

AIDS Service Organizations and Trauma-Informed Care

Alex S. Keuroghlian MD MPH Director of Education and Training Programs, The Fenway Institute Assistant Professor of Psychiatry, Harvard Medical School Tuesday May 24[,] 2017

Learning Objectives

- By the end of this session, learners will be able to:
 - Understand the disproportionate prevalence of trauma- and stress-related disorders among people living with HIV.
 - Describe the relationship of trauma to decreased engagement in HIV care services.
 - Apply best practices in trauma-informed care to improve engagement of clients in HIV care services.

Syndemic of HIV and Trauma

- People living with HIV (PLWH) experience disproportionate trauma, which often leads to posttraumatic stress disorder (PTSD) (Seedat, 2012).
- A trauma history and PTSD increase risk of acquiring and transmitting HIV, and are linked to disease progression and poor quality of life (Singer and Clair, 2003).
 - HIV infection and trauma are a syndemic illness, i.e., synergistic epidemics whose interaction contributes to excess burden of disease.
- Without well-informed care, trauma among PLWH can lead to highly detrimental health consequences at individual and population-health levels (Brezing and Freudenrich, 2015).

Epidemiology of HIV and Trauma

- Approximately half of PLWH report childhood physical or sexual abuse, which is 1.5–2 times more than the general population (Whetten et al., 2006; Wilson et al., 2014).
- Up to 90% of PLWH report at least one or more lifetime severe traumatic events (Pence et al., 2007).
- Among HIV-positive women, 55.3% lifetime prevalence of intimate partner violence (5 times national average) and 30% recent prevalence of PTSD (2 times national average) (Machtinger et al., 2012a).

Epidemiology of HIV and Trauma

- Prevalence of acute stress disorder among HIVpositive women is 55%, versus 38% among HIVpositive men (Israelski et al., 2007).
- 68% of HIV-positive women report past sexual assault, versus 35% of HIV-positive men (Kalichman et al., 2002).
- 66% of HIV-positive women report childhood physical or sexual abuse; 25% report abuse by a partner in adulthood; 10% report abuse while pregnant (Villar-Loubet et al., 2014)

Epidemiology of HIV and Trauma

- While a trauma history is less common among HIV-positive men than HIV-positive women, it is still more common than trauma among HIV-negative men (Brezing and Freudenrich, 2015).
- 35% of HIV-positive men who have sex with men (MSM) report childhood sexual abuse, which was associated with higher prevalence of dissociative symptoms, and more than 55% of this group met the criteria for PTSD (Kamen et al., 2012a).
- There is comparable trauma prevalence among MSM and men who have sex with women, but MSM have more prevalent posttraumatic stress symptoms, including dissociation (Kamen et al., 2012b).

Stigma, Stress, and Health



Adapted from Hatzenbuehler, 2009

Trauma and Risk Behaviors among PLWH

- History of trauma and development of posttraumatic stress symptoms is linked with highrisk behaviors.
- Trauma associated with higher incidence of HIV transmission among both PLWH and HIVuninfected people (Brezing and Freudenreich, 2015).
- Among HIV-positive MSM, condomless anal intercourse with casual partners associated with a history of sexual abuse (Kamen et al., 2013).

Trauma and Risk Behaviors among PLWH

- HIV- positive gay and bisexual men with PTSD more likely to have HIV transmission behaviors than their counterparts without PTSD (O'Cleirigh et al., 2013).
- Trauma related to discrimination due to race, sexual orientation, or HIV status is linked with condomless anal intercourse among HIV-positive Black men (Fields et al., 2013).
- Among HIV-positive Black men who have sex with both men and women, increased sexual risk behaviors are associated with PTSD symptom severity (Glover et al., 2013).

Trauma and Antiretroviral Adherence

- Poor adherence to antiretroviral therapy (ART) is correlated with more frequent childhood trauma, sexual abuse before onset of puberty, depression, and PTSD (Whetten et al., 2013; Meade et al., 2009).
- HIV-positive women with recent trauma are four times more likely to experience ART failure (Machtinger et al., 2012b).
- Having a history of trauma is also predictive of mortality among PLWH (Pence et al., 2012).

Trauma and Antiretroviral Adherence

- Sexual trauma is associated with greater likelihood of HIV treatment failure.
 - Traumatic stress adversely impacts the immune system and overall physical and mental well-being (McEwan and Seeman, 1999).
 - A study with African American men with HIV demonstrated that PTSD correlated with elevated biomarkers of stress, including cortisol and catecholamines (Glover et al., 2013).
 - PTSD symptom severity and psychological dissociation symptoms are associated with lower ART adherence (Keuroghlian et al., 2011).

PTSD and Antiretroviral Adherence

- Recruited individuals with HIV from communitybased clinics for cross-sectional study;
- Self-reported adherence measured with AIDS Clinical Trials Group Adherence Questionnaire;
- Greater PTSD associated with lower odds of ART adherence even after controlling for depression;
- PTSD symptoms associated with lower odds of adherence in individuals with high levels of psychological dissociation but not low levels of dissociation.

Keuroghlian et al., 2011

PTSD and Antiretroviral Adherence



Keuroghlian et al., 2011

PTSD and Antiretroviral Adherence

- Importance of psychosocial interventions that target posttraumatic stress symptoms to maximize antiretroviral adherence in community populations;
- Integration of trauma-focused treatment services into antiretroviral medication management may effectively improve adherence.

Bio-behavioral HIV Care

- Tailored behavioral interventions exist for antiretroviral adherence (e.g., Life-Steps; Safren et al., 2001);
- Combined biomedical and behavioral HIV treatment strategies are optimal;
- Behavioral health treatments that restructure distressing cognitions can improve self-care and physical health outcomes.

Substance Use and Posttraumatic Stress

- Co-occurrence of substance use disorders (SUDs) with posttraumatic stress symptoms is highly prevalent:
 - Associated with increased treatment costs, decreased treatment adherence, and worse physical and mental health outcomes (McCauley et al, 2012);



 Substance use is a common avoidance strategy for posttraumatic stress.

Definition of Trauma-Informed Care

- According to the Substance Abuse and Mental Health Services Administration (SAMHSA, 2014), a trauma-informed service organization:
 - Realizes widespread impact of trauma and understands potential paths for recovery;
 - Recognizes signs and symptoms of trauma in clients, staff, and others involved with the system;
 - Responds by fully integrating knowledge about trauma into policies, procedures, and practices;
 - Seeks to actively resist re-traumatization.

Trauma-Informed Care: An Emerging National Priority

- Emergence of several evidence-informed treatments designed to improve posttraumatic stress symptoms (Brezing and Freudenreich, 2015).
- Implementation of these strategies to target effects of trauma on health has been inconsistent, including at ASOs.
- This issue has recently gained more national prioritization with increasing concerns about consequences of posttraumatic stress among veterans.

Trauma-Informed Care for PLWH

- Trauma-informed approach should incorporate the following (Brezing and Freudenreich, 2015):
 - A trauma-sensitive practice environment
 - Trainings to ensure a sense of safety in all patient interactions with staff members, including physicians, clinical, and administrative staff.
 - Identification of trauma and its mediators
 - Sequelae of posttraumatic stress, including poor adherence to treatment and high-risk behaviors.
 - Education for PLWH about connection between trauma and its negative behavioral and physical health outcomes
 - Linkage to suitable resources and referrals for more specialized treatment as needed

Integrated Treatment for Addictions and Trauma

- Recent shift in focus toward trauma-informed care created a favorable environment in community SUD treatment settings for evidence-based integrated therapies that also target trauma and stress (Killeen et al., 2015; McGovern et al., 2015; Roberts et al., 2015; Institute of Medicine, 2008).
- Integrated treatments for SUDs and posttraumatic stress are well tolerated and improve both SUDs and PTSD.



National Center for Trauma-Informed Care

- In 2005, SAMHSA developed the National Center for Trauma Informed Care
 - Promotes awareness and implementation of best practices
 - Disseminates resources for and referrals for traumafocused treatments
 - Defines trauma-informed care as an organizational approach rooted in principles that focus on being mindful of and responding to people who have experienced or may be at risk of trauma; rather than a particular set of rigid procedures

SAMHSA, 2014

Trauma-Informed Service Environment

- Priority is to promote a sense of safety
- Prior traumatic experiences influence reaction in subsequent interactions, such as the process of seeking care
- A history of interpersonal trauma can contribute to mistrust of caretakers and increased likelihood of being re-traumatized.
- Retention in care for PLWH trauma histories requires engagement through collaboration, transparency, trust, and consistent supportiveness.

Brezing and Freudenreich, 2015

Screening for and Identifying Trauma and Its Mediators

Screening all PLWH for a trauma history

- Extra attentiveness for subpopulations at even higher risk of trauma, who may have heightened sensitivity.
- Screening for intimate partner violence.
- If trauma is identified, care team ought to assess specifically for posttraumatic stress symptoms
 - Hypervigilance; avoidance, numbing, re-experiencing through intrusive thoughts, flashbacks, nightmares; psychological dissociation, including amnesia, depersonalization, and derealization.

Brezing and Freudenreich, 2015

The Primary Care PTSD Screen (PC-PTSD)

Exhibit 1.4-5: PC-PTSD Screen

In your life, have you ever had any experience that was so frightening, horrible, or upsetting that, *in the past month*, you...

- Have had nightmares about it or thought about it when you did not want to? YES NO
- Tried hard not to think about it or went out of your way to avoid situations that reminded you of it? YES_NO
- Were constantly on guard, watchful, or easily startled? YES NO
- Felt numb or detached from others, activities, or your surroundings? YES NO

Source: Prins et al., 2004. Material used is in the public domain.

SAMHSA, 2014

Intimate Partner Violence Screening Tool

Exhibit 1.4-4: STaT Intimate Partner Violence Screening Tool

- 1. Have you ever been in a relationship where your partner has pushed or **Slapped** you?
- 2. Have you ever been in a relationship where your partner **Threatened** you with violence?
- 3. Have you ever been in a relationship where your partner has thrown, broken, or punched **Things**?

Source: Paranjape & Liebschutz, 2003. Used with permission

Exhibit 1.4-7: The PTSD Checklist

The PTSD Checklist

Instructions to Client: Below is a list of problems and complaints that people sometimes have in response to stressful experiences. Please read each one carefully and circle the number that indicates how much you have been bothered by that problem *in the past month*.

- 1.
 Repeated, disturbing memories, thoughts, or images of a stressful experience?

 1. Not at all
 2. A little bit
 3. Moderately
 4. Quite a bit
 5. Extremely
 - Repeated, disturbing dreams of a stressful experience?
 Not at all
 A little bit
 Moderately
 Quite a bit
 Extremely
 - 3. Suddenly acting or feeling as if a stressful experience were happening again (as if you were reliving it)?
 - 1. Not at all 2. A little bit 3. Moderately 4. Quite a bit 5. Extremely
 - Feeling very upset when something reminded you of a stressful experience?
 Not at all
 A little bit
 Moderately
 Quite a bit
 Extremely
 - Having physical reactions (e.g., heart pounding, trouble breathing, sweating) when something reminded you of a stressful experience?
 Not at all 2. A little bit 3. Moderately 4. Quite a bit 5. Extremely
 - Avoiding thinking about or talking about a stressful experience or avoiding having feelings related to it?
 - 1. Not at all 2. A little bit 3. Moderately 4. Quite a bit 5. Extremely
 - Avoiding activities or situations because they reminded you of a stressful experience?
 Not at all
 A little bit
 Moderately
 Quite a bit
 Extremely
 - Trouble remembering important parts of a stressful experience?
 Not at all
 A little bit
 Moderately
 Quite a bit
 Extremely
 - 9. Loss of interest in activities that you used to enjoy?
 1. Not at all
 2. A little bit
 3. Moderately
 4. Quite a bit
 5. Extremely
 - Feeling distant or cut off from other people?
 Not at all
 A little bit
 Moderately
 Quite a bit
 Extremely
 - 11. Feeling emotionally numb or being unable to have loving feelings for those close to you? 1. Not at all 2. A little bit 3. Moderately 4. Quite a bit 5. Extremely
 - 12. Feeling as if your future will somehow be cut short? 1. Not at all 2. A little bit 3. Moderately 4. Quite a bit 5. Extremely
 - Trouble falling or staying asleep?
 Not at all
 A little bit
 Moderately
 Quite a bit
 Extremely
 - 14.Feeling irritable or having angry outbursts?1. Not at all2. A little bit3. Moderately4. Quite a bit5. Extremely
 - 15. Having difficulty concentrating?1. Not at all 2. A little bit 3. Moderately 4. Quite a bit 5. Extremely
 - Being "super-alert" or watchful or on guard?
 1. Not at all 2. A little bit 3. Moderately 4. Quite a bit 5. Extremely
 - Feeling jumpy or easily startled?
 Not at all
 A little bit
 Moderately
 Quite a bit
 Extremely

Source: Weathers et al., 1993. Material used is in the public domain.

Screening for Mediators and Sequelae of Trauma

- Screening for high-risk behaviors, inadequate medication adherence, and poor health outcomes.
 - Incorporated into the treatment plan for proactive intervention.
- For PLWH with negative trauma screening results, primary prevention through education about increased risk of traumatization

Brezing and Freudenreich, 2015

Educating Clients about Trauma and HIV

- Understanding the relationship of trauma to poor health outcomes is critical for PLWH
- Helps cultivate insight about how prior traumatic experiences influence current health behaviors

Educating Clients about Trauma and HIV

- Randomized control trial of women living with HIV who had trauma histories (Puffer et al., 2011):
 - Showed that psychoeducation about relationship of traumatic experiences to current distress and high-risk transmission behaviors empowered participants.
- If referral to specific treatment for trauma, SUDs, or other mediators is not accessible:
 - Education can enhance patients' self-awareness and capacity to enhance self-care and decrease likelihood of transmission (Brezing and Freudenreich, 2015).

Resources and Referrals for Additional Services

- If ASO has access to psychiatric, substance use disorder, and social services:
 - Prompt referrals for specialized trauma- and mediator-specific treatments.
- Tailoring interventions for a customized approach to symptom reduction, including strategies to prevent relapse, can significantly enhance ART adherence and mitigate high-risk behaviors.

Brezing and Freudenreich, 2015

Resources and Referrals for Additional Services

- Evidence-based treatments are available for:
 - Trauma recovery
 - Co-occurrence of trauma and substance use disorders
 - Co-occurrence of trauma and nonsubstance-related psychiatric disorders
 - Skills to manage dysregulated affect and tolerate distress in the context of trauma.
- Enhanced cognitive and behavioral coping skills contribute to higher patient satisfaction, lower distress, and a reduction in high-risk behavior.

Brezing and Freudenreich, 2015

Cognitive Processing Therapy for PTSD

- Adapting selected components of cognitive processing therapy for PTSD (Resick et al., 1992)
- Focus:
 - Education about posttraumatic stress;
 - Writing an Impact Statement to help understand how trauma influences beliefs;
 - Identifying maladaptive thoughts about trauma that are linked to emotional distress;
 - Decreasing avoidance and increasing resilient coping.

Cognitive Triad of Traumatic Stress



SAMHSA, 2014

Resources and Referrals for Additional Services

- Staff can familiarize themselves with the variety of services available in their region.
- Time-limited, focused interventions can still lead to significant reduction in symptoms.
 - Among PLWH, a 4-session guided written emotional disclosure protocol led to improvements in depression, posttraumatic stress, and bodily symptoms (Ironson et al., 2013).
- For resource-limited areas, SAMHSA's website lists hotlines, referral options, tools for online treatment, and support services on trauma-informed care:
 - Website: www.samhsa.gov/nctic

Promoting Resilience in Trauma-Informed Care

Resilience: This term refers to the ability to bounce back or rise above adversity as an individual, family, community, or provider. Well beyond individual characteristics of hardiness, resilience includes the process of using available resources to negotiate hardship and/or the consequences of adverse events.

SAMHSA, 2014

Promoting Resilience through Strengths-Oriented Questions

Potential strengths-oriented questions include:

- The history that you provided suggests that you've accomplished a great deal since the trauma.
- What are some of the accomplishments that give you the most pride?
- What would you say are your strengths?
- How do you manage your stress today?
- What behaviors have helped you survive your traumatic experiences (during and afterward)?
- What are some of the creative ways that you deal with painful feelings?
- You have survived trauma. What characteristics have helped you manage these experiences and the challenges that they have created in your life?
- If we were to ask someone in your life, who knew your history and experience with trauma, to name two positive characteristics that help you survive, what would they be?
- What coping tools have you learned from your _____ (fill in: cultural history, spiritual practices, athletic pursuits, etc.)?
- Imagine for a moment that a group of people are standing behind you showing you support in some way. Who would be standing there? It doesn't matter how briefly or when they showed up in your life, or whether or not they are currently in your life or alive.
- How do you gain support today? (Possible answers include family, friends, activities, coaches, counselors, other supports, etc.)
- What does recovery look like for you?

SAMHSA, 2014

Promoting Resilience in Trauma-Informed Care

Resilience: Cultural, Racial, and Ethnic Characteristics

The following list highlights characteristics that often nurture resilience among individuals from diverse cultural, racial, and ethnic groups:

- Strong kinship bonds
- Respect for elders and the importance of extended family
- Spirituality and religious practices (e.g., shrine visitations or the use of traditional healers)
- Value in friendships and warm personal relationships
- Expression of humor and creativity
- Instilling a sense of history, heritage, and historical traditions
- Community orientation, activities, and socialization
- Strong work ethic
- Philosophies and beliefs about life, suffering, and perseverance

"Fortune owes its existence to misfortune, and misfortune is hidden in fortune."

-Lao-Tzu teaching, Taoism (Wong & Wong, 2006)

SAMHSA, 2014

Recruiting Social Supports

- Identifying and involving family and other social supports is important during treatment plan implementation for PLWH who have trauma histories.
- For serodiscordant couples, individual treatment of trauma may not be as successful as strategies that include both the HIV-positive person and their significant other (Jones et al, 2013).
- Friends and family can be helpful in detecting problems early and often function as advocates for PLWH seeking services (Brezing and Freudenreich, 2015).

THANK YOU!

Alex S. Keuroghlian, MD MPH

The National Center for Innovation in HIV Care 1340 Boylston Street, 8th Floor Boston, MA 02215 <u>Phone:</u> (617) 927-6354 <u>Email:</u> nationalhivcenter@fenwayhealth.org

- Brezing C and Freudenreich O: The Syndemic Illness of HIV and Trauma: Implications for a Trauma-Informed Model of Care. Psychosomatics 2015; 56: 107-118.
- Fields EL, Bogart LM, Galvan FH, Wagner GJ, Klein DJ, Schuster MA: Association of discrimination-related trauma with sexual risk among HIVpositive African American men who have sex with men. Am J Public Health 2013; 103 (5):875–880
- Glover DA, Williams JK, Kisler KA: Using novel methods to examine stress among HIV-positive African American men who have sex with men and women. J Behav Med 2013; 36(3):283–294
- Hatzenbuehler ML: How does sexual minority stigma "get under the skin"? A psychological mediation framework. Psychological bulletin. 2009; 135(5):707-730.
- Jones DL, Kashy D, Villar-Loubet OM, Cook R, Weiss SM: The impact of substance use, sexual trauma, and intimate partner violence on sexual risk intervention outcomes in couples: a randomized trial. Ann Behav Med 2013; 45(3):318–328

- Kalichman SC, Sikkema KJ, DiFonzo K, Luke W, Austin J: Emotional adjustment in survivors of sexual assault living with HIV-AIDS. J Trauma Stress 2002; 15(4):289–296
- Kamen C, Bergstrom J, Koopman C, Lee S, Gore-Felton C: Relationships among childhood trauma, posttraumatic stress disorder, and dissociation in men living with HIV/ AIDS. J Trauma Dissociation 2012a; 13(1):102–114
- Kamen C, Flores S, Taniguchi S, et al: Sexual minority status and trauma symptom severity in men living with HIV/ AIDS. J Behav Med 2012b; 35(1):38–46
- Kamen C, Etter D, Flores S, Sharp S, Lee S, Gore-Felton C: Sexual risk behaviors by relationship type and trauma history among HIV-positive men who have sex with men. Arch Sex Behav 2013; 42(2):257–265
- Keuroghlian AS, Kamen CS, Neri E, Lee S, Liu R, Gore- Felton C: Trauma, dissociation, and antiretroviral adher- ence among persons living with HIV/AIDS. J Psychiatr Res 2011; 45(7):942–948

- Institute of Medicine (US). Committee on Treatment of Posttraumatic Stress Disorder. Treatment of posttraumatic stress disorder: An assessment of the evidence. National Academies Press, 2008.
- Ironson G, O'Cleirigh C, Leserman J, et al: Gender-specific effects of an augmented written emotional disclosure intervention on posttraumatic, depressive, and HIV- disease-related outcomes: a randomized, controlled trial. J Consult Clin Psychol 2013; 81(2):284–298
- Israelski DM, Prentiss DE, Lubega S, et al: Psychiatric co-morbidity in vulnerable populations receiving primary care for HIV/AIDS. AIDS Care 2007; 19(2):220–225
- Machtinger EL, Wilson TC, Haberer JE, Weiss DS: Psychological trauma and PTSD in HIV-positive women: a meta-analysis. AIDS Behav 2012a; 16(8):2091–2100
- 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 2012b; 16 (8):2160–2170

- McCauley, Jenna L., et al. "Posttraumatic stress disorder and co-occurring substance use disorders: Advances in assessment and treatment." Clinical Psychology: Science and Practice 19.3 (2012): 283-304
- McEwen BS, Seeman T: Protective and damaging effects of mediators of stress. Elaborating and testing the concepts of allostasis and allostatic load. Ann N Y Acad Sci 1999; 896:30–47
- McGovern MP, et al. A randomized controlled trial of treatments for co-occurring substance use disorders and post-traumatic stress disorder. Addiction 2015; 110 (7): 1194-1204.
- Meade CS, Hansen NB, Kochman A, Sikkema KJ: Utilization of medical treatments and adherence to antiretroviral therapy among HIV-positive adults with histories of childhood sexual abuse. AIDS Patient Care STDS 2009; 23(4):259–266
- O'Cleirigh C, Traeger L, Mayer KH, Magidson JF, Safren SA: Anxiety specific pathways to HIV sexual transmission risk behavior among young gay and bisexual men. J Gay Lesbian Ment Health 2013; 17(3):314–326

- Pence BW, Reif S, Whetten K, et al: Minorities, the poor, and survivors of abuse: HIV-infected patients in the US deep South. South Med J 2007; 100(11):1114–1122
- Pence BW, Mugavero MJ, Carter TJ, et al: Childhood trauma and health outcomes in HIV-infected patients: an exploration of causal pathways. J Acquir Immune Defic Syndr 2012; 59(4):409–416
- Puffer ES, Kochman A, Hansen NB, Sikkema KJ: An evidence-based group coping intervention for women living with HIV and history of childhood sexual abuse. Int J Group Psychother 2011; 61(1):98–126
- Roberts NP, et al. Psychological interventions for post-traumatic stress disorder and comorbid substance use disorder: a systematic review and meta-analysis. Clinical psychology review. 2015; 38: 25-38.
- Resick, PA and Schnicke MK. Cognitive processing therapy for sexual assault victims. Journal of consulting and clinical psychology 1992; 60(5):748-756.

- Safren SA, Otto MW, Worth JL, Salomon E, Johnson W, Mayer K, Boswell S. Two strategies to increase adherence to HIV antiretroviral medication: lifesteps and medication monitoring. Behaviour research and therapy. 2001; 39(10):1151-1162.
- SAMHSA. A Treatment Improvement Protocol: Trauma-Informed Care in Behavioral Health Services. 2014. Available at: <u>https://store.samhsa.gov/product/TIP-57-Trauma-Informed-Care-in-Behavioral-Health-Services/SMA14-4816</u> (last accessed May 24th, 2017)
- Seedat S: Interventions to improve psychological function- ing and health outcomes of HIV-infected individuals with a history of trauma or PTSD. Curr HIV/AIDS Rep 2012; 9(4):344–350
- Singer M, Clair S: Syndemics and public health: recon- ceptualizing disease in bio-social context. Med Anthropol Q 2003; 17(4):423–441
- Villar-Loubet OM, Illa L, Echenique M, et al: Prenatal and mental health care among trauma-exposed, HIV-infected, pregnant women in the United States. J Assoc Nurses AIDS Care 2014; 25(1 Suppl):S50–S61

- Whetten K, Leserman J, Lowe K, et al: Prevalence of childhood sexual abuse and physical trauma in an HIVpositive sample from the deep south. Am J Public Health 2006; 96(6):1028–1030
- Whetten K, Shirey K, Pence BW, et al: Trauma history and depression predict incomplete adherence to antiretroviral therapies in a low income country. PLoS One 2013; 8(10): e74771
- 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