing TIC against other initiatives, administrators similarly believed that TIC should be a priority:

"*I definitely think that they should [prioritize TIC]. I think anything that helps our patients handle what's going on with them…so that they stay in care*" (Administrator).

Access to Knowledge and Information

Although they commonly work with patients with complex trauma histories, providers and staff had not received formal training on TIC:

"*I know generally what it is, but I haven't received any official training around it. I'm basing it solely on what I've read and my own personal experiences with trauma*" (Provider).

Participants wanted more education about trauma and its impact on health outcomes, so they could better meet patient needs. They also wanted the training to be offered to all staff (not solely clinicians):

"*The people who kind of pick up on [trauma] are the people who are checking them in, because they can see it. They're not considered a provider, so it's thought that they don't need any training in these areas*" (Provider).

Available Resources

In addition to HIV care, the Center provides a wide variety of patient support resources including housing placement, legal consultation, social work, and mental health services:

"*We have multiple services here. You don't have to go to this place for mental health, you don't have to go to this place for your [HIV] care, you don't have to go this place for housing*" (Provider).

Specifically, the Center benefits from having a mental health department on-site:

"*[Our mental health department] work really closely with us. Our mental health counselors that's on call. All I have to do is just pick up*

the phone, and they usually take it from there*" (Staff).

However, staff, providers, and administrators raised concerns about adding additional trauma screening and treatment services due to staffing and time constraints:

"*We are bursting at the seams in terms of our volume and our numbers of patients, and our lack of human resources, and so I think introducing any new services is always gonna be a real challenge*" (Administrator).

Compatibility

Because the Center "*is very privileged in the number of services that are co-located in the building*" (Administrator), participants believed that "*the clinic is set up in a way to deal with [trauma] probably better than some*" (Provider). Formal trauma screening, a key component of TIC, could likely be integrated into intake assessments:

"*I think there is opportunities at [intake] when they're already doing an extensive screening to incorporate [trauma-related] questions*" (Administrator).

Additionally, the Center has the capability to provide mental health services on-site, including counseling and support groups, but participants believed the Center should provide more trauma-specific services:

"*I don't think there's any specific service that's dedicated to trauma-informed care or trauma-related services.*" (Provider).

Table 1. Consolidated Framework for Implementation Research: domains, constructs, and relevance to trauma-informed care (TIC) implementation planning

CFIR domain	Construct	Example quote	Relevance to TIC implementation planning
Inner Setting - - - factors internal to the organization that may influence implementation	Relative Priority - - - Perceptions of the importance of implementing TIC at the Center.	"I definitely think that they should [prioritize TIC]. I think anything that helps our patients handle what's going on with them better for their own wellbeing, but ultimately then so that they stay in care, because too many of our patients kind of drop in and out of care, and then they don't become virally suppressed" (Administrator).	Despite competing initiatives, all participants believed that TIC implementation should be a priority because of the high level of trauma experienced by patients as well as the potential to improve patient health outcomes.
	Access to Knowledge and Information - - - The level of knowledge about TIC and the additional training needed to incorporate TIC into Center flow.	"You never know who is going to come through that door and if you're trained and you have the knowledge to help that patient I think that would really help both the clinic and that patient. So I think giving all staff that proper training I think it would be most beneficial" (Staff).	Training on trauma-related practices was lacking. To effectively implement TIC, participants wanted more information on trauma as well as skills to manage and respond to patient needs.
	Available Resources - - - The resources available or dedicated to the implementation of TIC at the Center.	"We only have half an hour to see the patient. And in that half-hour, you have to take care of their physical health, their HIV, their sex life, and everything else in between…Nobody would have the time to sit down and explore [trauma]. And that's like a deep process" (Provider).	Although the Center provides comprehensive services, time and staffing limitations may be a barrier to the implementation. TIC must be integrated into workflows to not add additional time to patient visits or overburden staff.
	Compatibility - - - The extent to which TIC aligns with existing workflows, systems, and culture.	"The clinic is set up in a way to deal with [trauma] probably better than some" (Provider).	TIC was compatible with the mission, processes, and services already offered and could be integrated within current workflows.
	Networks and Communications - - - How staff within the Center communicate and coordinate care for patients with trauma histories.	"It all feels pretty seamless to me in some ways because I have the luxury of that I know people and so it's not difficult for me to call up the phone or just text and say, 'Hey, I've got this person who needs a little something something. Can you help me out?'" (Provider)	Multidisciplinary team meetings and "warm" hand-offs facilitated service linkages for traumatized patients.
Outer Setting - - - factors external to the organization that may influence implementation	Cosmopolitanism - - - How the Center utilizes external partners to provide care for patients with trauma histories.	"We don't really know what the referral process is. There's a ton of release forms you have to get signed. There's some part of the process that's complicated. But I think it's the lack of a relationship or some kind of easy streamline way of doing this" (Provider).	The degree to which the Center is networked with external organizations is critical for TIC, as patients experiencing trauma may need linkages to social services not provided on-site. However, unclear referral procedures prevented effective linkages to external care.
	Patient Needs and Resources - - - patient barriers to trauma management.	"We also have a huge number of international patients and refugee folks who- telling them to go to mental health is like telling them I can cure you by putting a brick on your head and having you walk around with it" (Provider).	There are many barriers to engaging patients in trauma services, such as stigma, health literacy, and system navigation. Patient navigators are important advocates for patients and can help facilitate linkages to trauma services.

Besides being compatible with their current services, participants believed that TIC was compatible with their patients' needs and the Center's values and mission:

"*[Trauma] affects our mission to be able to help patients get healthier in a lot of different ways under a lot of different conditions*" (Provider).

Networks and Communications

When conducting internal referrals for traumatized patients, participants preferred using "warm hand-offs" to link patients to other departments (such as mental health):

"*I'm a face-to-face type guy. A lot of times I'll just walk you there. The warm hand-off is worth it from what I've seen*" (Staff).

Additionally, providers have weekly multi-disciplinary meetings to discuss challenging patients, which facilitate interdepartmental communication and ensure patient linkage to appropriate services:

"*Sometimes what we'll do is we have the multidisciplinary rounds every Thursday. And if the patient has experienced extensive trauma, we'll talk about it, because then we have the opportunity to link them to mental health at that point*" (Provider).

Participants also discussed how electronic medical records facilitated care coordination for patients with trauma histories:

"*I feel like it's definitely improved the success rate of patients linking to these services versus paper form.*" (Provider).

However, some participants described inadequacies of communication within the electronic record:

"*They put that [trauma] assessment into our electronic medical records, but not everybody has access to that area of the electronic medical records. So sometimes they're asked those questions again, which I think can be re-traumatizing*" (Staff).

Outer Setting

Cosmopolitanism

Because not all trauma services can be provided on-site, linkages to external organizations is critical to TIC implementation. Currently, the Center partners with various external organizations including medical providers, behavioral health providers, and social and legal services to provide trauma-related support. Despite external partnerships, participants agreed that "*there's a lot of ways that things can go wrong when it's an outside agency*" (Staff). Overall, participants were unsure where to send patients for trauma support: "*I'm still at a loss of kinda where to send people*" (Provider), and they faced barriers due to unstandardized referral procedures:

"*When you're referring from outside, each different agency has their different way of referring and that's what makes it more complicated*" (Provider).

Patient Needs and Resources

Based on provider perspectives, patient-level barriers to trauma management included stigma, low health literacy, difficulties navigating systems, transportation constraints, and lack of insurance. First, patients can be reluctant to engage in support service due to mental health stigma and discomfort with discussing trauma:

"*There is a huge stigma about getting mental health care, and I've really had to over the years figure out some ways to talk about [mental health] with patients*" (Provider)

Participants reported patients needing assistance synthesizing health care information:

"*Patients are often times given an incredible amount of information medically…it's incredibly hard to synthesize all that information and execute on each one- In particular when we're dealing with a more vulnerable population.*" (Administrator).

Navigating health systems (ie, establishing and reaching appointments) was also raised as a challenge, with patient navigators identified as critical to helping patients initiate referrals:

"*It's not easy for patients to get around when they haven't been here before. So we're looking for a little bit more support of [patient navigators] to carry the patient through that process and make sure that referral actually is executed.*" (Administrator).

Furthermore, lack of transportation to the Center or to external support organizations can prevent service engagement:

"*People don't like taking [public transportation], or are scared of [public transportation], or feel like it's hard to navigate*" (Provider).

Insurance can also prevent patients from accessing services, especially services located outside of the Center:

"*They're from an underserved population and they're uninsured and herein lies the problem. Many of the outside referrals require you to have insurance…so we're going to have to find a way to do this inside of [the Center]*" (Provider).

DISCUSSION

HIV primary care professionals strongly supported the implementation of TIC but indicated that successful adoption of TIC within HIV care may be impacted by several contextual factors. Our study identified CFIR inner setting factors (access to knowledge and information, available resources, compatibility, relative priority, and networks and communications) and outer setting factors (cosmopolitanism and patient needs) as relevant for TIC adoption within Ryan White HIV care settings. These context-specific factors have implications for selecting implementation strategies, which will foster successful implementa-

tion of TIC in these settings.[31-34]

Regarding inner setting factors, participants described a positive implementation climate (ie, relative priority and compatibility) for TIC, indicative of the Center's high absorptive capacity for adopting new TIC practices. Participants identified TIC as high priority, believed its adoption was compatible with processes and services already offered, and thought that it could be integrated within current workflows. Thus, an implementation process strategy, such as developing an implementation blueprint to solidify the stage-specific TIC processes and activities,[34] would be an ideal first strategy to guide TIC integration into HIV care.

Despite a positive climate, participants described challenges related to access to knowledge and information that suggest TIC implementation would require capacity-building strategies (eg, training) for providers/staff on how to identify and respond to patient trauma.[34] Findings from recent studies suggest small-group, case-based discussions are effective TIC training mediums in medical settings,[35] and a 4.5 hour training may be enough to improve TIC attitudes and spur mental health professionals to begin implementation.[36] Findings also highlight the value of ongoing technical assistance, as early stage implementation can require additional individualized support.[35,36]

Time and staffing limitations (ie, available resources) may also pose barriers to the implementation of additional trauma-related services. Participants believed that TIC must be integrated into workflows to not add additional time to patient visits

or overburden staff. As such, integration strategies (eg, reminder systems, revisions to electronic medical record [EMR] systems), a category of implementation strategies focused on optimizing the integration of a specific EBI into practice,[34] may be ideal for HIV care settings, particularly those with onsite mental health services.

The final inner setting factor, networks and communications, was generally seen as a facilitator to service delivery. Center staff were already

> *HIV primary care professionals strongly supported the implementation of trauma-informed care (TIC) but indicated that successful adoption of TIC within HIV care may be impacted by several contextual factors.*

operating from informal interdepartmental networks and communication channels, facilitating linkages to trauma support services. However, a major barrier to communication and interdepartmental referrals was the lack of consistent use of the EMR system, sometimes resulting in patients receiving multiple trauma screenings and inadvertently being

re-traumatized. Thus, integration strategies focused on formalizing care team meetings and/or enhancing the use of the EMR system for trauma screening within the Center could facilitate information sharing and streamline patient visits.[34]

Outer setting factors salient to the Center's capacity to implement TIC included patient needs/resources and cosmopolitanism. Participants recognized a need for TIC among their patient population, suggesting that HIV treatment centers have a unique opportunity to provide trauma services to a particularly vulnerable population. However, patient barriers related to stigma, systems navigation, health literacy, transportation, and insurance made it difficult for providers to successfully link patients to necessary mental health and support services. Participants believed that patient navigators may help mitigate some of these access barriers, by serving as advocates for patients, scheduling patient appointments, and identifying and responding to insurance-related challenges. Thus, an integration strategy to address patient barriers is ensuring patient navigators are members of the care team and receive TIC training.

Findings revealed the Center demonstrated strong cosmopolitanism, with a broad network of external community partner agencies with whom to connect patients to meet their complex trauma needs. However, the external referral process was often unclear/undefined. Scale-up strategies focused on facilitating multiple-setting implementation of TIC, may be ideal methods to coordinate the provision of multifaceted

trauma care across agenies.[34] Specifically, establishment of strong partnerships may be achieved through collaboration focused on jointly developed procedures for referring and accepting patients, defining roles and responsibilities at all levels, and conducting ongoing evaluation of the referral process.[37]

Strengths and Limitations

This study utilized CFIR to assess factors that may influence TIC implementation. Since TIC has not yet been implemented in this clinical setting, we are unable to examine the association between identified factors and implementation outcomes. However, the pre-implementation assessment is necessary to anticipate potential barriers to adoption as well as develop context-specific implementation plans to guide integration of TIC into HIV primary care. Future studies are needed to evaluate the effects of TIC on the health outcomes of PLWH.

A limitation of this study was that only one Center was assessed, limiting the ability to translate findings to clinics in different settings and contexts. Despite this, findings are likely generalizable as many Ryan White HIV primary care centers have experience working with patients with complex trauma histories, similar integrated care models, multidisciplinary staff/providers with long-standing relationships with patients, and often operate under resource and staffing constraints.[26] Additionally, this study captured patient-level barriers from the perspective of providers; future studies are warranted to understand PLWH's perspectives on trauma and barriers to care.

Conclusions

People living with HIV (PLWH) in the United States, the majority of whom are racial, ethnic and/or sexual minorities, also disproportionately experience traumatic events thus necessitating TIC in settings where they receive care. This study underscores the importance of considering CFIR inner and outer setting constructs when preparing to implement TIC in Ryan White-funded HIV primary care settings. Because TIC is a complex intervention with core components that can be flexibly adopted, we argue a comprehensive, framework-driven pre-implementation assessment is a necessary first phase to establish site-tailored TIC implementation planning and the identification of suitable implementation strategies accounting for unique needs of the HIV care setting and population. Further, given that several of the implementation strategies identified in this study pointed to integration strategies to overcome resource and communication barriers, future research could explore whether embedding screening and internal referral practices into EMRs improves implementation (eg, penetration and reach of TIC) and patient outcomes. This study's pre-implementation process and findings may inform TIC adoption planning and future implementation research to support TIC delivery in these valuable safety-net settings to address traumatic exposures as a critical social determinant of health for PLWH.

REFERENCES

1. Brezing C, Ferrara M, Freudenreich O. The syndemic illness of HIV and trauma: implications for a trauma-informed model of care. *Psychosomatics*. 2015;56(2):107-118. https://doi.org/10.1016/j.psym.2014.10.006 PMID:25597836

2. Whetten K, Leserman J, Lowe K, et al. Prevalence of childhood sexual abuse and physical trauma in an HIV-positive sample from the deep south. *Am J Public Health*. 2006;96(6):1028-1030. https://doi.org/10.2105/AJPH.2005.063263 PMID:16670226

3. Wilson SM, Sikkema KJ, Ranby KW. Gender moderates the influence of psychosocial factors and drug use on HAART adherence in the context of HIV and childhood sexual abuse. *AIDS Care*. 2014;26(8):959-967. https://doi.org/10.1080/09540121.2013.873765 PMID:24410324

4. Machtinger EL, Wilson TC, Haberer JE, Weiss DS. Psychological trauma and PTSD in HIV-positive women: a meta-analysis. *AIDS Behav*. 2012;16(8):2091-2100. https://doi.org/10.1007/s10461-011-0127-4 PMID:22249954

5. Cougle JR, Timpano KR, Sachs-Ericsson N, Keough ME, Riccardi CJ. Examining the unique relationships between anxiety disorders and childhood physical and sexual abuse in the National Comorbidity Survey-Replication. *Psychiatry Res*. 2010;177(1-2):150-155. https://doi.org/10.1016/j.psychres.2009.03.008 PMID:20381878

6. Center for Disease Control and Prevention. Intersection of Intimate Partner Violence and HIV in Women. 2014. Last accessed November 12, 2020 from https://www.cdc.gov/violenceprevention/pdf/ipv/13_243567_green_aag-a.pdf.

7. Sales JM, Swartzendruber A, Phillips AL. Trauma-informed HIV prevention and treatment. *Curr HIV/AIDS Rep*. 2016;13(6):374-382. https://doi.org/10.1007/s11904-016-0337-5 PMID:27704251

8. Kalokhe AS, Paranjape A, Bell CE, et al. Intimate partner violence among HIV-infected crack cocaine users. *AIDS Patient Care STDS*. 2012;26(4):234-240. https://doi.org/10.1089/apc.2011.0275 PMID:22364209

9. Jewkes R, Dunkle K, Jama-Shai N, Gray G. Impact of exposure to intimate partner violence on CD4+ and CD8+ T cell decay in HIV infected women: longitudinal study. *PLoS One*. 2015;10(3):e0122001. https://doi.org/10.1371/journal.pone.0122001 PMID:25816336

10. Machtinger EL, Haberer JE, Wilson TC, Weiss DS. Recent trauma is associated with antiretroviral failure and HIV transmission risk behavior among HIV-positive women and female-identified transgenders. *AIDS Behav*. 2012;16(8):2160-2170. https://doi.org/10.1007/s10461-012-0158-5 PMID:22426597

11. Mugavero MJ, Pence BW, Whetten K, et al. Predictors of AIDS-related morbidity and mortality in a southern U.S. Cohort. *AIDS Patient Care STDS*. 2007;21(9):681-690. https://doi.org/10.1089/apc.2006.0167 PMID:17919095

12. Schafer KR, Brant J, Gupta S, et al. Intimate partner violence: a predictor of worse HIV outcomes and engagement in care. *AIDS Patient Care STDS*. 2012;26(6):356-365. https://doi.org/10.1089/apc.2011.0409 PMID:22612519

13. Wu E, El-Bassel N, Witte SS, Gilbert L, Chang M. Intimate partner violence and HIV risk among urban minority women in primary health care settings. *AIDS Behav*. 2003;7(3):291-301. https://doi.org/10.1023/A:1025447820399 PMID:14586191

14. SAMHSA. *SAMHSA's Concept of Trauma and Guidance for a Trauma-Informed Approach*. 2014. Last accessed November 12, 2020 from file:///C:/Users/amd/AppData/Local/Temp/SAMHSA_Trauma.pdf

15. Morrissey JP, Jackson EW, Ellis AR, Amaro H, Brown VB, Najavits LM. Twelve-month outcomes of trauma-informed interventions for women with co-occurring disorders. *Psychiatr Serv*. 2005;56(10):1213-1222. https://doi.org/10.1176/appi.ps.56.10.1213 PMID:16215186

16. K Hopper E. L Bassuk E, Olivet J. Shelter from the storm: trauma-informed care in homelessness services settings. *Open Health Serv Policy J*. 2010;3(1): 80-100. Last accessed November 12, 2020 from https://bit.ly/2UiDoNU

17. Bateman J, Henderson C, Kezelman C. *Trauma-informed care and practice: Towards a cultural shift in policy reform across mental health and human services in Australia. Position paper*. Mental Health Coordinating Council; 2013. Last accessed November 12, 2020 from https://www.mhcc.org.au/project/trauma-informed-care-and-practice-ticp/

18. Volk K, Guarino K, Konnath K. *Homelessness and traumatic stress training package*. Rockville, MD: Center for Mental Health Services, Substance Abuse and Mental; 2007.

19. Harris M, Fallot RD. Envisioning a trauma-informed service system: a vital paradigm shift. *New Directions for Mental Health Services*. 2001;2001(89):3-22.

20. Machtinger EL, Cuca YP, Khanna N, Rose CD, Kimberg LS. From treatment to healing: the promise of trauma-informed primary care. *Womens Health Issues*. 2015;25(3):193-197. https://doi.org/10.1016/j.whi.2015.03.008 PMID:25965151

21. Elliott DE, Bjelajac P, Fallot RD, Markoff LS, Reed BG. Trauma-informed or trauma-denied: principles and implementation of trauma-informed services for women. *J Community Psychol*. 2005;33(4):461-477. https://doi.org/10.1002/jcop.20063

22. Wilton J, Williams A. *Engaging with complexity: Providing effective trauma-informed care for women*. Centre for Mental Health; 2019. Last accessed November 12, 202 from https://www.mentalhealth.org.uk/publications/engaging-complexity-providing-effective-trauma-informed-care-women

23. US Department of Health & Human Services. *Model trauma system planning and evaluation*. Washington, DC: US Department of Health and Human Services; 2006.

24. Bloom SL, Farragher B. *Restoring Sanctuary: A New Operating System for Trauma-Informed Systems of Care*. Oxford, England: Oxford University Press; 2013. https://doi.org/10.1093/acprof:oso/9780199796366.001.0001

25. Ko SJ, Ford JD, Kassam-Adams N, et al. Creating trauma-informed systems: child welfare, education, first responders, health care, juvenile justice. *Prof Psychol Res Pr*. 2008;39(4):396-404. https://doi.org/10.1037/0735-7028.39.4.396

26. *HSRA's Ryan White & Global HIV/AIDS Program Fact Overview*. August 2018; Last accessed November 12, 2020 from https://hab.hrsa.gov/sites/default/files/hab/Publications/factsheets/program-factsheet-program-overview.pdf.

27. Damschroder LJ, Aron DC, Keith RE, Kirsh SR, Alexander JA, Lowery JC. Fostering implementation of health services research findings into practice: a consolidated framework for advancing implementation science. *Implement Sci*. 2009;4(1):50. https://doi.org/10.1186/1748-5908-4-50 PMID:19664226

28. Fallot RD, Harris M. Creating cultures of trauma-informed care (CCTIC): A self-assessment and planning protocol. *Community Connections*. 2009;2(2):1-18.

29. Hennink M, Hutter I, Bailey A. *Qualitative Research Methods*. Thousand Oaks, CA: SAGE Publications Limited; 2020.

30. *NVivo Qualitative Data Analysis Software* [computer program]. Version 11.2015. Melbourne, Australia: QSR International.

31. Powell BJ, Beidas RS, Lewis CC, et al. Methods to improve the selection and tailoring of implementation strategies. *J Behav Health Serv Res*. 2017;44(2):177-194. https://doi.org/10.1007/s11414-015-9475-6 PMID:26289563

32. Powell BJ, McMillen JC, Proctor EK, et al. A compilation of strategies for implementing clinical innovations in health and mental health. *Med Care Res Rev*. 2012;69(2):123-157. https://doi.org/10.1177/1077558711430690 PMID:22203646

33. Proctor EK, Powell BJ, McMillen JC. Implementation strategies: recommendations for specifying and reporting. *Implement Sci*. 2013;8(1):139. https://doi.org/10.1186/1748-5908-8-139 PMID:24289295

34. Leeman J, Birken SA, Powell BJ, Rohweder C, Shea CM. Beyond "implementation strategies": classifying the full range of strategies used in implementation science and practice. *Implement Sci*. 2017;12(1):125. https://doi.org/10.1186/s13012-017-0657-x PMID:29100551

35. Pletcher BA, O'Connor M, Swift-Taylor ME. DallaPiazza M. Adverse childhood experiences: A case-based workshop introducing medical students to trauma-informed care. *MedEdPORTAL*. 2019;15:10803. https://doi.org/10.15766/mep_2374-8265.10803

36. Niimura J, Nakanishi M, Okumura Y, Kawano M, Nishida A. Effectiveness of 1-day trauma-informed care training programme on attitudes in psychiatric hospitals: A pre-post study. *Int J Ment Health Nurs*. 2019;28(4):980-988. https://doi.org/10.1111/inm.12603 PMID:31081263

37. Seifer SD. Building and sustaining community-institutional partnerships for prevention research: findings from a national collaborative. *J Urban Health*. 2006;83(6):989-1003. https://doi.org/10.1007/s11524-006-9113-y PMID:17082993