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Rumination Influences the Relationship Between Trauma and Depression Over Time among Youth Living With HIV

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Abstract

Background: Traumatizing events often result in long-term mental health symptoms. Identifying the features of the post-trauma experiences that can impact mental health symptoms is key to designing effective interventions.

Methods: Youth living with HIV (YLH),¹ predominantly sexual and gender minorities (SGM;² 84% gay, bisexual, transgender, queer, pansexual identities), 78% Black and Latino, (N=170) were recruited in New Orleans, LA and Los Angeles, CA from 13 youth-serving agencies. They were assessed for trauma, rumination and depression, with 78% reassessed for depression at 4 and 74%

¹Youth living with HIV: YLH

²Sexual and gender minorities: SGM (which includes gay, bisexual, transgender, queer, pansexual identities)

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Author statement

Contributors

E. M Arnold contributed to this research and the writing of the manuscript. M. M. Yalch and J. Christodoulou conducted the data analyses and were involved in the writing of this manuscript. D. Murphy contributed to this research and the writing of the manuscript. D. Swendeman contributed to this research and the review and editing of this manuscript. Mary Jane Rotheram-Borus contributed to this research and the writing of the manuscript. All authors have approved the final article.

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at 8 months later. Relationships between these variables were examined using a Bayesian approach to structural equation modeling.

Results: At recruitment, 78% of YLH reported at least one traumatic event, and 21% met the cut-off score indicating depression on the PHQ-9. Ruminations were reported by 41% of YLH. While associations between trauma and depression were modest ($r_{\text{mean}} = .19$), ruminations were moderately associated with depressive symptoms over time ($r_{\text{mean}} = .34$). Ruminations were only modestly associated with trauma ($r_{\text{mean}} = .19$) but had a robust negative association ($\lambda_{\text{STD}} = -.29$) with the slope of depressive symptoms such that the more ruminations YLH experienced, the smaller the decline in depression over time. The associations between trauma and depression were more modest ($\lambda_{\text{STD}} = .12$).

Limitations: The main limitations of this study are the lack of a scale to measure trauma and the use of a single item measure of rumination.

Conclusion: Ruminations appear to be associated with traumatic events for a large subset of young people, suggesting that future interventions should consider including components addressing ruminations.

Keywords

Youth; HIV; trauma; depression; rumination

Introduction

In the United States, youth living with HIV (YLH) aged 12–24 years old are over-represented among newly infected persons (Centers for Disease Control and Prevention, 2022). While 13% of the U.S. population is aged 15–24, YLH represent 21% of the newly infected cases of HIV annually – 65% higher than expected (Centers for Disease Control and Prevention, 2022). In addition, YLH are highly likely to be racial, ethnic, and/or sexual and gender minority (SGM) youth--that is, 78% are African American or Latino/x young men, and 92% are young men who identify as gay, bisexual, transgender, queer, or pan-sexual (Centers for Disease Control and Prevention, 2022). This reflects a population who are at risk for many other stressors associated with their status as SGM youth (Newcomb et al., 2020).

YLH are also those least likely to achieve viral suppression (Harris et al., 2019; Kahana et al., 2016), which can have negative impacts on both their own health and increasing the chances of transmitting HIV (Gant et al., 2017). Viral suppression and each factor linked to poor viral suppression (non-adherence to antiretroviral therapies [ART], unprotected sexual risk acts, and substance abuse) are also consistently linked to mental health symptoms and disorders (Benton et al., 2019; Pence, 2009). In turn, mental health symptoms are often associated with traumas (Lindsey and Xiao, 2019), especially among young people who are SGM (Newcomb et al., 2020).

Traumatic events can lead to thoughts or ruminations about the event. Specifically, rumination involves a type of perseverative thinking that involves repeated and unproductive dwelling on an event (Moulds et al., 2020; Nolen-Hoeksema et al., 2008). The definitions,

assessment, and conceptualization of rumination can vary substantially across studies, but review of the models suggests that rumination may be a stable characteristic that can impact one's ability to use more adaptive coping strategies (Smith and Alloy, 2009). One of the seminal studies on this topic suggests that some individuals may tend to have a more ruminative general response style, and overall level of depression prior to a stressful event may impact one's symptoms after a traumatic event, particularly for those who tend to ruminate (Nolen-Hoeksema and Morrow, 1991). Rumination can have negative, debilitating impacts on the well-being of persons living with HIV, particularly when combined with stress (Gruszczynska and Rzeszutek, 2020). For example, among persons living with HIV with mental health disorders, "thinking too much" is a factor related to rumination that can negatively impact adherence to ART (Kidia et al., 2015).

Although the role of rumination on increasing depressive symptoms is well known, research has also indicated that rumination is associated with higher distress in the aftermath of trauma in particular (Ehring et al., 2008; Moulds et al., 2020). This distress includes symptoms of depression, which are also associated with trauma among young people (Kim et al., 2017). Namely, in stressful situations among persons living with HIV, greater specificity of memories about past events is associated with increased rumination, which leads to increases in depressive symptoms over time (Yanes et al., 2012). Depression and trauma are also both common among SGM YLH. SGM status is associated with stigma and discrimination based on sexual orientation and gender identity, which may be elevated among racial and ethnic minority youth, (Parker et al., 2018). These factors may increase the likelihood of depression, and indeed YLH have high levels of depression compared to non-HIV infected peers (Abebe et al., 2019). SGM status is commonly associated with ejection from one's home, substance abuse, and incarceration, all of which puts SGM youth at risk for trauma, as indicated by higher likelihood of being a victim of interpersonal violence (Dank et al., 2014; Newcomb et al., 2020; Ream and Forge, 2014).

Given the link between mental health symptoms and poor physical health outcomes, it is critical to identify factors associated with mental health symptoms that can be targeted to improve the long-term well-being and adherence to healthy daily routines among YLH. In particular, adherence to anti-retroviral treatment is a critical component of managing HIV. Among persons living with HIV, depression can impact medication adherence, particularly for youth (Amico et al., 2021; Smith Fawzi et al., 2016) and for those who do not have someone to remind them to take their medication (Holloway et al., 2017).

This study examines how ruminations, a key symptom of exposure to traumatic events, are related to YLH's depression and trauma. Although previous research suggests that rumination may mediate the association between the experience of traumatic events, and both average levels and the trajectory of depressive symptoms, this has not yet been examined among YLH.

Method

Study Design, Setting, Recruitment and Inclusion Criteria

For this study, YLH (N=170) ages 12–24 were recruited from 13 homeless shelters, clinics, and community-based organizations serving SGM youth, as well as from social media and dating apps, in Los Angeles, CA, and New Orleans, LA from May 2017 to May 2020. Youth had to test seropositive for HIV on a rapid test and confirmed by PCR test prior to enrollment; all youth were referred for clinical services if not linked to care. All youth had established HIV infection (Stage 5 on the Fieberg scale) and ART treatment experience. YLH were excluded if they were < 12 years or > 24 years old, were unable to understand the study procedures due to intoxication or cognitive difficulties observed by an interviewer or if a staff member at the recruitment site evaluated that it was not in the youth's best interest to participate.

All study procedures were approved by the IRB of the UCLA (IRB#16-001372; [ClinicalTrials.gov NCT03109431](https://clinicaltrials.gov/ct2/show/study/NCT03109431)), which served as the IRB for all recruitment sites, and by the Adolescent HIV Medicine Trials Network Scientific Monitoring Board. The IRB waived parental consent for this study based on two issues. First, the majority of participants were SGM and had not disclosed their sexual orientation/identity to their parents. Disclosure of serostatus placed youth in danger of ejection from the home or other consequences. Second, we expected that a large number of youth would be homeless and, in California, were then emancipated minors.

There was a two-step inclusion process: first, a screening questionnaire was administered; and second, for those meeting inclusion criteria, a baseline assessment was conducted. Older youth (aged 15–24 years) provided oral consent for the study screening, and younger youth (aged 12–14 years) provided written consent for the screening to ensure that they understood the screening process. After the screening, all eligible youth aged 12–24 years provided written informed consent. The overall clinical trial aimed to improve viral suppression (primary outcome) among YLH with established HIV infection (Arnold et al., 2019). All youth in the study received a text messaging intervention, and some participants received additional interventions based on viral load over time (Arnold et al., 2019). However, we note that there no differences between treatment conditions in terms of trauma, rumination, or levels of depression at any time point for this analysis.

Assessments—Trained and certified assessors, typically young adults of similar ethnic and SGM backgrounds with a B.A. degree, administered a 1–2-hour interview that covered the following topics:

Sociodemographic characteristics: At baseline, we collected data on recruitment site, race, ethnicity, education level achieved, age, sex at birth, gender identity, sexual orientation, and time since HIV diagnosis.

Trauma: YLH reported whether they had ever experienced (1) or not (0), each of the following traumas over their lifetime: 1) been forced or frightened by someone into unwanted sexual acts; 2) had someone use force or threats to attack or rob them; 3) saw

someone seriously injured or killed; 4) had a close friend or family member who was murdered; and 5) engaged in oral, anal or vaginal sex with someone who was 5 years older when they were under the age of 16 years old.

Ruminating Thoughts.: We measured posttraumatic rumination using a single item: “Over the past 2 weeks, how often have you thought about something bad that has happened to you or that you saw, over and over again, and you cannot stop yourself from thinking about it?” Participants rated this item on a 4-point scale ranging from “Never” to “Repeatedly.”

Depressive Symptoms.: We measured depressive symptoms using the 9-item *Patient Health Questionnaire* (PHQ-9), a checklist of the nine diagnostic symptoms of a major depressive episode (Kroenke et al., 2001). Examples of items include “feeling down, depressed, or hopeless” and “little interest or pleasure in doing things.” Participants rated how often each symptom bothered them over the past two weeks on a 4-point scale ranging from “not at all” to “nearly every day.” Scores 10 and above on the PHQ-9 indicate moderate levels of depression (Kroenke et al., 2001). For this analysis, depression was measured at baseline, 4 and 8 months.

Data Analysis

Data Imputation.—There were few data missing at the baseline assessment (0% for trauma, 1% for rumination, and 2% for depression). However, 22% of data were missing for depression at T1 and 26% at T2. We addressed these missing data (which were missing completely at random; MCAR: $\chi^2 = 22.40$, $p = .32$) using multiple imputation at the level of scales via the *nanjar* and *mice* packages in R (Buuren and Groothuis-Oudshoorn, 2011; Tierney et al., 2021). We used measurements of anxiety (Spitzer et al., 2006) across all three time points as a covariate in the imputation process.

Hypothesis Testing.: We tested our hypotheses using a Bayesian approach to structural equation modeling (BSEM) in which we regressed observed measurements of trauma and posttraumatic rumination on the latent trajectory of depressive symptoms across all three time points (for review of BSEM, see (Depaoli, 2021; van de Schoot et al., 2021). We estimated the latent trajectory of depressive symptoms using latent growth curve modeling (LGCM), in which we constrained loadings of depression at each time point on the latent intercept of depression to 1 and loadings on the latent slope of depression to 0, 1, and 2 for measurements of depression at T0, T1, and T2, respectively (for review of LGCM, see (Hancock et al., 2013).

As with other analyses based on Bayesian statistics, BSEM both provides more accurate estimates of effects relative to conventional approaches to data analysis and is more robust to the analysis of non-normal distributions of data that are common in trauma research (Kruschke, 2013; van de Schoot et al., 2017; Yalch, 2016). In contrast to conventional SEM, BSEM does not rely on comparison with a null model, but rather generates effect estimates using Markov chain Monte Carlo (MCMC) sampling. Also, in contrast to conventional SEM, in BSEM model fit is determined not using metrics based on χ^2 , but on the MCMC sampling used to estimate models (for review of MCMC-based variants of conventional

SEM fit indices, see (Garnier-Villarreal and Jorgensen, 2020). We will use the most common of these, the Bayesian variants of GammaHat ($B\hat{\Gamma}$; values $\geq .95$ suggest good fit) and of McDonald's fit index (BMc; values $\geq .90$ suggest good fit). Because Bayesian statistics do not involve comparisons with a null model, it does not make use of statistical significance as means of determining the viability of effects. We instead quantified effect estimates in terms of the density of MCMC sampling distributions. Using the convention of confidence intervals, we refer to the densest 95% of the distribution of MCMC samples as the highest density interval (HDI; for review, see (Kruschke, 2015).

In this study, we implemented BSEM using the *blavaan* package in R (Merkle and Rosseel, 2015). We estimated each model using three chains of 30,000 iterations of Hamiltonian MCMC sampling each, with burn-in periods of 10,000 samples to safeguard against the inclusion of unlikely samples of parameter values. We evaluated model non-convergence using the potential scale reduction factor diagnostic and through examination of autocorrelation, density, and trace plots. Each model terminated normally with no indication of non-convergence with effective sample sizes $\geq 35,311$ for each parameter estimated.

Results

Characteristics of the sample.

As shown on Table 1, the 170 YLH were enrolled from Los Angeles, CA (58%) and New Orleans, LA (42%) and were a mean of 21.9 years old. Most were male (73%), predominantly gay (61%), bisexual (15%) or other queer identities (17%), and only 17% reported that they were heterosexual. Most were African American (64%) and Latinx (24.7%). Most had completed high school (82%), with about 38% attending some post-high school training or college. About 30% were unemployed and among those working, 16.8% were students. Only about 25% had incomes above the federal poverty cutoff of \$1,063 monthly. Substantial subgroups of YLH had been homeless (37%), incarcerated (20%), attempted suicide (30%), and received substance abuse treatment (28%). Most YLH were virally suppressed (71.6%) and had been diagnosed about 23 months previously (median time since diagnosis). Almost all YLH were on ART (89.1%).

Description of trauma-depression-ruminations.

The majority (78%) of participants reported at least one of the measured traumatic experiences at baseline, with an average of 2.4 (SD= 1.2) traumas. Each traumatic event was endorsed by a substantial subset of YLH - from 27%–45%, depending on the traumatic event. While 4.8% of YLH experienced all five traumatic events, 30.3% had three or four traumas, and 43% had one or two traumas. Concurrently, 41% of YLH reported ruminating about a past traumatic event. About one-fifth (21%) of YLH reported moderate or higher levels of depressive symptoms based on PHQ-9 at the baseline assessment, which decreased somewhat in T1 (18%) and T2 (17%).

Associations between variables over time.

Trauma demonstrated modest correlation, on average, with depressive symptoms across time periods ($r_{\text{mean}} = .19$), whereas rumination demonstrated medium-sized correlation, on

average, with depressive symptoms across time periods ($r_{\text{mean}} = .34$; see Table 2). The correlation between trauma and rumination was also modest in size.

We clarified these findings in the BSEM model in Figure 1, which converged with adequate fit ($B\hat{\Gamma} = .93$, $BMc = .92$). Both trauma and rumination had positive associations with the latent intercept of depressive symptoms, with small ($\lambda_{\text{STD}} = .19$) and large ($\lambda_{\text{STD}} = .61$) effect sizes, respectively. Rumination mediated the association between trauma and depressive symptoms, with trauma having a medium-sized association with posttraumatic rumination ($\lambda_{\text{STD}} = .37$). Rumination had a medium-sized negative association ($\lambda_{\text{STD}} = -.29$) with the slope of depression symptoms such that the higher rumination was, the slower the decline in depressive symptoms tended to be. All other effects in the model had wide HDIs and small effects ($\lambda_{\text{STD}} = .12$).

Discussion

As anticipated, traumatic events, ruminations, and depression were common among YLH in this study. Also consistent with expectations was the mediating effect of rumination on the association between the experience of trauma and both average levels and the trajectory of depressive symptoms. These findings are consistent with other work postulating that rumination is involved in the development and maintenance of depression (e.g., Ehring et al., 2008; Nolen-Hoeksema and Morrow, 1991) as well as with research on other forms of trauma-related distress (e.g., posttraumatic stress disorder; Moulds et al., 2020). Thus, this study adds to the current literature, and does so among a unique and understudied population for these constructs.

In this study, rumination was only modestly related to trauma but more strongly associated with changes in depression over time. It is possible that the traumatic events assessed may not have had captured all possible stressful or traumatic events that contributed to rumination and were associated with depression. For those living with HIV, the diagnosis itself can lead to psychological distress. In fact, in one study of adults living with HIV, about one-third of the sample reported that their diagnosis was a traumatic event in their lives (Nightingale et al., 2010). Additionally, current intrusive cognitive processing (i.e., rumination) was positively correlated with and had direct effects on psychological distress (Nightingale et al., 2010). However, in the current study, we did not collect such data on whether HIV diagnosis was perceived as traumatic event, and thus, it is possible that the event about which participants were ruminating was their HIV diagnosis. The content of rumination is seldom explored in research studies (Smith and Alloy, 2009), thus, future research on YLH should focus more specifically on the content of ruminations to better understand the impacts of these thought patterns on depression and health behaviors such as medication adherence.

These findings have implications for designing or adapting existing interventions. First, given both the main and mediating influence of rumination on depressive symptoms, it is critical that mental health or paraprofessional clinicians address youths' ruminations. Second, there is a strong need for development of effective interventions for assisting youth in dealing with unproductive ruminations. Unfortunately, while there are several

approaches that should be efficacious in terms of intervening to reduce ruminations, such as cognitive-behavioral interventions that target thinking as a means to changing behaviors, there has been a paucity of research on the utilization and evaluation of these types of interventions that have assessed changes in rumination following treatment. Wisco and colleagues (2013), utilizing a sample of motor vehicle accident survivors found that following written exposure therapy, rumination decreased from post-treatment to 3-month follow-up suggesting positive impacts from this type of intervention. Additionally, Sezibera and colleagues (2009) investigated rumination-focused cognitive behavioral therapy in a population of young survivors of the 1994 Rwanda genocide and documented no impact on depressive symptoms at the end of treatment.

Only recently, two published studies have examined ruminations among adults living with HIV. Among adult women, Millon and colleagues' recent pilot study (2022) of mental and physical (MAP) training suggests that intervention that includes both meditation and aerobic exercise components may be an effective treatment for rumination and trauma-related thoughts as well as for depression. In addition, results from a very small uncontrolled open-trial evaluation study of brief behavioral activation treatment for depression and adherence among 10 adults living with HIV found some promising evidence for a one-session intervention that shows promise for positively impacting depression and rumination as well as adherence (Tull et al., 2018). No known studies on this topic have focused on YLH.

The issues surrounding developing effective interventions for rumination are complex. As Ehling et al. (2008) long ago noted, repeatedly thinking about one's problems can be helpful in problem solving and reaching goals, as well as maladaptive in terms of recurrent negative thinking, and more work needs to be done to specify how dysfunctional forms of recurrent thinking can be distinguished from functional ones. While we did not test any of these types of rumination or trauma specific interventions with YLH, our analyses of relationships over time suggest the importance of reducing ruminations in order to reduce the negative impact of traumas and to decrease depression. Given that this was a study of youth, these findings regarding rumination may be unique to this age group of persons living with HIV. Research with an older sample of adults living with HIV (average age 42.8) suggests that older age may be protective against rumination as these individuals may have learned skills that help them manage these cognitions, and thus, other factors may be associated with severity of depression among this group (O'Loughlin et al., 2020).

Although rumination is not a typical target of treatment for depressive symptoms, specifically in the aftermath of trauma, there is precedent for such an intervention. For example, therapy focused on modifying maladaptive cognitions in general has long been a staple of treatment for depression (Beck et al., 1987), and there are also treatments for trauma-related rumination in particular (Ehring et al., 2008; Moulds et al., 2020; Resick et al., 2017). Future research could focus on how best to integrate these approaches into HIV care. Rumination is also problematic in that it keeps people focused on problems and tends to keep them from implementing needed actions, and in particular for those with depressed mood, problem-solving can be negatively impacted by lack of motivation (Nolen-Hoeksema et al., 2008). In this case, YLH with depressive symptoms who engage in rumination related

to a past stressor may lack the motivation to take the medications needed to achieve viral suppression, which is critical to their health. Furthermore, for YLH in particular, it may be useful to target decreasing rumination as well as internalizing stigma while simultaneously increasing positive thinking and emotional expression of feelings (Garrido-Hernansaiz et al., 2017).

Limitations

Despite the contributions of this article to the limited literature on this topic, there are a few limitations of the study to note. First, there is a low alpha in our scale of traumatic events. However, the low alphas make sense for three reasons. First, values of alpha are dependent on the number of items in a scale, with small numbers of items (i.e., fewer than 10) often leading to low alphas. Second, the traumatic events measured were disparate types of events with high face validity and there is little reason to expect them to be correlated with each other (thus yielding a high alpha). Third, our assessment of trauma was dichotomous, which will also attenuate alpha. Dichotomous measurement of trauma also did not permit us to evaluate the frequency of these traumatic events, which is especially important because the cumulative number of traumas tends to be more closely associated with adverse psychological problems over time than isolate trauma exposure (Breslau et al., 1999; Bryant, 2019). A second and more major limitation was that our measure of rumination was a single item specifically related to traumatic (not depressive) rumination; a multi-item inventory of posttraumatic rumination would almost certainly be more reliable and, thus, provide a more precise estimation of effects. In fact, a major shortcoming of the literature on rumination is assessment of the construct (e.g., single item assessment, limiting assessment to trauma-specific rumination as opposed to broadening the assessment to consider rumination not limited to the trauma). Future research on this topic would benefit from a more comprehensive measure, such as the Rumination Response Scale (Nolen-Hoeksema and Morrow, 1991) that might allow for more fully understanding the experience of rumination among this population. While the measures are limited, we are fortunate to have assessments for depression at multiple points over eight months. Being able to monitor these constructs over time allows us to better characterize the precedent and subsequent factors associated with ruminations, enhancing causal inferences.

Conclusion

Overall, this entire area of study—including development and validation of a self-report measure to assess rumination in individuals with exposure to traumatic events, further exploration of the role of rumination in predicting continuing depressive symptomatology, and development of efficacious interventions for rumination—is in need of more examination and ripe for investigative studies. More study in this area tailored especially to YLH is needed, as these vulnerable youth are often exposed to high levels of trauma during childhood and into adolescence that can impact their mental health as well as their medication adherence.

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Highlights

- The majority of youth (78%) had experienced one or more traumatic events
- 41% of youth had ruminations
- Ruminations appear to impact depressive symptoms over time

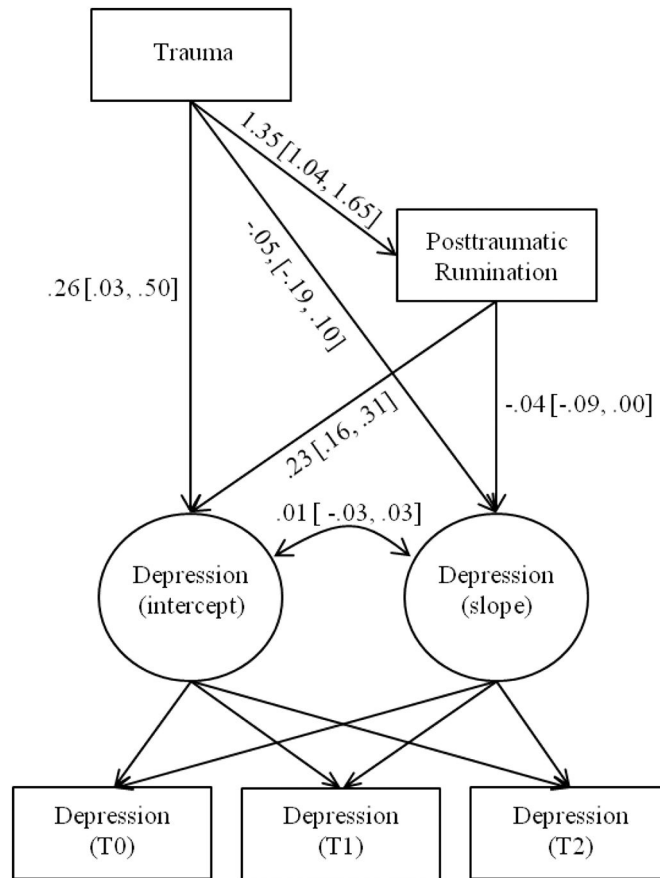


Figure 1. Graphical depiction of the relationships identified in BSEM analyses.
Note. HDIs indicated in brackets; all estimates are unstandardized.

Table 1.

Participant characteristics at the time of recruitment.

	n	%
Demographic variables		
Recruitment site	170	
Los Angeles	72	42.4
New Orleans	98	57.6
Age, Mean, SD	21.9	2.1
Sex assigned at birth (n=165)		
Male	120	72.7
Female	45	27.3
Gender identity		
Cisgender	154	90.6
Transgender	13	7.6
Gender-diverse	3	1.8
Sexual orientation		
Bisexual	26	15.3
Gay/Same Gender Loving/Downe	104	61.2
Heterosexual	28	16.5
Other	12	7.1
Race		
Asian/HPI/NA/AN/Other	39	22.9
Black/African American	109	64.1
White	22	12.9
Hispanic/Latinx	42	24.7
Education (n=113)		
Below high school	20	17.7
High school diploma or equivalent	50	44.2
Some/completed higher education	43	38.1
Employment (n= 167)		
Employed	88	52.7
Student	28	16.8
Unemployed	51	30.5
Income above federal poverty level (\$1063.30/month) (n=169)	47	27.8
Incarceration (lifetime) (n=169)	34	20.1
Ever in substance abuse treatment	14	8.2
HIV		
Taking ARV (n=165)	147	89.1
Virally suppressed (n=67)	48	71.6
Time since HIV diagnosis (months), Median (n=152)	23.2	
Mental Health		
PHQ-9, Mean (SD; n=163)	5.7	5.0

	n	%
Moderate depressive symptoms (PHQ-9)	35	21.5
Posttraumatic Rumination (any), (n=166)	68	41.0
Suicide attempt (lifetime) (n=168)	51	30.4
Suicide attempt (last 4 months) (n=51)	12	23.5
Any psychiatric hospital admissions	31	18.2
Traumatic events		
Child sexual trauma (n=165)	45	27.3
Physical force or threats (n=167)	57	34.1
Witnessed serious injury or death (n=168)	73	43.5
Close person murdered (n=168)	72	42.9
Sex at 16 years with older partner (n=167)	75	44.9
Reported one traumatic event	38	22.6
Reported two traumatic events	36	21.4
Reported three traumatic events	32	19.0
Reported four traumatic events	19	11.3
Reported five traumatic events	8	4.8

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Table 2.

Correlations between study variables and psychometric information.

	1	2	3	4	5
1. Trauma	(.57)				
2. Rumination	.19	—			
3. Depression (T0)	.22	.53	(.82)		
4. Depression (T1)	.20	.16	.42	(.83)	
5. Depression (T2)	.14	.33	.49	.57	(.85)
Minimum	.00	.00	.00	.00	.00
Maximum	1.00	3.00	2.33	2.67	2.33
Mean	.39	.68	.64	.54	.54
<i>SD</i>	.29	.97	.55	.52	.54
Skew	.33	1.31	.91	1.20	1.14
Kurtosis	-.85	.57	.37	1.81	.81
<i>W</i>	.92	.71	.92	.88	.87

Note. *SD* = standard deviation; *W* = Shapiro-Wilk test of normality; all *r*s > .15 and all *W*s are statistically significant at $p < .05$.