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Suicidality among nonadherent patients living with HIV in Buenos Aires, Argentina: prevalence and correlates

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Abstract

Of those in the general population hospitalized for suicidal ideation and suicide attempts in Argentina, many reattempt suicide and are readmitted. However, few studies in Argentina have examined suicidal ideation and suicide-related behaviors among people living with HIV (PLHIV) and none have examined these factors among nonadherent PLHIV, though the prevalence of suicidal ideation in this group may be higher than in the general population and also than in other groups of PLHIV. This study of PLHIV in Buenos Aires, Argentina, examined the correlates of suicidal ideation in nonadherent PLHIV. Nonadherent patients with HIV ($N = 118$) were recruited from two clinics providing outpatient healthcare services to PLHIV in Buenos Aires, Argentina. Participants completed assessments on demographic characteristics, depression and suicidality, stigma, and self-efficacy. Participants were HIV-infected men (51%) and women (49%) with a median age of 40 years (IQR = 11). About half had completed high school or more, two-thirds were employed, and had a mean monthly income of 4196.79 (SD = 3179.64) Argentine pesos (USD\$221). Thirty-three (28% [95% CI 20.3, 37.3]) participants reported suicidal ideation in the past two weeks, and one-third (35.6% [27.1, 44.9]) reported lifetime suicidal ideation. In bivariate analyses, attending a public clinic, being female, younger, unemployed, and experiencing greater stigma and depression were associated with suicidal ideation. In multivariable logistic regression, stigma interacted with the number of years since HIV diagnosis to predict suicidal ideation. The impact of stigma on suicidal ideation decreased with time since HIV diagnosis, suggesting that suicidal ideation may arise following HIV diagnosis due to perception of HIV-related stigma.

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Interventions to reduce perceived stigma during the period following HIV diagnosis may reduce suicidal ideation in this population. Organizational initiatives that explore HIV stigma microaggressions in the healthcare setting may be needed to optimize health outcomes.

Keywords

HIV; suicidal ideation; Argentina; South America

Introduction

Suicidality refers to a person's willingness to die by suicide, suicide-related self-injury, suicidal thoughts, and attempts to commit suicide (Torres et al., 2011). Though rates of suicide among people living with HIV (PLHIV) have declined by 50% since introduction of antiretroviral (ARV) therapy (Keiser et al., 2010), PLHIV are still at greater risk for suicidality in comparison to their HIV-negative counterparts; PLHIV are 3–9 times more likely to die by suicide than those HIV-uninfected (Aldaz et al., 2011; Carrico, 2010). The prevalence of active suicidal ideation ranged from 19% to 35% in the past decade (Carrico et al., 2007; Kalichman, Heckman, Kochman, Sikkema, & Bergholte, 2000) and 3–28% in recent years (Egbe et al., 2017; Liu et al., 2017). The lifetime prevalence of suicidal ideation has ranged from 26% to 68% (Badiie et al., 2012), and suicide attempts from 2% to 25% (Badiie et al., 2012; Egbe et al., 2017; Gebremariam, Reta, Nasir, & Amdie, 2017). Suicidal ideation among PLHIV is associated with age, male gender, time since HIV diagnosis, illness-related symptoms and HIV stage severity, ARV side effects, intimate partner violence, nonadherence to ARVs, depression, and perceived HIV stigma (Ammassari et al., 2004; Carrico et al., 2007; Cooperman & Simoni, 2005; Kalichman et al., 2000; Keiser et al., 2010; Liu et al., 2017; Rodriguez, Cook, Peltzer, & Jones, 2016). Internationally, 60% of those who transition from suicidal ideation to attempt will do so within the first year of onset of suicidal ideation (Nock et al., 2008).

Suicides have shown an increasing trend in Argentina (Quinlan-Davidson, Sanhueza, Espinosa, Escamilla-Cejudo, & Maddaleno, 2014; Bella et al., 2013); the prevalence of suicide among men is nearly three-fold compared to women (Quinlan-Davidson et al., 2014). In Argentina, suicides comprise 9% of deaths by unnatural causes, 27% of emergency department visits are related to suicidal ideation and attempts, and within six months, 22% reattempt and 34% are readmitted (Arie, 2002; Serfaty, Foglia, Masaútis, & Negri, 2002; Teti et al., 2013). Suicide notes in Argentina have linked suicide to illness, pain, loneliness, disability, depression and isolation (Matusevich, 2002). Suicidal ideation and attempts often co-occur with mood disorders, e.g., depression (38%) (Teti et al., 2013); risk factors for suicidal ideation include older age, female gender, chronic disease (Matusevich, Finkelsztejn, & Dabi, 2002), and alcohol use (Pierobon, Barak, Hazrati, & Jacobsen, 2013). Recently, transgender people in Argentina were found to have a high prevalence (33%) of suicide attempts, which has been associated with HIV status, stigma, healthcare provider discrimination, and violence against transgender people (Marshall et al., 2016).

Although an elevated risk of suicidality has been reported among PLHIV in the US (Carrico et al., 2007), and HIV has been identified as a risk factor for suicidality in Argentina among gender minorities (Marshall et al., 2016), little research has identified factors associated with suicidality among PLHIV in Argentina, and none have addressed this question among nonadherent PLHIV, a group that may be at a particularly greater risk of suicidality. Because robust associations have been reported between nonadherence and depression, and nonadherence and suicidal ideation (Ammassari et al., 2004; Gonzalez, Batchelder, Psaros, & Safren, 2011), nonadherent PLHIV may have a greater risk for suicidality, suggesting a need to identify factors associated with suicidality to inform prevention and intervention programs in HIV treatment, including interventions aimed at enhancing engagement, adherence to ARVs, and retention in care, as well as managing suicidal risk within this specific context. It was theorized that results obtained would fill an important clinical gap and would provide guidance for suicide prevention in the context of HIV treatment and care in the Argentine context.

Method

Data from this study was obtained at baseline from a longitudinal adherence intervention study, Conexiones Positivas en la Argentina; data was collected from October 2012 to October 2014. Prior to study related activities, ethical approval was obtained from the Institutional Review Board and Ethical Review Committees in the US and Argentina sites.

Clinics and participants

Participants ($N=118$) were recruited from two clinics providing outpatient HIV healthcare services to PLHIV in Buenos Aires, Argentina. One clinic was housed in a large public hospital serving over 4000 patients and the other was a private non-governmental organization serving >3500 patients. Study personnel identified study candidates using clinic records or provider referral; eligible participants were patients who were at least 18 years old, not engaged in care, defined as nonadherent to ARVs or those with a detectable viral load (See also Jones et al., 2015, for additional details on the study). As previously described, “challenging” patients were selected as nonadherence to HIV care has unparalleled implications for patients’ health, but also because of the increased potential for transmission of HIV, which represents a major public health concern and barrier to HIV prevention in Argentina, despite universal access to healthcare and antiretrovirals since 1994 (Jones et al., 2015). Candidates agreeing to participate provided informed consent and were assessed in Spanish by licensed psychologists. Assessments were administered in private locations within the clinic sites.

Measures

Study measures were reviewed and adapted for cultural congruency by the US and Argentine teams in collaboration with patients and providers. All measures were translated, reviewed and back-translated for accuracy (Jones, Sued, et al., 2016).

Demographics

Age, ethnicity, education, employment, income, residence, marital/current partner status, access to care as well as alcohol and substance use were assessed.

Depression and suicidality

The Beck Depression Inventory–II (BDI–II; Beck, Steer, & Brown, 1996), which has been validated in Argentina (Bonicatto, Dew, & Soria, 1998), was used to measure current symptoms of depression ($\alpha = 0.82$). The suicidal ideation (item 9) item was excluded from the depression subscale scores to prevent overestimating the effect of depression on suicidality by including a suicidal ideation item in the total depression score. Responses of “I would like to kill myself” and “I would kill myself if I had the chance” indicated active suicidal ideation, the primary outcome of the study. Using a structured clinical interview, participants were also asked about (1) *ever* experiencing suicidal ideation, (2) attempting suicide in the past month, or (3) ever attempting suicide; all were asked dichotomously. Study psychologists conducted a risk assessment of participants endorsing active suicidal ideation, and referred patients for additional outpatient treatment and/or hospitalization, as needed.

Stigma

HIV-related stigma was assessed using the HIV/AIDS stigma instrument-PLWA (HASI-P) (Holzemer et al., 2007), as in previous research in Argentina (Radusky, Zalazar, Arístegui, Sued, & Mikulic, 2017). A total score was used due to high correlations between subscales and to prevent multicollinearity ($\alpha = 0.71$).

Self-efficacy

Self-efficacy measured using a 12-item questionnaire on which participants rated their ability to engage in a behavior on a scale of 0 (*I am unable*) to 10 (*absolutely certain I am able*) (Johnson et al., 2007), as in previous research in Argentina (Raykov's $\rho = 0.90$) (Jones et al., 2016).

Viral load and CD4 count

Viral load and CD4 count were obtained from clinic patient records.

Statistical analyses

Univariate statistics were used to describe demographic and psychosocial variables. T tests, Mann Whitney U tests, and chi squares were used to compare suicidal versus nonsuicidal participants. Variables associated with suicidal ideation at $p < 0.10$ on bivariate analyses were included in a multivariable logistic regression model. Then, a 2-way interaction was tested; hierarchical logistic regression was performed with and without the interaction to test whether the model with the interaction was significantly better than the model without an interaction. A cutoff of $p < 0.05$ level was used as the threshold for significance. Statistical Package for the Social Sciences (SPSS) v22 was used for all analyses.

Results

Sociodemographic characteristics of participants

Participants ($N = 118$) were HIV-infected men (51%) and women (49%) with a median age of 40 years ($IQR = 11$). About half had completed high school or more, and two-thirds were employed, with a mean monthly income of 4196.79 ($SD = 3179.64$) Argentine pesos (USD \$221). Further detail is presented in Table 1.

Prevalence of lifetime and recent suicidal ideation and attempts

Thirty-three (28.0% [95% CI 20.3, 37.3]) participants reported suicidal ideation in the past two weeks, and 35.6% [27.1, 44.9] reported lifetime suicidal ideation. Two participants (1.7% [1.2, 4.2]) reported suicide attempts in the past month, and 19.5% [12.7, 27.1] reported lifetime suicide attempts. Lifetime suicide attempts were more prevalent in the public clinic participants (66.7% versus 33.3%; $p = 0.032$).

Multivariable associations with suicidal ideation

In multivariable logistic regression, only stigma remained associated with suicidal ideation after controlling for demographic variables and self-efficacy ($p = 0.010$); years since diagnosis with HIV approached significance ($p = 0.070$). For every one-unit increase in stigma, the odds of being suicidal increased by 19%.

Once the final model was developed, an interaction between perceived HIV stigma and time since HIV diagnosis was tested using hierarchical linear regression. A significant interaction between stigma and time since HIV diagnosis emerged ($p = 0.030$). That is, the odds of stigma being associated with suicidal ideation decreased as participants reported more number of years since HIV diagnosis, after controlling for demographic variables and self-efficacy. The model with an interaction more significantly explained suicidal ideation ($p = 0.004$). As such, the higher-order effects model was retained (see Table 2).

Discussion

This study in Buenos Aires, Argentina, aimed to identify the correlates of suicidal ideation and to assess the prevalence of suicidal ideation and attempts among nonadherent PLHIV. Results indicated that suicidal ideation was primarily associated with HIV stigma. However, the effect of stigma on suicidal ideation decreased with increasing years since HIV diagnosis.

The prevalence of suicidal ideation in this group of nonadherent patients living with HIV was 28%, which is in the upper range of rates reported in past decade among PLHIV (3–28%; Egbe et al., 2017; Liu et al., 2017). The prevalence of 2% in suicide attempts in the past month was similarly high compared to 2–25% of lifetime suicide attempts previously among PLHIV (Badiee et al., 2012; Egbe et al., 2017; Gebremariam et al., 2017). Although this study did not compare nonadherent to adherent patients, these findings suggest that nonadherent patients may be at increased risk of suicidal ideation and attempts compared to other PLHIV. Given the fast-paced environment of primary and HIV care, brief screening tools and interventions to manage suicidal risk and develop safety plans should be evaluated

in future research (Stanley & Brown, 2012) and clinical care. The greater prevalence of suicidal ideation and attempts in this group compared to previous research may be accounted for by the overlapping risk of suicidal ideation and depression, as depression has been linked to nonadherence in previous research (Gonzalez et al., 2011).

Stigma and temporal continuity with HIV diagnosis have been associated with suicidal ideation (Carrico et al., 2007; Rodriguez et al., 2016). The moderating effect of time since HIV diagnosis on stigma and suicidal ideation may be explained by existing theories of suicidality. The interpersonal-psychological theory of suicide proposes that suicidal ideation emerges from experiencing feelings of not belonging combined with feelings of being a burden on others – *thwarted belongingness* and *perceived burdensomeness* (Joiner, 2005; Van Orden et al., 2010). Consistent with this theory, newly diagnosed PLHIV in this study may have experienced thwarted belongingness and perceived burdensomeness following diagnosis of HIV. Fear of discrimination, challenges with building trust, and being judged upon intentional or accidental disclosure of HIV status, may prevent PLHIV from establishing relationships that may serve as sources of support (Audet et al., 2013). Post-diagnosis responses may also include a sense of “losing the self”, confusion regarding treatment, death, and stigma, which may be intensified by inadequate support from providers (Anderson et al., 2010). However, with time, post-diagnosis distress may dissipate, as indicated by the moderating effect of time since HIV diagnosis on stigma and suicidal ideation. Suicidal ideation is often comorbid with depression (Nock, Hwang, Sampson, & Kessler, 2010). Feelings of being unloved, unsupported, or unaccepted may lead to depression, and depression may heighten feelings of thwarted belongingness, illustrating the bidirectional relationship between social support and depression (Jacobson & Newman, 2016). Similarly, as suicidal ideation is a symptom of depression, a bidirectional relationship between stigma and suicidal ideation may exist, and merits longitudinal examination.

The role of stigma in suicidal ideation should be considered in interventions targeting PLHIV if a causal effect of stigma on suicidality can be established. Cross-lagged models should be considered in future studies, as these models may help establish temporal order. Other factors, beyond time since HIV diagnosis, may moderate or mediate the association between suicidality and stigma, and should be explored in future studies. The role of organizational or structural factors in contributing to stigma should also be addressed. As noted, lifetime suicide attempts were more frequent in the public clinic attendees, all of whom received healthcare services in a separate wing of a large, congested public hospital with a great amount of exposure to other HIV-uninfected patients. Separated healthcare services, while originally intended to ensure privacy, have been increasingly regarded as providing evidence to other patients that those attending the clinic are HIV-infected. In contrast, the private clinic system provides healthcare in a clinic in a residential area with minimal signage and little exposure to public foot traffic, reducing the potential of accidental HIV status disclosure and stigma (Audet et al., 2013). In addition, private clinics have greater resources to maximize patient confidentiality, e.g., private cubicles for interviews, and separate waiting areas (Basu et al., 2012). Private clinic attendees may also have access to services that are protective against suicidality, such as therapeutic support, easily accessible staff, more time with physicians, and have been reported to have greater motivation for treatment in previous research (Jones et al., 2015).

Depression poses challenges to every step of the HIV care continuum, including treatment engagement, ARV adherence, and viral suppression (Pence, O'Donnell, & Gaynes, 2012), but suicidal ideation is often neither assessed by providers nor disclosed by patients (Husky, Zablieth, Alvarez Fernandez, & Kovess-Masfety, 2016). Assessment and treatment of both depression and suicidal ideation may optimize treatment outcomes for PLHIV (Bengtson et al., 2016). HIV care providers should receive training to evaluate psychopathology and substance use in clinical practice; preventing, managing, and treating these symptoms of psychopathology may reduce suicidality (Teti et al., 2013). In addition, investigating the associations between depression, suicidal ideation, and nonadherence is an important opportunity to understand the contribution of suicidal ideation and depression to nonadherence. Beyond the health consequences that nonadherence has on patients, providers caring for nonadherent PLHIV may benefit from increased awareness of the high prevalence of suicidal ideation among nonadherent patients compared to other groups of PLHIV. Within the context of living with HIV, nonadherence to ARVs may be a passive method of self-harm, reflecting a reduced motivation for treatment. This may also be an explanation for the high prevalence of suicidality in this sample, and should be explored in other groups of nonadherent PLHIV. Further, suicide prevention strategies may need to be included in interventions aimed at improving adherence and maximizing engagement and retention in this group, as past research has shown that suicidality is linked to nonadherence to HIV treatment (Sherr et al., 2008, 2009). Finally, gender, self-efficacy, relationship status, alcohol and drug use were not predictors of suicidal ideation, in contrast with previous research (Carrico et al., 2007; Keiser et al., 2010). However, these risk factors may not be as relevant in the Argentine context or the sample size may have limited the number of identified associations. Larger studies may enable assessment of other factors associated with suicidal ideation among PLHIV in Argentina.

Limitations

Certain limitations must be considered in light of these findings. Firstly, the small sample size precludes generalizability to other PLHIV populations in Argentina and abroad. Secondly, this study examined a group of nonadherent PLHIV, who may also carry a greater risk for suicidal ideation (Ammassari et al., 2004). The high prevalence of suicidal ideation and attempts in this sample in comparison with previous research could reflect the overlapping risk of suicidal ideation and depression, as depression has been linked to nonadherence in previous research (Gonzalez et al., 2011), and as a result, the study may have selected from a group with a greater prevalence of depression. This also prevented comparisons between adherent and nonadherent patients, limiting the associations identified to nonadherent patients. Future studies should evaluate whether the associations found in this study hold in adherent PLHIV. Thirdly, the cross-sectional design of the study limits the identification of causal pathways. Depression and suicidality are also stigmatized thoughts, feelings, and behaviors, and because an in-person method was used to assess these constructs, the prevalence and reporting of depression and suicidality may have been underestimated in this sample (Niederkröthenthaler, Reidenberg, Till, & Gould, 2014). Lastly, comparisons by lifetime prevalence rates were not made given that these rates did not reflect a period of time during which patients were living with HIV. Therefore, results from such comparisons would not have been generalizable to the context of HIV care. Longitudinal

studies are needed to assess the emergence of suicidal ideation following HIV diagnosis. Similarly, comparisons were not made by suicide attempts in the past month due to the low prevalence of suicide attempts in this sample. Future studies with larger sample sizes and a greater prevalence of suicide attempts in the past month should address this.

Conclusion

Findings from this study suggest that HIV stigma and suicidality remain important challenges to HIV care. Interventions to reduce perceived stigma during the period following HIV diagnosis may help to reduce suicidal ideation or distress. Organizational initiatives that explore HIV microaggressions in the healthcare setting may be needed to optimize health outcomes. Routine assessment of suicidal ideation and depression in the provision of clinical care would undoubtedly enhance treatment outcomes.

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Table 1Demographic and HIV-related characteristics of $N=118$ COPA suicidal vs. non-suicidal participants.

Characteristic	All <i>n</i> (%) Mean (SD)	Groups		<i>Z</i> / <i>t</i> / <i>X</i> ² , <i>p</i>
		Non-Suicidal (<i>n</i> = 85) <i>n</i> (%) Mean (SD)	Suicidal (<i>n</i> = 33) <i>n</i> (%) Mean (SD)	
Site				
Private	58 (49.2%)	47 (55.3%)	11 (33.3%)	
Public	60 (50.8%)	38 (44.7%)	22 (66.7%)	4.59, 0.032
Gender				
Male	59 (50.9%)	48 (57.1%)	11 (34.4%)	
Female	57 (49.1%)	36 (42.9%)	21 (65.6%)	4.81, 0.028
Age	39.89 (8.68)	40.89 (8.63)	37.30 (8.38)	2.05, 0.043
Educational attainment				
Less than high school	57 (48.3%)	38 (44.7%)	19 (57.6%)	
High school or more	61 (51.7%)	47 (55.3%)	14 (42.4%)	1.58, 0.209
Employment status				
Unemployed	44 (37.3%)	25 (29.4%)	19 (57.6%)	
Employed	74 (62.7%)	60 (70.6%)	14 (42.4%)	8.06, 0.005
Monthly personal income (Argentine Pesos)	4196.79 (3179.64)	4476.0 (3294.0)	3266.3 (2614.2)	1.87, 0.061 ^a
Sexual orientation				
Heterosexual	93 (78.8%)	66 (77.6%)	27 (81.8%)	
Gay, lesbian, or bisexual	25 (21.2%)	19 (22.4%)	6 (18.2%)	0.25, 0.619
Relationship status				
Single	53 (44.9%)	38 (44.7%)	15 (45.5%)	
In a relationship	41 (34.7%)	28 (32.9%)	13 (39.4%)	
Other (widowed, divorced, etc.)	24 (20.3%)	19 (22.4%)	5 (15.2%)	0.89, 0.640
HIV serostatus of spouse/partner				
Negative/Do not know	47 (64.4%)	33 (63.5%)	14 (66.7%)	
Positive	26 (35.6%)	19 (36.5%)	7 (33.3%)	0.07, 0.796
Alcohol use				
No	39 (33.1%)	29 (34.1%)	10 (30.3%)	
Yes	79 (66.9%)	56 (65.9%)	23 (69.7%)	0.16, 0.693 ^b
Drug use				
No	98 (83.8%)	70 (83.3%)	28 (84.8%)	
Yes	19 (16.1%)	14 (16.7%)	5 (15.2%)	0.04, 0.842
Years since HIV diagnosis	11.33 (6.08)	10.64 (5.69)	13.04 (6.74)	1.94, 0.055
HIV _{log10} Viral Load	3.34 (1.55)	3.35 (1.56)	3.32 (1.56)	1.27, 0.206
CD4 Count	304.10 (248.09)	321.71 (0.267.54)	254.77 (177.60)	0.11, 0.911
Internalized HIV stigma	3.15 (3.86)	2.68 (3.71)	4.36 (4.04)	2.54, 0.011^a
Depression (BDI-II)				

Characteristic	Groups			Z/t/X ² , p
	All n (%) Mean (SD)	Non-Suicidal (n = 85) n (%) Mean (SD)	Suicidal (n = 33) n (%) Mean (SD)	
Somatic	8.84 (7.38)	7.41 (6.80)	11.38 (7.77)	2.98, 0.003
Affective	4.36 (4.86)	3.33 (3.96)	6.19 (5.76)	2.86, 0.004

Note: BDI-II = Beck Depression Inventory II.

^a Mann Whitney U test.

^b Fisher's Exact test.

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Table 2

Multivariable logistic regression models predicting suicidal ideation.

Variables	Model 1			Model 2			
	B (S.E.)	p	OR [95%CI]	B (S.E.)	p	OR [95%CI]	
Site	-0.521 (0.726)	0.473	0.594 [0.143, 2.467]	-0.628 (0.747)	0.401	0.534 [0.123, 2.308]	
Gender	0.364 (0.630)	0.563	1.440 [0.419, 4.953]	0.326 (0.653)	0.618	1.385 [0.385, 4.984]	
Age	-0.048 (0.045)	0.284	0.953 [0.873, 1.041]	-0.043 (0.020)	0.379	0.958 [0.871, 1.054]	
Monthly Personal Income	0.000 (0.000)	0.940	1.000 [1.000, 1.000]	0.000 (0.090)	0.982	1.000 [1.000, 1.000]	
Employment Status	-0.534 (0.640)	0.404	0.586 [0.167, 2.056]	-0.752 (0.646)	0.262	0.471 [0.127, 1.752]	
Self-Efficacy	-0.012 (0.009)	0.212	0.988 [0.970, 1.007]	-0.015 (0.020)	0.135	0.985 [0.967, 1.005]	
Stigma	0.174 (0.068)	0.010	1.190 [1.043, 1.359]	0.577 (0.006)	0.005	1.780 [1.194, 2.652]	
Years since HIV Diagnosis	0.091 (0.050)	0.070	1.095 [0.992, 1.209]	0.211 (0.005)	0.008	1.235 [1.056, 1.444]	
Stigma × Years since HIV diagnosis				-0.032 (0.015)	0.030	0.969 [0.941, 0.997]	
Constant	0.299 (2.030)	0.883	1.349 [-]	-1.077 (2.083)	0.649	0.341 [-]	
			Nagelkerke R ² = 0.275			Nagelkerke R ² = 0.340	
			Model 2 was significantly better than Model 1, $\chi^2 = 23.97, p = 0.004$				

Note: Significant relationships shown in bold.