Examining anxiety sensitivity as an explanatory construct underlying HIV-related stigma: Relations to anxious arousal, social anxiety, and HIV symptoms among persons living with HIV

Charles P. Brandt (M.A.)\textsuperscript{a,b,*}, Daniel J. Paulus (M.A.)\textsuperscript{a}, Charles Jardin (M.A. M.Div.)\textsuperscript{a}, Luke Heggeness (B.A.)\textsuperscript{c}, Chad Lemaire (M.D.)\textsuperscript{d}, Michael J. Zvolensky (Ph.D.)\textsuperscript{a,e}

\textsuperscript{a} University of Houston, Department of Psychology, 3695 Cullen Blvd., Room 126, Houston, TX 77204, United States
\textsuperscript{b} Baylor College of Medicine, 1 Baylor Plaza, Houston, TX 77030, United States
\textsuperscript{c} Kent State University, Department of Psychology, 144 Kent Hall, Kent, OH 44242, United States
\textsuperscript{d} Legacy Community Health, 1415 California St., Houston, TX 77006, United States
\textsuperscript{e} The University of Texas MD Anderson Cancer Center, Department of Behavioral Science, 1515 Holcombe Blvd., Houston, TX 77030, United States

1. Introduction

There are over 35 million people worldwide infected with the Human Immunodeficiency Virus (HIV) and its progression to Acquired Immunodeficiency Syndrome (AIDS; WHO, 2015). With the advent of combined antiretroviral therapy (cART) in 1996, persons living with HIV/AIDS (PLHIV) now have much longer life expectancies (Leone et al., 2011). However, living with HIV remains highly personally challenging, as it is associated with a number of significant and recurrent (chronic) stressors including physical pain, side effects of cART, social stigma, and discrimination, among other social stressors (Ammassari et al., 2001; Boissé, Gill, & Power, 2008; Tsao, Dobalian, Moreau, & Dobalian, 2004; Verma & Collumbien, 2004; Whetten, Reif, Whetten, & Murphy-McMillan, 2008). Presumably, as a result of these types of stressors, a disproportionately high number of PLHIV struggle with clinically-significant psychiatric symptoms and disorders. Although much scientific and clinical attention has focused on depressed mood and psychopathology among PLHIV (Cruess et al., 2003; Rabkin, 2008; Sherr, Clucas, Harding, Sibley, & Catalan, 2011), there has been comparably less focus on anxiety and its disorders. The paucity of work in this area is concerning from a public health perspective, as anxiety symptoms and disorders are the most common class of psychiatric disorders and often maintain a large negative impact on life functioning (Cadermann, Alonso, Vilagut, Zaslavsky, & Kessler, 2012; Lee & Rotheram-Borus, 2001). Moreover, rates of anxiety symptoms and disorders are markedly elevated among this population relative to persons without HIV/AIDS and those with many types of other physical conditions (Bing et al., 2001; Chandra, Ravi, Desai, & Subbakrishna, 1998; Sewell et al., 2000). Additionally, HIV symptoms are prevalent e.g., 50–80% of PLHIV and clinically impairing (Ammassari et al., 2001; Boissé et al., 2008).

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One construct shown to be related to anxiety and HIV symptoms among PLHIV is HIV-related stigma (Brent, 2016). Stigma is a multifaceted construct referring to one’s social identity or status (Goffman, 2009; Herek, 2014; Nyblade, 2006). HIV-related stigma is a global (i.e., overarching) construct theorized as a combination of four distinct sub-factors including 1) negative self-image – feelings of inferiority, shame and/or guilt; 2) enacted stigma – past experiences of rejection or discrimination; 3) concerns with public attitudes – subjective beliefs regarding how others perceive PLHV; 4) disclosure concerns – beliefs that one’s HIV status should remain concealed from others (Bunn, Solomon, Miller, & Forehand, 2007a,b). Due to the litany of psychosocial stressors and sources of stigmatization often encountered by PLHV, anxiety often covaries with HIV-related stigma, along with HIV symptoms (e.g., fatigue, muscle aches; Earnshaw, Lang, Lippitt, Jin, & Chaudoir, 2015; Fullilove, 1989; Herek, Saha, & Burack, 2013). For instance, higher rates of HIV-related stigma are associated with greater rates of anxiety among PLHV (Kamen et al., 2015; Li et al., 2016). Additionally, HIV-related stigma may worsen HIV-related symptoms (Earnshaw et al., 2015). Such relations are evident across cultural groups (Kamen et al., 2015; Li et al., 2016) and gender (Brown, Serovich, Kimberly, & Hu, 2016). Thus, understanding the relationship between HIV related stigma and anxiety and HIV symptoms among PLHV is of public health importance (Heywood and Lyons, 2016). Although past research has provided consistent evidence that HIV-related stigma is related to poor mental and physical health outcomes among PLHV (e.g., Herek et al., 2013), there remains a need to identify mediators of this relation in order to help understand the mechanisms involved in this relation.

One factor that may impact the relations between HIV-related stigma and anxiety as well as HIV symptoms is anxiety sensitivity. Anxiety sensitivity is the extent to which individuals believe anxiety and anxiety-related sensations (e.g., racing heart) have harmful personal consequences (McNally, 2002). Empirically, anxiety sensitivity is distinguishable from the tendency to experience more frequent anxiety symptoms (e.g., trait anxiety) and other negative affect propensity variables (e.g., negative affectivity; Rapee & Medoro, 1994; Zvolensky, Kotov, Antipova, & Schmidt, 2003). Theoretically, anxiety sensitivity may be of particular importance among PLHV because of the wide array of interoceptive (e.g., aversive bodily sensations, chronic stress) and exteroceptive (e.g., stigma, discrimination) stressors associated with the disease. To date, a few studies have examined anxiety sensitivity in relation to negative affect symptoms among PLHV. For instance, among 51 PLHV, anxiety sensitivity was related to anxiety and depressive symptoms (Gonzalez, Zvolensky, Solomon, & Miller, 2010), even when controlling for negative affectivity. Other work found anxiety sensitivity was associated with a wide variety of internal states, such as anxious arousal, bodily vigilance, and interoceptive fear (Gonzalez, Zvolensky, Grover, & Parent, 2012; Gonzalez, Zvolensky, Parent, Grover, & Hickey, 2012). Another investigation found that anxiety sensitivity was related to greater HIV symptom severity among 139 PLHV (Leyro, Vujanovic, & Bonn-Miller, 2015). These collectively suggest anxiety sensitivity is an important transdiagnostic risk candidate for anxiety and related symptoms among PLHV.

Theoretically, anxiety sensitivity may serve to explain the relation of HIV stigma and anxiety as well as HIV symptoms among PLHV. Indeed, anxiety sensitivity may serve to amplify emotional distress related to stigma by promoting catastrophic thinking and escape and avoidance behavior, thereby maintaining or exacerbating anxiety and HIV symptoms. As one illustrative example, the experience of stigma may be related to an increase in bodily perturbation (e.g., sweating, heart rate increase, bodily tension); a PLHV with high anxiety sensitivity would be more apt to misinterpret or catastrophize about such internal stress (e.g., “I cannot handle this; I am going to die”). Such anxious reactivity, in turn, may be further associated with escape or avoidance of others in the future, thereby reinforcing the relation between stigma-catastrophic thinking and aversive internal sensations. Similarly, high anxiety sensitivity may amplify the physical effects of HIV-related stigma, which may exacerbate HIV symptoms in a similar cyclical manner (see Fig. 1). Accordingly, a forward feed cycle may develop wherein HIV stigma, anxiety sensitivity, and anxious reactivity interplay with one another in a feedback loop.

Overall, HIV stigma may be linked to poorer (anxiety-related) mental health among PLHV, in part, because of anxiety sensitivity. To explore this research question, the present investigation sought to address whether anxiety sensitivity explained the relation between HIV-related stigma and anxiety (anxious arousal and social anxiety) and HIV symptoms among PLHV. Anxious arousal and social anxiety were chosen as facets of anxiety to examine the a priori hypothesis that they may show the greatest reactivity to HIV-related stigma. Specifically, it was hypothesized that greater HIV-related stigma would be associated with greater anxiety symptoms as well as greater HIV-related physical sensations, and that anxiety sensitivity would mediate these associations. As a test of the incremental validity of this theoretical perspective, it was predicted that these effects would be observed above and beyond a host of covariates that have been shown to impact mental and physical health among PLHIV including: minority status, gender, sexual orientation, time living with HIV and negative affectivity (Brandt, Zvolensky, Daumers, Grover, & Gonzalez, 2016).

2. Material and methods

2.1. Participants

Participants in the current study included 87 adults with a self-reported diagnosis of HIV/AIDS (60.9% cisgender male (i.e., birth gender corresponding with personal identity of gender) male, 35.8% cisgender female, 2.3% transgender, M_age = 48.38, SD = 7.86). The sample was ethnically diverse, with 35.6% identifying as European American, 52.9% as Black/Non-Hispanic, 5.7% as Black/Hispanic, 3.4% as Hispanic, and 2.3% as ‘Mixed/Other.’ Although the sample was relatively well-educated (83.9% had at least a high school degree, 50.6% had at least some college) employment was poor (82.8% reported unemployment, 14.9% reported part-time employment). Eighty percent of the sample met criteria for having an axis I psychological disorder. There was also a high rate of comorbidity within our sample (MDiagnoses = 2.29, SD = 2.08), with 64.4% meeting criteria for multiple disorders (See Table 1 for diagnosis breakdown). Regarding HIV status, 47.1% of participants reported a diagnosis of HIV, 44.8% reported a diagnosis of AIDS, while 8% did not know their status. On average, participants within our sample reported living with an HIV diagnosis for 17.5 years (SD = 8.28). On average, participants reported an average CD4 T-cell count of 565.82 (SD = 276.73), ranging from 28 to 1325, and 69% reported an undetectable viral load. Eligibility for participation was being between the ages of 18 and 65, a positive diagnosis of HIV/AIDS, and ability to provide informed written consent. Participants were excluded from study participation if they were unable to provide informed consent, could not answer questions accurately due to illiteracy issues, or met criteria for untreated psychotic or bipolar disorder.

2.2. Measures

2.2.1. MINI International neuropsychiatric interview (MINI; Lecrubier et al., 1997).

The MINI is a semi-structured diagnostic interview used to assess DSM-IV disorders. The MINI was used to index current (i.e.,
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