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Melissa Zeligman
University of Central Florida

Taewon Kim
University of Central Florida

Jamian Coleman
University of Tennessee-Knoxville

Moneta Sinclair
Positive Impact Health Centers

Rico Curtis-Davidson
Positive Impact Health Centers

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Melissa Zeligman
University of Central Florida

Taewon Kim
University of Central Florida

Jamian Coleman
University of Tennessee-Knoxville

Moneta Sinclair
Positive Impact Health Centers

Rico Curtis-Davidson
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Human immunodeficiency virus (HIV) has claimed over 740,000 lives in the United States since the 1980s, and further brought a host of mental health concerns, including posttraumatic stress disorder (PTSD), primarily brought on by the discrimination and stigma felt by people living with HIV (PLWHA). Social connectedness may serve as a buffer to the trauma often felt by PLWHA. However, rejection and discrimination can limit access to this needed support, especially for sexual minorities living with HIV. The present study (N = 396) examined relationships between social connectedness, trauma symptoms, and sexual orientation for PLWHA. Results showed that social connectedness was a significant predictor of trauma symptoms within the sample, while sexual orientation did not hold a significant relationship with these symptoms. Clinical implications for professional counselors are discussed.

Keywords: HIV, social connectedness, trauma, PTSD, sexuality

Corresponding Author
Melissa Zeligman University of Central Florida 12494 University Boulevard Orlando, Fl. 32816 E: melissa.zeligman@ucf.edu

Human immunodeficiency virus (HIV) is a virus that attacks individuals' immune systems and, if left untreated, can lead to acquired immunodeficiency syndrome (AIDS) (Centers for Disease Control and Prevention; CDC, 2022). According to UNAIDS (2023), over 38 million individuals have reported living with HIV, and more than 1.5 million people were newly diagnosed with the virus in 2021. Further, about 40 million people worldwide have lost their lives because of HIV/AIDS-associated reasons, with 650,000 individuals dying from HIV-related causes in 2021 alone (World Health Organization; WHO, 2023). Despite advances in HIV prevention, the virus continues to disproportionately impact vulnerable groups, such as sexual minorities (El-Sadr et al., 2021). The ongoing stigma of HIV and social determinants of health (e.g., homophobia, racism, income inequality, education disparities) are central to high transmission rates within sexual minority communities (Pantalone et al., 2020), with men who have sex with men (MSM) having the highest total rate of HIV infection (CDC, 2018). In addition to the loss of life and infection rates, however, the HIV/AIDS epidemic has also brought a plethora

of unprecedented socioeconomic and mental-health problems since its initial outbreak (National Institute of Mental Health; NIH, 2022), including posttraumatic stress disorder (Tang et al., 2020)

HIV and Trauma

According to the American Psychiatric Association's (APA, 2013) Diagnostic and Statistical Manual of Mental Disorders - Fifth Edition (DSM-5), posttraumatic stress disorder (PTSD) falls under trauma and stressor-related disorders. A diagnosis of PTSD assumes exposure to a traumatic or stressful event, such as violent or accidental/threatened death, actual/threatened serious injury, or sexual violence (APA, 2013). PLWHA are particularly vulnerable to PTSD, when compared to seronegative individuals, as they are at greater risk of being victims of violent crimes such as abuse and assault (Leserman et al., 2005), may view their diagnosis as a traumatic event (Arebo et al., 2022), and continue to experience significant stigma and discrimination (Rzeszutek et al., 2021). High rates of PTSD within HIV positive communities are noted in the research as well (i.e., McLean & Fitzgerald, 2016; Stanford et al., 2023; Tang et al., 2020), with rates ranging from 28-64%, which is significantly higher than among the general American population (e.g., 8.5% of women and 3.4% of men; McLean et al., 2011).

The relationship between PTSD and HIV is so connected that it has even been referred to as a syndemic illness (Brezing et al., 2015), as PTSD not only relates to the quality of life for those with HIV (Seedat, 2012) but also often plays a role in acquiring HIV (Tsuyuki et al., 2019). The synergistic

relationship between HIV and PTSD can further be contributed to through traumatic experiences of HIV disclosure, stigma, discrimination, deaths of peers, personal physical illness, family conflict, chronic stress, and poverty concerns- including food insecurity (Enane et al., 2021; Watson et al., 2019). Last, although HIV is seen as a chronic, manageable illness, the initial shock of diagnosis still often brings emotional distress (Amos, 2015; Kamen et al., 2016), suggesting even a diagnosis itself can be seen as a traumatic event (Sherr et al., 2011; Zeligman, 2018). This relationship between PTSD and HIV is then further exacerbated by the connections between HIV and sexual identity. Like the statistics on PLWHA, sexual minorities are also more likely than their heterosexual peers to experience sexual violence (Paquette et al., 2021), childhood trauma (McCabe et al., 2020), and PTSD symptoms (Solomon et al., 2019). Acknowledging the prevalence of trauma seen within PLWHA, social connection may serve as a buffer against trauma symptoms for PLWHA (Anderson et al., 2019).

Trauma and Social Connectedness

Social connectedness represents an individual's internal sense of belonging to their social environment and is one of the significant conditions interconnected with psychological distress (Lee et al., 2001). Individuals with solid social support tend to undergo fewer physical and psychological issues and even represent lessened mortality rates compared to those with less social support (Pasinringi et al., 2022; Suchy-Dacey et al., 2022). A series of research shows that having social support can function as a protective factor to prevent various psychological symptoms, including those associated with PTSD (Hébert et al., 2014; Okati-Aliabad et al., 2021), and in turn, a lack of social support can aggravate the severity of PTSD symptoms (Simon et al., 2019). Likewise, PLWHA who report insufficient social support have more possibilities of psychiatric disorder than those with good social support (Adewuya et al., 2007). The importance of social connection is particularly relevant for PLWHA, as they sometimes face the risk of rejection by family members, peers, or romantic partners, due to disclosing their diagnosis, therefore threatening existing systems of support (Dessalegn et al., 2019; Mao et al., 2017).

Social Connectedness and Sexual Orientation

In addition to social connection being beneficial for PLWHA, receiving social support is also critical in enhancing the psychological and physiological well-being of sexual minorities (Frost et al., 2016). Social connectedness plays a distinctly critical role in sexual minority communities in that it can help combat various social stressors originating from the stigma and prejudice often felt within these groups (Frost et al., 2022). This is consistent with minority stress theory (Meyer, 2003), which suggests lesbian, gay, or bisexual (LGB) individuals have unique stressors as a result of discrimination, rejection, and managing one's identity, and therefore, need community support in order to cope with this stress (Frost & Meyer, 2012). While social connection is encouraged for sexual minorities, negative and discriminatory beliefs against LGB individuals can limit access to social support, and

decrease support provided from family (CDC, 2016). Further, when it comes to sexual minority groups, not all LGB community members have comparable levels of support available to them (Barrett & Pollack, 2005). Specifically, Bisexual individuals often face unique barriers to support as they regularly report discrimination experiences, based on their identity, from both heterosexual and gay communities (Roberts et al., 2015). To this point, more than 70% of gay men and lesbians reported significant individuals in their lives knowing their sexual orientation, whereas less than 30% of bisexual individuals reported this same thing (Movement Advancement Project, 2016). Likewise, when compared to gay youth, 10% fewer bisexual youth reported having an adult individual with whom they could emotionally rely on for support (Human Rights Campaign, 2014).

Despite how crucial social connectedness is in protecting against trauma symptoms, no recent research has analyzed the relationship between social connection and PTSD in PLWHAs. Further, although several studies have addressed the effects of social support on sexual minorities, this research is predominantly done outside the context of PTSD and HIV. Therefore, the present study aimed to broaden understanding of the roles social connectedness and sexual orientation play on trauma symptoms of individuals living with HIV/AIDS. We used the following research questions to guide our work: (a) Do social connectedness and sexual orientation predict trauma symptoms in PLWHA? and (b) Does sexual orientation moderate the relationship between social connectedness and trauma symptoms in PLWHA?

Method

Procedure

The data used for this study emerged from a community-based HIV agency's Substance Abuse and Mental Health Services Administration (SAMHSA) grant project seeking to integrate HIV prevention and medical care into mental health and substance abuse treatment programs for racial and ethnic minority populations at high risk for behavioral health disorders and HIV. The project participants were recruited through the agency's HIV prevention program (e.g., HIV testing center), peer counselors and treatment navigators at various outreach programs, and referral sources linked to other local HIV/AIDS organizations and primary care sites. Once members of the target population were identified, screenings occurred to determine if they met the criteria for the project and were appropriate to receive services. Participants were made aware of the opportunity to participate in the study and given informed consent to review.

Participation in the study provided participants with fully funded behavioral health services within the agency, including psychiatry services, mental health services, and substance use treatment. After consenting to participate in the study and enrolling in behavioral health services, direct services providers trained by the project's evaluator collected their National Outcome Measures (NOMs) data (i.e., mental health functioning, current and past substance use, HIV testing, HIV positivity, viral hepatitis status, linkage to HIV/hepatitis

medical care, retention in medical care, housing status, and demographics) using paper and pencil questionnaires. Participation in the project included agreeing to complete the NOMs at baseline, reassessment intervals every six months while in treatment, and discharge. Agency staff entered data into SAMHSA's data tracking system, and the external evaluator ensured the accuracy and timeliness of data entry.

Participants

Our final sample ($N = 396$) had a mean participant age of 38.26 (range = 18-70, $SD = 10.91$). Cisgender men made up 82.8% of the sample ($n = 328$), cisgender women made up 10.9% of the sample ($n = 43$), transgender individuals made up 6.1% of the sample ($n = 24$), and one individual (0.2%) chose not to respond to this item. The sample predominantly identified as Black (76.8%, $n = 304$), followed by White (19.9%, $n = 79$), Hispanic/Latinx (6.1%, $n = 24$), American Indian (3.8%, $n = 15$), Asian/Asian American (1.3%, $n = 5$), and Native Hawaiian/Pacific Islander (1.3%, $n = 5$). Some participants identified as more than one racial or ethnic identity, so these numbers add to greater than the total sample size. When exploring sexual orientation, 57.4% ($n = 225$) of the sample identified as gay or lesbian, 24.2% ($n = 95$) identified as heterosexual, 18.1% ($n = 71$) identified as bisexual, 0.3% ($n = 1$) identified as something other than the options provided, and 1% ($n = 4$) chose not to specify. Each of the clients who participated also identified as living with HIV.

Measures

The current research used data collected as part of a more extensive data set consisting of SAMHSA's NOMs. This measure was created with the purpose of improving the quality of care for clients and assessing client outcomes. The NOMs collects client self-report data from eight domains, including: demographic data, functioning (e.g., emotional and physical health), military history, violence and trauma, housing stability, education and employment, crime and criminal justice status, and social connectedness (SAMHSA, 2021). From this data set, the researchers utilized data, specifically pulling from social connectedness, trauma and violence, and demographic data, including sexual orientation. In addition, this data set was pulled from a program that also used FUSE funding (i.e., funding aimed at integrating mental health services into HIV primary care and prevention settings), and therefore also contained data on clients' HIV status, use of antiretroviral therapies, and viral load.

Social Connectedness

The Perception of Social Connectedness scale measures an individual's level of social connection in relationships and consists of 4 items using a five-point Likert response (i.e., 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly). Items on the scale include: (a) I am happy with the friendships I have, (b) I have people with whom I can do enjoyable things, (c) I feel I belong in my community, and (d) In a crisis, I would have the support I need from family or friends. Within the present sample, items on this scale showed strong reliability with an alpha of .97.

Trauma Symptoms

The Primary-Care PTSD screen (PC-PTSD; Prins et al., 2003) is a 4-item survey with a yes/no format for briefly assessing symptoms of PTSD. The scale prompts clients to respond if they have experienced a series of symptoms (i.e., nightmares, trying hard not to think about or avoiding situations, constantly on guard, watchful, or easily startled, and feeling numb or detached from others, activities, or surroundings) in the past month, following an experience that was "frightening, horrible, or upsetting" (Prins et al., 2003). The four items represent elements of PTSD (i.e., re-experiencing, avoidance, hyperarousal, and numbing), and are meant to quickly assess PTSD symptomology and diagnosis in busy primary care facilities (Prins et al., 2003). The scale has been validated (i.e., convergent validity) through comparisons to longer PTSD assessments, such as the Posttraumatic Stress Disorder Checklist-Civilian Version (PCL-C; Weather et al., 1993), and identified similar numbers of high-risk clients, with a specificity of 93.4% (Hanley et al., 2013). The scale showed strong reliability within the present sample, with items on the scale having an alpha of .90.

Results

Preliminary Analyses

Prior to running any analyses, the assumptions of normality, homoscedasticity, and linearity were reviewed. When looking at normality, skewness and kurtosis levels were within a range of -2 and 2, so normality was assumed (George & Mallery, 2010). Further, no Mahalanobis distance values were statistically significant, thus no evidence of outliers. Given the above results, all cases were retained. Linearity was assumed through checking the residuals scatterplots. Last, the results of the non-constant error variance test provided evidence of homoscedasticity, $x^2=1.01$, $df = 1$, $p = .10223$. In terms of missing data, only .5% of data were missing, so these values were replaced with the series mean (Parent, 2013).

Descriptive statistics for the main variables were also run, and the results can be seen in Table 1.

Table 1

Descriptive Statistics for Main Variables

	Trauma		Social Connectedness	
	M	SD	M	SD
Total Sample	2.10	1.62	12.89	3.69
Heterosexual	1.95	1.68	13.34	3.24
Gay/Lesbian	2.06	1.58	12.70	3.81
Bisexual	2.41	1.65	12.90	3.84

The sample had a mean trauma symptom score of 2.10 (range = 0-4, $SD = 1.62$), and a mean social connection score of 12.89 (range = 4-20, $SD = 3.69$). Bisexual individuals in the sample reported the greatest level of trauma symptoms ($M = 2.41$, $SD = 1.65$), followed by those who were gay or lesbian ($M = 2.06$, $SD = 1.58$), and those who were heterosexual ($M = 1.94$, $SD = 1.68$). Heterosexual participants also showed the greatest level of social connection ($M = 13.34$, $SD = 3.24$), followed by bisexual participants ($M = 12.90$, $SD = 3.84$), and then gay or lesbian participants reporting the least social connection ($M =$

12.70, SD = 3.81). Last, social connection and trauma symptoms showed a significant inverse relationship, $r = -.17$, $p < .001$.

Research Questions

To answer the first research question (i.e., do social connectedness and sexual orientation predict trauma symptoms in PLWHA?), a multiple linear regression analysis was conducted with trauma symptoms as the dependent variable, and social connectedness and a dummy coded sexual orientation variable as the predictor variables. Results of the linear regression suggested that a small proportion of the total variation in trauma symptoms was predicted by social connectedness (i.e., R^2 indicated that 2.8% of the variation in trauma scores was predicted by social connectedness), but that sexual orientation did not significantly contribute to the model. In other words, social connectedness was a predictor of trauma symptoms for the PLWHA in the sample, $F(1, 394) = 11.47$, $p < .001$, but sexual orientation was not a significant predictor ($p > .05$) of trauma within the sample. The effect size (Cohen's f^2) was .028, indicating a small effect size (Cohen, 1988).

In answering the second research question (i.e., does sexual orientation moderate the relationship between social connectedness and trauma symptoms in PLWHA?), the authors used the PROCESS macro for SPSS (Hayes, 2012) to run a simple moderation analysis. While the model was once again significant (R^2 change = .04, $F(5, 385) = 3.14$, $p = .01$), none of the dummy coded sexual orientation moderators were significant within the model. Further, confidence intervals for these moderators contained 0, once again confirming a lack of significant interaction effect (Hayes, 2013).

Discussion

The syndemic pathways between HIV and trauma leave PLWHA at greater risk of trauma and stressors (Brezing et al., 2015; Lesserman et al., 2005). Given the disproportionate impact HIV continues to have on sexual minorities (El-Sadr et al., 2019), these communities are then even more susceptible to the trauma symptomology that can come with an HIV diagnosis. The results from the present study reinforce these findings, as sexual minority individuals within the sample reported greater levels of trauma symptoms. This finding is further consistent with minority stress theory (Meyer, 2003), which posits that gay and lesbian individuals face increased experiences of distress, often coming from experiences of rejection or discrimination. For sexual minorities in the present sample, discrimination and rejection may have been experienced in response to two of their identities, both sexual orientation and HIV status. Most notably, bisexual participants within the sample reported the greatest amount of trauma symptoms. Previous research has cited that bisexual individuals are specifically at heightened risk for mental health diagnoses and substance use disorders (Feinstein & Dyar, 2017), potentially due to the impact of biphobia, or antibisexual discrimination (Arnett et al., 2019).

Similarly, sexual minorities within the sample reported less social connection than their heterosexual peers. This finding is consistent with previous research looking at

sexual minorities outside of the context of HIV, which also suggests that sexual minorities may have less social support than heterosexual individuals. This finding is particularly important when considered through a minority stress lens, which recommends that sexual minority individuals need significant social support to manage experiences of discrimination and stigma (Frost & Meyer, 2012). Although sexual minorities within the sample endorsed greater trauma symptoms than non-sexual minorities living with HIV, sexual orientation was not significantly predictive of these trauma symptoms. In contrast, social connectedness was a significant predictor of trauma symptoms within the sample of PLWHA.

The significant inverse relationship between social connectedness and trauma symptoms within the sample parallels results of previous studies, which conclude that adequate social connection is crucial in coping with trauma and distress (Anderson et al., 2019). The relationship between social connection and trauma symptoms has been typically reported in samples not necessarily living with HIV (e.g., Kaniasty, 2020; Lee, 2019), but the present findings suggest that this relationship extends to PLWHA as well. Social connectedness served as a significant predictor of trauma symptoms, but sexual orientation did not moderate the relationship between these two variables. In other words, the relationship between social connectedness and trauma symptoms, for the current sample, did not differ based on the sexual identities of the participants. The authors considered that sexual orientation might play a moderating role here due to differences in support for sexual minorities (CDC, 2016), as well as the critical role of social support in combatting trauma and distress and enhancing psychological well-being (Meyer et al., 2008), however, a moderating relationship was not found.

Clinical Implications

Perhaps the most significant implication for counselors from this study is the importance of social support when coping with trauma symptoms for PLWHA. Noting that social connectedness significantly, and negatively, predicted trauma symptoms within the sample, and that barriers to building support may be present for those living with HIV, counselors have an opportunity to encourage and support clients with HIV in building their support networks. This support may come in the form of a strong therapeutic relationship with a counselor, which, for PLWHA, can help to mitigate the effects of limited support while clients develop their own support network (Penn et al., 2019). A strong therapeutic alliance will in turn be essential for sexual minority clients, as they may come into counseling already holding some apprehension or fear (Pachankis et al., 2008). In an attempt to prioritize the therapeutic relationship with clients with HIV, many of whom may also identify as sexual minorities, counselors should focus on making their practice affirming and collaborative (Pachankis & Goldfried, 2004). Some practical ways clinicians can make their work more inclusive and affirming for PLWHA and sexual identities include expanding one's knowledge of HIV, including language and treatments, using clients' correct names and pronouns, and advocating for

clients where appropriate. Clinicians may also work to come from a place of cultural humility to ensure their spaces are safe and welcoming for all clients.

In addition to adding client support through the therapeutic relationship, counselors also have an opportunity to facilitate and encourage support and connection outside of individual counseling. Offering group counseling may allow clients living with HIV to find support through connection with others. Similarly, including peer support within a counseling practice, particularly if primarily working with PLWHA, can bring benefits of connection and belongingness and the potential for increased client retention (Berg et al., 2021). Last, due to experiences of stigma and discrimination, some clients living with HIV may feel more comfortable seeking support online. Online communities and platforms, such as POZ community forums, Therapy Tribe, the Positive Peers App, the Well Project, and numerous social media groups, can provide virtual opportunities for connection to others within the safety and privacy of one's own home. COVID-19 also provided numerous lessons in delivering care in virtual spaces, showcasing that virtual approaches could assist with expanded access to care, reduced stigma for clients, and increased treatment adherence and attendance (see Patel et al., 2022 for examples of virtual platforms).

Although sexual orientation did not significantly predict trauma symptoms for PLWHA within the sample or serve as a moderator between social connectedness and trauma symptoms, group differences within the sample may provide information that can inform how we work with these clients. For instance, sexual minorities within the sample reported greater trauma symptoms and less social connection when compared to heterosexual participants within the sample. Consistent with a minority stress perspective, clinicians should be mindful of intersecting identities that may bring discrimination and distress (e.g., HIV status and sexual identity), and recognize the potential for cumulative distress that comes from carrying multiple marginalized identities. Everyone within our sample had at least one marginalized identity (HIV status), and those that were also sexual minorities seemed to be particularly susceptible to trauma symptoms and challenges gathering support. These findings highlight the need for a holistic and intersectional approach to care, where counselors consider clients' identities in conjunction with their experiences.

Limitations and Directions for Future Research

Although the results of this study are meaningful, as they explore relationships between social connectedness, trauma symptoms, and sexual orientation for PLWHA, the sample was collected solely from one HIV mental health agency in the southern United States, and therefore is not representative of all individuals living with HIV. Future studies would benefit from exploring a more geographically diverse sample in order to obtain more generalizability. This research also utilized a cross-sectional, correlational research design, so although relationships can be found, causation cannot be inferred. This data was also collected as part of a greater data

set for the purposes of a grant program, therefore, the possibility to explore these variables in other ways was not available. Moving forward, looking at social connectedness or trauma symptoms with other scales that measure these constructs in more nuanced ways (i.e., feelings of belonging, perceived versus actual support, changes in worldview, types of traumas experienced, etc.) may be beneficial. Finally, this data was collected prior to significant changes in legislation and political climates (e.g., anti-trans or LGBT bills), which likely impact many sexual minority clients nationwide. Updating this work in the wake of ongoing political oppression would be worth exploring.

Conclusion

In summary, the results of this study demonstrate a clear connection between social connectedness and trauma symptoms for PLWHA. The significant and negative relationship between these two variables suggests that strong support is connected to healing post-trauma, and vice versa; a lack of support has a relationship with increased trauma symptoms. Further, the moderation analysis within the study demonstrates that these relationships are present regardless of the sexual orientation of the client. These results emphasize the vital role counselors hold in encouraging and providing support for clients living with HIV, as this support could be helpful in combatting negative symptomology following trauma.

References

- Adewuya, A. O., Afolabi, M. O., Ola, B. A., Ogundele, O. A., Ajibare, A. O., & Oladipo, B. F. (2007). Psychiatric disorders among the HIV-positive population in Nigeria: A control study. *Journal of Psychosomatic Research*, 63(2), 203-203. <https://doi.org/10.1016/j.jpsychores.2007.03.006>
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). <https://doi.org/10.1176/appi.books.9780890425596>
- Amos, I. (2015). What is known about the post-traumatic growth experiences among people diagnosed with HIV/AIDS? A systematic review and thematic synthesis of the qualitative literature. *Counselling Psychology Review*, 30(3), 47-56
- Anderson, J. D., Li, X., Qiao, S., Zhou, Y., & Shen, Z. (2019). The mediating effects of functions of social support on HIV-related trauma and health-related quality of life for PLHIV in China. *AIDS Care*, 32(6), 673-680. <https://doi.org/10.1080/09540121.2019.1622633>
- Arebo, B., Ewach, G. F., Omara, J., Oyella, P., Aciro Lucky, R., & Kabunga, A. (2022). Post-traumatic stress disorder and coping strategies among people with HIV in Lira District, Uganda: A cross-sectional study. *HIV/AIDS Research and Palliative Care*, 2022(14), 255-264. <https://doi.org/10.2147/HIV.S358575>
- Arnett, J. E., Frantell, K. A., Miles, J. R., & Fry, K. M. (2019). Anti-bisexual discrimination as insidious trauma and impacts on mental and physical health. *Psychology of Sexual Orientation and Gender Diversity*, 6(4), 475-485. <http://doi.org/10.1037/sgd0000344>

- Barrett, D. C., & Pollack, L. M. (2005). Whose gay community? Social class, sexual self-expression, and gay community involvement. *The Sociological Quarterly*, 46(3), 437-456. <https://doi.org/10.1111/j.8525.2005.00021.x>
- Berg, R. C., Page, S., & Øgård-Repål, A. (2021). The effectiveness of peer-support for people living with HIV: A systematic review and meta-analysis. *PLoS ONE*, 16(6), e0252623. <https://doi.org/10.1371/journal.pone.0252623>
- Brezing, C., Ferrara, M., & Freudenreich, O. (2015). The syndemic illness of HIV and trauma Implications for a trauma-informed model of care. *Psychosomatics*, 57, 107-118.
- Centers for Disease Control and Prevention. (2016). Gay and Bisexual Men's Health: Stigma and Discrimination. <https://www.cdc.gov/msmhealth/stigma-and-discrimination.htm>
- Centers for Disease Control and Prevention. (2018). Estimated HIV Incidence and Prevalence in the U.S., 2010–2015: HIV Surveillance Supplemental Report 2018. <http://www.cdc.gov/hiv/library/reports/hiv-surveillance.html>
- Centers for Disease Control and Prevention. (2022). About HIV. <https://www.cdc.gov/hiv/basics/whatishiv.html>
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Lawrence Erlbaum Associates, Publishers.
- Dessalegn, N. G., Hailemichael, R. G., Shewa-amare, A., Sawleshwarkar, S., Lodebo, B., Amberbir, A. & Hillman, R. J. (2019). HIV disclosure: HIV-positive status disclosure to sexual partners among individuals receiving HIV care in Addis Ababa, Ethiopia. *PLOS ONE*, 14(2), e0211967. <https://doi.org/10.1371/journal.pone.0211967>
- El-Sadr, W. M. (2021). Beyond the magic bullet: What will it take to end the AIDS epidemic? *HIV/AIDS and Our World*, 111(7), 1234-1236. <https://doi.org/10.2105/AJPH.2021.306290>
- Enane, L. A., Apondi, E., Omollo, M., Toromo, J. J., Bakari, S., Aluoch, J., Morris, C., Kantor, R., Braitstein, P., Fortenberry, J. D., Nyandiko, W. M., Wools-Kaloustian, K., Elul, B., & Vreeman, R. C. (2021). "I just keep quiet about it and act as if everything is alright"- The cascade from trauma to disengagement among adolescents living with HIV in western Kenya. *Journal of International AIDS Society*, 24, e25695. <https://doi.org/10.1002/jia2.25696>
- Feinstein, B. A., & Dyar, C. (2017). Bisexuality, minority stress, and health. *Current Sexual Health Reports*, 9, 42–49. <http://doi.org/10.1007/s11930-017-0096-3>
- Frost, D. M., & Meyer, I. H. (2012). Measuring community connectedness among diverse sexual minority populations. *Journal of Sex Research*, 49(1), 36–49. <http://doi.org/10.1080/00224499.2011.565427>
- Frost, D. M., Meyer, I. H., Lin, A., Wilson, B. D. M., Lightfoot, M., Russell, S. T., & Hammack, P. L. (2022). Social change and the health of sexual minority individuals: Do the effects of minority stress and community connectedness vary by age cohort? *Archives of Sexual Behavior*, 51, 2299-2316. <https://doi.org/10.1007/s10508-022-02288-6>
- Frost, D. M., Meyer, I. H., & Schwartz, S. (2016). Social support networks among diverse sexual minority populations. *American Journal of Orthopsychiatry*, 86(1), 91-102. <https://doi.org/10.1037/ort0000117>
- George, D., & Mallery, M. (2010) *SPSS for Windows Step by Step: A Simple Guide and Reference, 17.0 Update, 10th Edition*. Pearson.
- Hanley, J., deRoon-Cassini, T., & Brasel, K. (2013). Efficiency of a four-item posttraumatic stress disorder screen in trauma patients. *Journal of Trauma and Acute Care Surgery*, 75(4), 722-727. <https://doi.org/10.1097/TA.0b013e3182a53a5f>
- Hayes, A. F. (2012). PROCESS: A versatile computational tool for observed variable mediation, moderation, and conditional process modeling [White paper]. <http://www.afhayes.com/public/process2012.pdf>
- Hébert, M., Lavoie, F., & Blais, M. (2014). Post traumatic stress disorder/PTSD in adolescent victims of sexual abuse: Resilience and social support as protection factors. *Ciência & Saúde Coletiva*, 19(3), 685-694. <https://doi.org/10.1590/1413-81232014193.15972013>
- Human Rights Campaign Foundation. (2014). Supporting and caring for bisexual youth. https://assets2.hrc.org/files/assets/resources/Supporting_and_Caring_for_Bisexual_Youth.pdf?_ga=2.50094566.1184556854.1677877890-159444297.1677877890
- Kamen, C., Vorasarun, C., Canning, T., Kienitz, E., Weiss, C., Flores, S., Etter, D., Lee, S., & Gore-Felton, C. (2016). The impact of stigma and social support on development of posttraumatic growth among persons living with HIV. *Journal of Clinical Psychology in Medical Settings*, 23(2), 126–134.
- Kaniasty, K. (2019). Social support, interpersonal, and community dynamics following disasters caused by natural hazards. *Current Opinion in Psychology*, 32, 105-109. <https://doi.org/10.1016/j.copsych.2019.07.026>
- Lee, J-S. (2019). Perceived social support functions as a resilience in buffering the impact of trauma exposure on PTSD symptoms via intrusive rumination and entrapment in firefighters. *PLoS ONE*, 14(8), e0220454. <https://doi.org/10.1371/journal.pone.0220454>
- Lee, R. M., Draper, M., & Lee, S. (2001). Social connectedness, dysfunctional interpersonal behaviors, and psychological distress: Testing a mediator model. *Journal of Counseling Psychology*, 48(3), 310-318. <https://doi.org/10.1037/0022-0167.48.3.310>
- Leserman, J., Whetten, K., Lowe, K., Stangl, D., Swartz, M., Thielman, N. (2005). How trauma, recent stressful events, and PTSD affect functioning health status and health utilization in HIV-infected patients in the south. *Psychosomatic Medicine*, 67(3), 500-507. <https://doi.org/10.1097/01.psy.0000160459.78182.d9>
- Mao, Y., Li, X., Qiao, S., Zhao, Q., Zhou, Y., & Shen, Z. (2017). Social support, stigma, and HIV disclosure among

- parents living with HIV in Guangxi, China. *AIDS Care*, 30(2), 168-172. <https://doi.org/10.1080/09540121.2017.1387639>
- McCabe, S. E., Hughes, T. L., West, B. T., Evans-Polce, R. J., Veliz, P. T., Dickinson, K., McCabe, V. V., & Boyd, C. J. (2020). Sexual orientation, adverse childhood experiences, and comorbid DSM-% substance use and mental health disorders. *The Journal of Clinical Psychiatry*, 81(6), e1-e9. <https://doi.org/10.4088/JCP.20m13291>
- McLean, C. P., Asnaani, A., Litz, B. T., & Hoffman, S. G. (2011). Gender differences in anxiety disorders: Prevalence, course of illness, comorbidity and burden of illness. *Journal of Psychiatric Research*, 45(8), 1027-1035. <https://doi.org/10.1016/j.jpsychires.2011.03.006>
- McLean, C., & Fitzgerald, H. E. (2016). Treating posttraumatic stress symptoms among people living with HIV: A critical review of intervention trials. *Current Psychiatry Reports*, 18(83), 1-9. <https://doi.org/10.1007/s11920-016-0724-z>
- Meyer, I. H. (2003). Prejudice, social stress, and mental health in lesbian, gay, and bisexual populations: Conceptual issues and research evidence. *Psychological Bulletin*, 129, 674-697. <https://doi.org/10.1037/0033-2909.129.5.674>
- Movement Advancement Project. (2016). Invisible majority: The disparities facing bisexual people and how to remedy them. <https://www.lgbtmap.org/policy-and-issue-analysis/invisible-majority>
- National Institute of Mental Health (2022). HIV and AIDS and Mental Health. <https://www.nimh.nih.gov/health/topics/hiv-aids>
- Okati-Aliabad, H., Ansari-Moghadam, A., Mohammadi, M., Kargar, S., & Shahraki-Sanavi, F. (2021). The prevalence of anxiety and depression and its association with coping strategies, supportive care needs, and social support among women with breast cancer. *Supportive Care in Cancer*, 30, 703-710. <https://doi.org/10.1037/0033-2909.129.5.674>
- Pachankis, J. E., & Goldfried, M. R. (2004). Clinical issues in working with lesbian, gay, and bisexual clients. *Psychotherapy: Theory, Research, Practice, Training*, 41(3), 227. <https://doi.org/10.1037/0033-3204.41.3.227>
- Pachankis, J. E., Goldfried, M. R., & Ramrattan, M. E. (2008). Extension of the rejection sensitivity construct to the interpersonal functioning of gay men. *Journal of Consulting and Clinical Psychology*, 76(2), 306-317. <https://doi.org/10.1037/0022-006X.76.2.306>
- Pantalone, D. W., Nelson, K. M., Batchelder, A. W., Chiu, C., Gunn, H. A., & Horvath, K. J. (2020). A systematic review and meta-analysis of combination behavioral interventions co-targeting psychosocial syndemics and HIV-related health behaviors for sexual minority men. *The Journal of Sex Research*, 57(6), 681-708. <https://doi.org/10.1080/00224499.2020.1728514>
- Paquette, G., Martin-Storey, A., Bergeron, M., Dion, J., Daigneault, I., Hébert, M., Ricci, S., & Castonguay-Khounsombath, S. (2021). Trauma symptoms resulting from sexual violence among undergraduate students: Differences across gender and sexual minority status. *Journal of Interpersonal Violence*, 36(17-18), NP9226-NP9251. <https://doi.org/10.1177/0886260519853398>
- Parent, M. C. (2013). Handling item-level missing data: Simpler is just as good. *The Counseling Psychologist*, 41(4), 568-600. <https://doi.org/10.1177/0011000012445176>
- Pasinringi, M. A. A., Vanessa, A. A., & Sandy, G. (2022). The relationship between social support and mental health degrees in emerging adulthood of students. *Social Science and Education*, 2(1), 12-23. <https://doi.org/10.52970/grsse.v2i1.162>
- Patel, P., Kerzner, M., Reed, J. B., Sullivan, P. S., El-Sadr, W. M. (2022). Public health implications of adapting HIV pre-exposure prophylaxis programs for virtual service delivery in the context of the COVID-19 pandemic: *Systemic Review. Public Health and Surveillance*, 8(6), e37479. <https://doi.org/10.2196/37479>
- Penn, T. M., Trost, Z., Parker, R., Wagner, W. P., Owens, M. A., Gonzalez, C. E., White, D. M., Merlin, J. S., & Goodin, B. R. (2019). Social support buffers the negative influence of perceived injustice on pain interference in people living with HIV and chronic pain. *Pain Reports*, 4(2), e710. <https://doi.org/10.1097/PR9.0000000000000710>
- Prins, A., Ouimette, P., Kimerling, R., Cameron, R. P., Hugelshofer, D. S., Shaw-Hegwer, J., Thraikill, A., Gusman, F. D., & Sheikh, J. I. (2003). The primary care PTSD screen (PC-PTSD): Development and operating characteristics. *Primary Care Psychiatry*, 9(1), 9-14. <https://doi.org/10.1185/135525703125002380>
- Roberts, T. S., Horne, S. G., & Hoyt, W. T. (2015). Between a gay and a straight place: Bisexual individuals' experiences with monosexism. *Journal of Bisexuality*, 15(4), 554-569. <https://doi.org/10.1080/15299716.2015.1111183>
- Rzeszutek, M., Gruszczyńska, E., Pięta, M., & Malinowska, P. (2021). HIV/AIDS stigma and psychological well-being after 40 years of HIV/AIDS: A systematic review and meta-analysis. *European Journal of Psychotraumatology*, 12, 1990527. <https://doi.org/10.1080/20008198.2021.1990527>
- Seedat, S. (2012). Interventions to improve psychological functioning and health outcomes of HIV-infected individuals with a history of trauma or PTSD. *Behavioral Aspects of HIV Management*, 9, 344-350. <http://doi.org/10.1007/s11904-012-0139-3>
- Sherr, L., Nagra, N., Kulubya, G., Catalan, J., Clucas, C., & Harding, R. (2011). HIV-infection associated post-traumatic stress disorder and post-traumatic growth- A systematic review. *Psychology, Health, & Medicine*, 16(5), 612-629. <https://doi.org/10.1080/13548506.2011.579991>
- Simon, N., Roberts, N. P., Lewis, C. E., van Gelderen, M. J., & Bisson, J. I. (2019). Associations between perceived social support, posttraumatic stress disorder (PTSD) and complex PTSD (CPTSD): Implications for treatment. *European Journal of Psychotraumatology*, 10(1), 1573129. <https://doi.org/10.1080/20008198.2019.1573129>

- Solomon, D. T., Combs, E. M., Allen, K., Roles, S., DiCarlo, S., Reed, O., & Klaver, S. J. (2019). The impact of minority stress and gender identity on PTSD outcomes in sexual minority survivors of interpersonal trauma. *Psychology & Sexuality, 12*(1-2), 64-78.
<https://doi.org/10.1080/19419899.2019.1690033>
- Stanford, K. A., Eller, D., Schmitt, J., McNulty, M., Spiegel, T. (2023). High rate of HIV among trauma patients participating in routine emergency department screening. *AIDS and Behavior, 27*, 3669-3677.
<https://doi.org/10.1007/s10461-023-04083-3>
- Substance Abuse and Mental Health Services Administration, (SAMHSA). (2021, November). National outcome measures (NOMs) client-level measures for discretionary programs providing direct services tool for adult programs. SAMHSA's performance accountability and reporting system. <https://spars.samhsa.gov/sites/default/files/2022-02/CMHSNOMSAAdultToolNovember2021.pdf>
- Suchy-Dicey, A., Eyiutoyo, H., O'Leary, M., Cole, S. A., Traore, A., Verney, S., Howard, B., Manson, S., Buchwald, D., Whitney, P. (2022). Psychological and social support associations with mortality and cardiovascular disease in middle-aged American Indians: the strong heart study. *Social Psychiatry and Psychiatric Epidemiology, 57*, 1421-1433. <https://doi.org/10.1007/s00127-022-02237-7>
- Tang, C., Goldsamt, L., Meng, J., Xiao, X., Zhang, L., Williams, A. B., Wang, H. (2020). Global estimates of the prevalence of post-traumatic stress disorder among adults living with HIV: A systematic review and meta-analysis. *BMJ Open, 10*, e032435. <https://doi.org/10.1136/bmjopen-2019-032435>
- Tsuyuki, K., Cimino, A. N., Holliday, C. N., Campbell, J. C., Al-Alusi, N. A., & Stockman, J. K. (2019). Physiological changes from violence-induced stress and trauma enhance HIV susceptibility among women. *Behavioral Bio-Medical Interface, 16*, 57-65. <https://doi.org/10.1007/s11904-019-00435-8>
- UNAIDS (2023). Global HIV & AIDS Statistics- Fact Sheet. <https://www.unaids.org/en/resources/fact-sheet>
- Watson, C. W. M., Sundermann, E. E., Hussain, M. A., Umlauf, A., Thmes, A. D., Moore, R. C., Letendre, S. L., Jeste, D. V., Morgan, E. E., Moore, D. J. (2019). Effects of trauma, economic hardship, and stress on neurocognition and everyday function in HIV. *Health Psychology, 38*(1), 1-30. <https://doi.org/10.1037/hea0000688>
- Weather, F. W., Litz, B., Herman, D., Juska, J., & Keane, T. (1993). PTSD Checklist- Civilian Version (PCL-C) [Database record]. *APA PsychTests*. <https://doi.org/10.1037/t02622-000>
- World Health Organization (2023). The Global Health Observatory: HIV. <https://www.who.int/data/gho/data/themes/hiv-aids#cms>
- Zeligman, M. (2018). Medical trauma: Assessing trauma and growth following an HIV diagnosis. *Journal of Humanistic Counseling, 57*(1), 14-30.