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A Diathesis-Stress Approach to Post-Traumatic Stress Disorder Symptoms Associated with an HIV Diagnosis: Implications for Medication Non-adherence.

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A DIATHESIS-STRESS APPROACH TO POST-TRAUMATIC STRESS DISORDER
SYMPTOMS ASSOCIATED WITH AN HIV DIAGNOSIS: IMPLICATIONS FOR
MEDICATION NON-ADHERENCE

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Dedication

This dissertation is dedicated to my amazing mother, my family and friends.

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SYMPTOMS ASSOCIATED WITH AN HIV DIAGNOSIS: IMPLICATIONS FOR
MEDICATION NON-ADHERENCE

by

JOHN ANDREW SAUCEDA, M.A.

DISSERTATION

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Abstract

Introduction. We fit a diathesis-stress model with childhood trauma and neuroticism as predictors of depressive and HIV-related PTSD symptomatology in a sample of HIV+ Latino men who have sex with men (MSM). We then examined the impact of depressive and HIV-related PTSD symptomatology on medication adherence. We hypothesized the primary stressor from the diathesis-stress model to be symptoms of dissociation at the time of being diagnosed with HIV.

Method. We sampled 149 Latino adult MSM living with HIV at a local HIV treatment clinic in El Paso, Texas. We administered all surveys in paper-and-pencil form, with viral loads and CD4 cell counts extracted from medical charts. Specifically, data were collected on self-reported histories of childhood abuse, trait levels of neuroticism, acculturation to non-Latino culture, accumulated life stressors, depression, HIV and non HIV-related post-traumatic stress symptoms, resilience, functional impairment and medication adherence. All participants were interviewed in either English or Spanish and paid \$30 for their participation. Interviews lasted approximately two hours.

Results. We observed high levels of childhood sexual abuse (22%) and trauma overall, as well as high rates of mild-to-moderate symptoms of depression (30%). Self-reported medication adherence was high across all measures. We found support for our hypothesized path model as a test of the theoretical structure proposed by the diathesis-stress model. All fit indices were indicative of good model fit. In addition, we found support for the diathesis-stress interaction with dissociation symptoms at the time of diagnosis moderating the relationship between childhood trauma and HIV-related PTSD symptoms. As hypothesized, our regression analyses revealed depression to be negatively correlated with adherence. PTSD symptoms related to HIV were positively associated with adherence, the opposite direction of that hypothesized.

Conclusion. The diathesis-stress framework adequately models the relationship among childhood trauma, current levels of psychological distress, and the stress of being diagnosed with HIV. Furthermore, psychological distress is negatively associated with adherence and overall quality of life. Implications for interventions are discussed.

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Chapter 1: Introduction

1.1 Epidemiology of HIV/AIDS in Latino Men Who Have Sex With Men (MSM)

In the United States (U.S.) the annual incidence of HIV infections is approximately 56,000 (CDC, 2011a), with Latinos accounting for a disproportionate amount of new diagnoses (approximately 9,400; CDC, 2011b). Over the past five years, HIV incidence rates, including among Latinos specifically, have remained stable (Prejean et al., 2011), although Latinos remain more than two and half times more likely to be diagnosed with HIV than their non-Latino White counterparts (CDC, 2011b). As of 2013, there are over 1.1 million people in the U.S. living with HIV, an estimated 220,000 of whom are Latino (HJKFF, 2013). With regards to AIDS, in 2005, Latinos were more than three times more likely than non-Hispanic Whites to be diagnosed with AIDS (CDC, 2007). Within the ethnic disparities in HIV and AIDS diagnoses, the impact on gay Latino men is even greater (CDC, 2011a). Eighty-one percent of transmissions of HIV in Latino men occur through sex with other men (CDC, 2012a), with Latino gay men becoming infected at younger ages than non-Latinos (HJKFF, 2013). Furthermore, the number of Latinos reaching the optimal health threshold of viral suppression (i.e., undetectable viral load) is estimated to be at 26%, compared to 21% for African-Americans and 30% in Whites (CDC, 2012b). With regards to environment and location factors, California and Texas, two states that border Mexico, are two of the top five states with the highest concentration of Latinos living with HIV (HJKFF, 2013). Thus, an investigation into the issues facing HIV+ Latino men who have sex with men living on the U.S.-Mexico Border may yield valuable insight into this rapidly growing population, as well as factors to consider in reducing health disparities. At the tertiary level of prevention, this study aims to investigate issues of adherence to medication and quality of life indices in Latino MSM living with HIV/AIDS, and thus focuses on factors that may impede or protect people in their attempt to successfully manage their disease.

1.2 HIV/AIDS and Psychological Distress

Multiple factors may contribute to disease progression from HIV to AIDS. Consistent evidence, both before and after the advent of anti-retroviral therapies, has shown that symptoms of psychological distress (e.g., depression, anxiety, post-traumatic stress) have accounted for variation in disease progression from HIV to AIDS (Leserman, 2008). Physiological and biological stress studies have shown psychological distress to be a significant predictor of disease progression from HIV to AIDS and overall mortality (Leserman et al., 2000, Leserman et al., 2007, Leserman, 2008). Throughout this work, we will refer to the collection of symptoms related to depression, anxiety, post-traumatic stress as *psychological distress*, unless discussing specific diagnoses (Delany-Brumsey, Joseph, Myers, Ullman, & Wyatt, 2011).

Psychological distress accompanying the experience of a medically-related stressful event is not uncommon. In comparison to the general population, disproportionately higher rates (25%) of mental disorders have been documented in primary care settings using standardized clinical assessments (Schulberg & Burns, 1988). Specifically, high rates of psychological distress symptoms have been found following the experience of being diagnosed and associated stress of living with HIV/AIDS (Beckerman & Aurbach, 2010; Boarts, Buckley-Fischer, Armelie, Bogart, & Delahanty, 2009; Fincham & Kagee, 2009), cancer (Elklit & Blum 2011; O'Connor, Christensen, Jensen, Møller, & Zachariae, 2011), diabetes (Anderson, Freedland, Clouse, & Lustman, 2001; Heckbert et al., 2010), and end-stage renal disease (Gilbar, Or-Han, & Plivazky 2005; Kimmel, Thamer, Richard, & Ray 1998), as well as the experience of a myocardial infarction (Ayers, Copland, & Dunmore, 2009; Bennet, Owen, Koutsakis, & Bisson, 2002; Sheldrick, Tarrier, Berry, & Kinsey, 2006) and surgical operations (DuHamel et al., 2010).

As Latinos are diagnosed with HIV at disproportionate rates, and disproportionately account for the number of AIDS cases, they are at an increased risk for morbidity and mortality due to psychiatric comorbidities that may develop (CDC, 2011b; Gonzalez, Hendriksen, Collins, Durán, & Safren, 2009). For example, a large national probability study in 2001 estimated that nearly 40% of HIV+ adults in the U.S. met criteria for a psychiatric disorder (Bing et al., 2001). A more recent review by Blashill and colleagues (2011) suggests that the rate may be as high as 50%, with Latinos being at equal risk (Gonzalez, Hendriksen, Collins, Durán, & Safren, 2009). Additionally, the rate at which HIV+ adults experience psychological symptoms of distress (without necessarily meeting criteria for a psychological disorder diagnosis) has been shown to be as high as 48% (Gonzalez, Hendriksen, Collins, Durán, & Safren, 2009; Paterson et al., 1996). As it relates to sexual orientation, extremely high rates of symptoms related to anxiety and depression (44% and 80%) were found in a large probability sample of HIV+ Latino men who have sex with men (MSM; Diaz, Ayala, Bein, Henne, & Marin, 2001). Rabkin and colleagues (1997) noted that the success of antiretroviral therapy (ART) in increasing lifespan, but not eradicating illness symptoms, should create a shift in focus toward the issues of mental health in people living with HIV/AIDS (PLWHA). Alarming rates of psychological distress highlight the need for identifying not only how mental health issues impact the quality of life of PLWHA, but also the mechanisms through which mental health problems develop.

1.3 The Diathesis-Stress Model

The focus of this study is on the severity of post-traumatic stress disorder and depressive symptomatology associated with the diagnosis and stress of living with HIV/AIDS. Subsequently, we will investigate how symptoms of psychological distress negatively impact medication adherence and overall health. This process begins with attempting to understand how

predispositions contribute to the development of psychological symptoms of distress following the event of being diagnosed with HIV/AIDS. The diathesis-stress model explains the development of psychological disorders as the activation of a predisposition to experience distress, following exposure to a stressful event (Monroe & Simons, 1991). The diathesis (i.e., predisposition) is a vulnerability or propensity to experience psychological distress, formed early in life through either an endogenous (e.g., inherent temperament or genetic vulnerability) or exogenous factor (e.g., environmental influence; Zubin & Spring, 1977). When an individual subsequently is exposed to a stressful event, the diathesis may be activated (Metalsky, Halberstadt, Abramson, 1987). It has been said that a traumatic or severely stressful life event triggers the psychological sequelae (Bleuler, 1963). Following this model proposed by Bleuler (1963), the diathesis-stress relationship is said to be additive (i.e., level of diathesis and severity of stressor are independent predictors leading to development of psychopathology; Ingram & Lexton, 2002). On the other hand, if one adopts the view of an ipsative relationship, the greater the level of diathesis, the less severe the stressor need be to lead to the development of psychopathologies (i.e., the effect of the stressor is catalyzed by the presence of the diathesis; Monroe & Hadjiyannakis, 2002). The distinction between additive or ipsative models of the diathesis-stress relationship is largely a conceptual one. However, some have argued that if the diathesis is acquired, as opposed to an inherited genetic vulnerability, then examining multiple diatheses would provide a more complete model of the diathesis-stress relationship (Goodman & Gotlib, 1999; Ingram & Lexton, 2002).

1.4 Acquired Dispositions: Childhood Abuse in HIV+ MSM

In 2006, nearly 900,000 children were found to be victims of some form of maltreatment (Child Maltreatment, 2006). In 2007, nearly 80,000 cases of physical abuse and 57,000 cases of

sexual abuse in children and adolescents were reported to welfare agencies (Child Maltreatment, 2007). Despite these high rates of abuse, these estimates were part of a downward trend from 1992-2007 (Jones & Finkelhor, 2007). Recently, estimates of the rate of childhood sexual abuse (CSA) in a large random sample of adult men ranged from .08% to 5% (Bebbington et al., 2011). These estimates are dramatically increased in gay and bisexual male samples (Lenderking et al., 1997; Rothman, Exner & Baughman, 2011). Aside from one study documenting a 4.1% prevalence of CSA in reservation-based American Indian adolescents (Saewyc, Skay, Bearinger, Blum, & Resnick, 1998), a review of prevalence estimates of CSA in gay and bisexual men across 24 studies ranged from 13.3% to 59.2% (Rothman, Exner & Baughman, 2011). The wide range of estimates in this review could be explained by author's inclusion criteria for studies reporting events as sexually abusive. Rothman and colleagues (2011) reviewed 71 studies using a definition of sexual abuse as sexual contact prior to the age of 16 with a person who is at least five years older. According to the U.S. Administration for Children and Families, the clinical definitions of sexual abuse include either an age time frame (e.g., prior to 16 and age difference) or a power differential criterion that include force or non-consent on the part of the victim (U.S. Health and Human Service Department, 2011). Due to the varying definitions of childhood sexual abuse with respect to age of victimization, we will utilize the clinical definitions which also include force in our assessment.

A meta-analysis by Friedman and colleagues (2011) found that sexual minority children and adolescents (defined as children or adolescents with same-sex attraction, same-sex behavior, or those who self-identify as gay or bisexual) were almost four times more likely than non-sexual minorities to be sexually abused and 1.2 times more likely to be physical abused. Furthermore, disparities in experiences of CSA are found in ethnic minorities, specifically of Latino origin

(Carballo-Diéguez & Dolezal, 1995). An early study found that Latino gay and bisexual men were twice as likely to experience CSA, more likely to be younger when the abuse occurred, and more likely to have an age difference of 5 years between themselves and the abuser (Doll et al., 1992). In 1998, Jinich and colleagues estimated prevalence of CSA in Latino MSM to be 39% (95% CI = 31.18, 48.12), which was significantly greater than the 27% (95% CI = 24.97, 29.14) estimated in a sample of non-Latino MSM. Patterns of disparities continue to emerge with data from the Urban Men's Health Study, which used a large probability sample of telephone interviews among MSM across four major U.S. cities and reported that nearly twice as many Latino MSM experienced CSA as did a comparative sample of non-Hispanic MSM (22% versus 12%; Arreola, Neilands, Pollack, Paul, & Catania, 2005). Since 1998, prevalence rates of CSA have been consistently found to be comparable to rates reported in earlier studies (Arreola et al., 2005; Arreola, Neilands, & Díaz, 2009).

Meta-analytic and epidemiological studies have found strong and consistent evidence that CSA is linked to symptoms of post-traumatic stress, depression, anxiety, lower self-esteem, and suicide ideation (Jumper, 1997; Kessler, Davis, Kendler, 1997; MacMillan et al., 2001; Paolucci, Genius, & Violato, 2001). In line with the diathesis-stress model, experiences of CSA may manifest as a vulnerability (i.e., diathesis from an exogenous factor) to experience psychological distress later in life (Friedman et al., 2011). Kessler and colleagues (1994) provided data clearly supporting the hypothesis that CSA may produce a diathesis, stating that CSA events “are associated with the risk of onset but not with persistence” of certain psychological disorders (p. 1116). Furthermore, a meta-analysis that reviewed studies from the past 28 years published in the *Journal of the American Medical Association* articulated the same point, stating that sexual abuse

“may be an early, inciting environmental factor” that then may predispose one to develop physical and psychological morbidities (p. 559, Paras et al., 2009).

As it relates to psychological morbidity, MSM who report CSA are more likely than non-abused MSM to have mental health hospitalizations, report more emotional problems, suffer from depression and suicide ideation, and use illicit psychoactive substances (Arreola, Neilands, Pollack, Paul, & Catania, 2008; Bartholow et al., 1994). Additionally, individuals exposed to physical violence were more likely to suffer from depression, especially if from a lower socioeconomic stratum (Kessler & Magee, 1994). For ethnic minority MSM, disproportionate rates of abuse and psychiatric morbidity have been reported (Arreola et al., 2005; Doll et al., 1992). In a study examining the effect of childhood abuse (physical and sexual) on later adulthood development of post-traumatic stress, anxiety, and depressive symptomatology, Latino MSM were one of two groups reporting the highest rates of abuse (Balsam et al., 2010). Latino MSM in the latter study who reported CSA were also found to have the highest levels of post-traumatic stress and anxiety symptomatology, but not elevated depression when compared to non-Latinos (Balsam et al., 2010). Others have also found similar patterns of elevated symptoms of psychological distress in Latinos (Arreola, Neilands, & Díaz, 2009). From a physiological perspective, evidence from the field of psychoneuroimmunology supports the hypothesis that the development of post-traumatic stress disorder following the experience of a stressful or traumatic event alters the hypothalamic-pituitary-adrenal (HPA) axis in humans (Heim, Ehlert, Hanker, & Hellhammer, 1998). The HPA axis is one key system (the sympathetic-adrenomedullary system being the other; SAM) responsible for the physiological stress response in mammals, as well as the pathway most studied. Alterations to this system leave individuals more vulnerable to the effects of a stressor, supporting the hypothesis of a diathesis-stress relationship between CSA

and later development of psychopathology following exposure to a major stressor or accumulation of stressors over time (Heim, Owens, Plotsky, & Nemeroff, 1997). Springer and colleagues (2003) noted that CSA is more than a social issue, but a health issue as well. In their “call to action” report, they argue that more research is needed in testing mechanisms by which CSA may lead to the development of mental and physical morbidity, and subsequently methods by which this effect can be curtailed.

In summary, Latinos MSM account for a disproportionate rate of HIV diagnoses and AIDS cases, and are more likely than other ethnic groups and sexual non-minorities to have experienced childhood sexual and physical abuse. Latino MSM who experienced events of CSA disproportionately suffer from psychiatric morbidity, including post-traumatic stress and anxiety. Empirical studies support the hypothesis that CSA may produce an acquired diathesis for post-traumatic stress disorder and depression in HIV+ Latino MSM.

1.5 Inherent Dispositions: Neuroticism in HIV+ MSM

Neuroticism is a personality trait that is associated with a tendency to experience negative affect (DeYoung, Cicchetti, & Rogosch, 2011). The famous psychologist H.J. Eysenck argued that neuroticism was an inherited trait predisposing one to experience negative emotion, while symptoms of depression and anxiety are “far more influenced by environmental effects” (p. 75, Eysenck, 1991). Eysenck (1953) stated that a person with a neurotic diathesis “is liable to break down under very slight provocation” (p.194). Other personality theorists have conceptualized neuroticism as sensitivity to danger and threat, with support coming from neuroimaging studies (DeYoung & Gray, 2009; Matthews & Gilliland, 1999). Similarly, individuals with high levels of neuroticism are also more likely to have higher baseline levels of stress hormones and paradoxically less physiological reactivity to a stressor, implicating a dysfunction in the HPA

axis system (DeYoung, Cicchetti, & Rogosch, 2011; McEwen, 1998, Netter, 2004). Parallels between neuroticism and post-traumatic stress symptomatology can therefore be made. DeYoung (2011) contends that neuroticism affects motivational processes associated with inhibition (i.e., avoidance) versus approach-like (i.e., goal-directed) behaviors. Avoidance is one of three criterion symptom clusters for a diagnosis of post-traumatic stress disorder (APA, 2000) and has been found to be related to levels of neuroticism (Roca, Spence, & Munster, 1992). In a study of women who suffered from pregnancy loss, higher levels of neuroticism were associated with higher levels of avoidant/numbing scores as well as re-experiencing symptoms of the traumatic event (Englehard, van den Hout, & Kindt, 2003). An earlier study found that individuals who suffered from post-traumatic stress disorder following a traumatic event had higher neuroticism scores than individuals who suffered from major depressive disorder or a generalized anxiety disorder (Davidson, Kudler, & Smith, 1987).

People living with HIV/AIDS have also been found to have higher neuroticism levels than others (Ironson, O’Cleirigh, Weiss, Schneiderman, & Costa, 2008). In studies with PLWHA, higher neuroticism levels were found to be correlated with depression ($r = .24$), anxiety ($r = .37$), perceived stress ($r = .48$) and lower optimism ($r = -.44$; Löckenhoff, Ironson, O’Cleirigh, & Costa, 2009). Burgess and colleagues (2000) also found that irrespective of current physical health status, higher levels of neuroticism predicted lower levels of psychological health, with this effect being invariant across three international cohorts of HIV+ adults (gay/bisexual Italian men and two groups of intravenous drug users in the United Kingdom). In a sample of adults living in India, individuals who were HIV+ had greater levels of neuroticism, lower self-esteem and more hostility than a comparison sample of adults who were not HIV+ (Mohan & Bedi, 2010). Altogether, neuroticism levels have shown to be a risk

factor for psychopathology. For example, PLWHA who attempted suicide had higher levels of neuroticism than those who had not attempted suicide, and were also more likely to have experienced CSA earlier in their lives (Roy, 2003). Supporting the notion of neuroticism as an inherited diathesis, Roberts and colleagues (2001) found that following the experience of a stressful event, individuals with a greater level of neuroticism were likely to report the event as being more stressful compared to individuals with low dispositional neuroticism.

Psychological distress is one of the key contributors to HIV medication non-adherence (Nel & Kagee, 2011). Evidence supports the hypothesis that neuroticism indirectly affects adherence and biomarkers (i.e., viral load and CD4 cell count). This highlights the need for the testing of mediation models to elucidate the diathesis-stress pathway. For example, the relationship between neuroticism and quality of life was mediated by severity of HIV medication side effects, which have been shown to be associated with non-adherence (Ammassari et al., 2001; Johnson & Neilands, 2007). Furthermore, although mediation was not tested, a separate study found associations between neuroticism and quality of life, and between quality of life and better adherence (Penedo et al., 2003). As it relates to HIV biological markers, over a four-year period, the relationship between neuroticism and reductions in CD4 cell count was marginally significant; however, greater neuroticism was associated with non-adherence, which directly effects disease progression (Ironson et al., 2008). In summary, neuroticism is an inherent personality trait that is associated with a vulnerability to experience negative emotions and greater reactivity to stressful events. Neuroticism in PLWHA has been implicated as a mechanism for the development of psychological distress, greater medication side effects, poorer quality of life and non-adherence.

1.6 Post-Traumatic Stress and Depressive Symptomatology in HIV/AIDS

A large study evaluating over 34,000 diagnostic interviews for ethnic differences in development of PTSD found that Hispanics had a lower risk of exposure to traumatic events but were at higher risk of suffering from CSA and witnessing domestic violence in childhood (Roberts, Gilman, Breslau, Breslau, & Koenen, 2010). As mentioned earlier with regard to risk for depression, Hispanics in comparison to non-Hispanic Whites were found to be at equal risk for developing PTSD (Roberts et al., 2011). In the general population, the lifetime prevalence rate is 5-10% for PTSD (Galea et al., 2005), and 15% for depression (Kessler et al., 2005). Worldwide, past 12-month prevalence rates of depression are estimated at 9.6% and for anxiety disorders 18.2%, including PTSD (World Mental Health Survey Consortium; 2004).

In studies of people living with HIV, depression and stress have been implicated as mechanisms of disease progression from HIV to AIDS (Leserman et al., 1997). In one study, Leserman and colleagues (2000) found that every one unit increase in accumulated average of experienced stressful events increased the risk of developing AIDS by 19%, while depression levels were not associated with any higher risk. However, though there is evidence linking depression to disease progression, more consistent results implicate life stressors as a stronger predictor due to physiological effects they may have (Leserman, 2008).

There has been a steady growth of interest in HIV-related post-traumatic stress disorder (Young, 2011). The Diagnostic and Statistical Manual of Mental Disorders (DSM IV-TR; APA, 2000) defines traumatic events as the experience or witnessing of events that involve “actual or threatened death or serious injury, or a threat to physical integrity of self or others” (p. 467). In its most recent version, the DSM recognizes being diagnosed with a life-threatening illness, such as HIV, as a traumatic event that may lead to PTSD. In order to meet criteria for PTSD, a person

must have first experienced a traumatic event and over the course of one month present symptoms of persistently reexperiencing the traumatic event, persistent avoidance of stimuli associated with the event and numbing of response (e.g., flat affect), as well as symptoms of increased arousal (APA, 2000). Several researchers have implicated the actual moment of being diagnosed as the traumatic event (Kelly et al., 1998; Nightingdale, Sher, & Hansen, 2010) that is compounded by the prospect of living with a potentially life-threatening illness that has no cure (Safren, Gershuny, & Hendriksen, 2003).

There is no doubt that experiencing an HIV diagnosis is psychologically traumatic, but continued stress may also trigger the onset of PTSD symptoms. For example, the emotional cascade that occurred at the time of diagnosis can be frequently re-experienced, dreamt, and continually activated by internal and external cues such as visits to physicians. Secondly, there is the potential to avoid thoughts or feelings surrounding the diagnosis and fact that one is living with HIV, which may have implications for medication non-adherence. Thirdly, the marked PTSD symptoms of hyperarousal and irritability can be emotionally taxing. However, what may be most distressing is the continual threat of challenges and concerns about health status, family, body image, employment, stigma, isolation and death (Martin & Kagee, 2011).

The key time course marker for a diagnosis of PTSD is one month, however prior to meeting this criterion one may meet a diagnosis of acute stress disorder (ASD). The key distinction between PTSD and ASD is that the diagnosis of ASD requires manifestation of multiple dissociative symptoms (APA, 2000). These symptoms, conceptually categorized as acute stress reactions (Gallego, Barreiro, & López-Ibor, 2011), include an emotionally numbing sensation, being in a daze, derealization, depersonalization, and dissociative amnesia (i.e., trouble recalling important details of the event) during or immediately after exposure to a

traumatic event. The DSM criteria for ASD state that a person must experience three of five dissociative symptoms, as well as the three other clusters of symptoms in PTSD (i.e., reexperiencing the event, avoidance/numbing/ and hyperarousal) within one month following the traumatic event (APA, 2000). While it is well known that ASD is not heavily researched (Bryant, Moulds, & Guthrie, 2000) and is met with criticism (Harvey & Bryant, 2002), there is evidence to show that individuals who experience symptoms of dissociation within one month following a traumatic event, versus those who do not, are more likely to develop PTSD (Classen, Koopman, Hales, & Spiegel, 1998; Fuglsang, Moergeli, & Schynder, 2004; Gallego, Barreiro, & Lopéz-Ibor, 2011). Furthermore, the percentage of HIV+ adults who at the time of diagnosis or at initiation of ART experience dissociative-like states (including confusion and disorientation) is estimated to range from 40-65% (Gallego et al., 2011). Even major state health departments (e.g., in New York) have issued guidelines for primary care practitioners in the screening, diagnosing and management of PTSD in HIV patients (New York State Department of Health, 2007). There is also evidence linking dissociation and PTSD to medication non-adherence (Keuroghlian et al., 2011). The findings reported by Gallego and colleagues (2011) suggest that learning that one is HIV+ is an extremely stressful event associated with symptoms of dissociation.

If PTSD-related symptoms persist beyond one month, then an individual may meet criteria for a PTSD diagnosis. What have resulted from the recent surge of interest in HIV-related PTSD are estimates of its prevalence and comorbidity with other psychiatric conditions. For example, the estimated rates of HIV-related PTSD from clinician and non-clinician administered psychiatric assessments have ranged from 30%-64% (Beckerman & Auerbach, 2010; Beckerman & Auerbach, 2011; Israelski et al., 2007; Kelly et al., 1998), compared to a

consistent estimate of 33% who meet criteria for depression (Gonzalez et al., 2009). Many others have found the rates of comorbidity between depression and PTSD to be high, ranging from 22% to 50% (Boarts, Buckley-Fischer, Armelie, Bogart, & Delahanty, 2009; Vranceanu et al., 2008). More alarming is that these disorders may not be treated properly. In a study by Israelski and colleagues (2007), 43% of study participants who screened positive for ASD, PTSD or depression had never received any psychiatric treatment (i.e., medication or psychotherapy).

Mapping the PTSD DSM criteria onto experiences of living with HIV may elucidate why many PLWHA present PTSD-related symptoms. Beckerman and Aurbach (2010), as well as others, outline some key reasons for the prevalence of HIV-related PTSD which include: 1) PLWHA have disproportionately experienced greater numbers of traumatic events in their lifetimes (especially ethnic minorities and MSM), leaving them vulnerable to the effects of those stressors, 2) the diagnosis is emotionally taxing, with fear and shock being common experiences, 3) the way in which the HIV diagnosis experience is perceived is culturally bound, with greater fear and shock nested within gender roles and stigma concerns, 3) studies have shown that over half of all study participants cite the diagnosis as their most traumatic event, leading to intrusive memories about their diagnosis experience, including constant worry and rumination, 4) symptoms of avoidant behavior, especially of stimuli and external cues related to HIV, might manifest as non-adherence to ART and poor retention in care, 5) studies have shown that individuals with greater numbing response (PTSD cluster C) engage in more risky behavior possibly through a dysfunction of the emotional regulation systems, and 6) hyperarousal states may be exacerbated after the diagnosis as many individuals who experience HIV-related PTSD are more likely to have experienced anxiety-like symptoms prior to the diagnosis (Boarts et al., 2009; Catz, Kelly, Bogart, Benotsch, & McAuliffe, 2000; Katz & Nevid, 2005; Kelly et al.,

1998; Martin & Kagee, 2011, Mimiaga et al., 2009; Nightingdale, Sher, & Hansen, 2010; Reisner, Mimiaga, Safren, & Mayer, 2009; Ullman, Najdowski, & Filipas, 2009). Furthermore, it has been evidenced that the diagnosis can result in HIV-related PTSD years after the initial event (Delahanty, Bogart, & Figler, 2004; Olley, Zeier, Seedat, Stine, 2005). Some caveats should be discussed, as the assessment of HIV-related PTSD is filled with conceptual and methodological concerns (Kagee, 2008; Young, 2011).

The major criticism of HIV-related PTSD is that psychological assessments capture a syndrome of general distress that is non-specific. Two points of evidence may counter this argument. First, there are numerous studies that have arrived at a PTSD diagnosis through a structured clinician-administered interview (Kelly et al., 1998; Martin & Kagee, 2011). Second, studies have verified the predictive validity of an HIV-related PTSD self-report measure across multiple time points and through a supplemental structured clinician-administered interview (Martin, Fincham, & Kagee, 2009; Vranceanu et al., 2008). Despite this evidence, the large overlap between PTSD, depression, and anxiety may be difficult to discern. However, evidence from Marshall and colleagues (2010), who compared the relationship between a 17-item measure of PTSD and general distress, suggest that non-specific symptoms of PTSD (e.g. arousal, irritability) were no more likely to be associated with general distress than specific symptoms (e.g., reactivity to cues, avoiding thoughts). Had non-specific symptoms of PTSD been more strongly associated with general distress, then discerning the two may be more difficult. However, since non-specific symptoms were no more likely to be related to general distress, it was concluded that general distress was central to PTSD, and that there are unique features similar to those found in depression that warrant further investigation of this construct.

As described earlier, depression is one of the most common and well-researched problems affecting PLWHA (Blashill et al., 2011; Bing et al., 2001). While the assessment of depression in PLWHA is not free from methodological concerns (Simoni et al., 2011), consistent findings have linked depression to further development of physical and psychiatric morbidity and risk for mortality (Leserman, 2008; Ferrando & Freyberg, 2008). Depression alone, producing changes in concentration, energy levels, and overall mood may directly impact health care behaviors, but also produce secondary symptoms related to problem-solving and motivation that indirectly lead to non-adherence and disease progression (Catz et al., 2000; Safren, Radomsky, Otto, & Salomon, 2002). More concerning is the rate at which depression and PTSD in PLWHA are found to be comorbid. Several studies estimate the rate of a dual diagnosis or co-occurrence of symptoms to between 22% and 75%, a range which may be accounted for by the thoroughness of assessments and screening instruments (Boarts et al., 2009; Israelski et al., 2007; Vranceanu et al., 2008). Thus, an investigation into the relative impact of two potentially comorbid psychopathologies on adherence and quality of life may elucidate specific targets for interventions.

1.7 Psychological Distress on Adherence and Functional Impairment

Excellent medication adherence to antiretroviral therapy (ART) is the single most important factor in optimizing virological outcomes, thus reducing morbidity and mortality in PLWHA (Crum et al., 2006; Patterson et al., 2000). More recently, a review of studies conducted in North America found that only 55% of PLWHA were achieving optimal adherence (Mills et al., 2006). Barriers to adherence and care can be attributed to instrumental factors such as access to care and retention in care; however, psychosocial factors also contribute heavily (Whetten, Reif, Whetten, & Murphy-McMillan, 2008). In fact, there is evidence to suggest that overall

adherence and health are impaired more by the development of psychopathologies than by the severity of the disease (Holzemer et al., 1999; Mehta, Moore, & Graham, 1997; Safren et al., 2001; Starace et al., 2002). A study by Murphy and colleagues (2003) found that missed doses were often attributed to feelings of depression and being overwhelmed, simply forgetting, or sleeping through dosing times. Catz and colleagues (2000) reported that almost 90% of individuals on ART stated the biggest barrier to adherence was having their treatment be a reminder that they are living with HIV+.

The comorbidity of depression and PTSD may place PLWHA at greater risk for non-adherence (Brief et al., 2004). Furthermore, both PTSD and depression have been shown to disrupt social relationships, limiting the extent to which social support can be an indirect strategy for maintaining optimal adherence (Beckerman & Aurbach, 2010; Brief et al., 2004; Simoni, Frick, & Huang, 2006). However, while the association between depression and adherence is well established (Mellins et al., 2009), the relative impact of PTSD in isolation and comorbidly with depression is less clear (Sherr et al., 2011). For example, Delahanty and colleagues (2004) found PTSD symptoms related to the HIV diagnosis to be associated with off-scheduled dosing, skipped medications and missed appointments. However, they did find CD4 cell counts to be positively associated with PTSD symptoms. Their evidence suggests that PTSD symptoms may be both positively and negatively related to adherence-related outcomes. In another study by Boarts and colleagues (2006), PTSD symptoms (index trauma was not necessarily the HIV diagnosis), were negatively correlated with ART adherence in the past week, and in regression analyses were predictive of lower adherence, along with depressive symptoms. Others have found PTSD, irrespective of its time course or index trauma (HIV-related or other-related trauma), to negatively impact adherence (Beckerman & Aurbach, 2011). The need for

investigation into PTSD and depression in PLWHA is two-fold. For one, PTSD, depression and their co-occurrence are often not screened for in primary care settings, and not screening may lead to missed diagnoses (Israelski et al., 2007; Vranceanu et al., 2007). Second, individuals who are successfully screened and treated for a mood disorder have better ART adherence (Lourdes, Maravi, Kobayashi, Barton, & Davidson, 2005). If we can begin to elucidate the unique impact of these two pathologies then we may begin to target specific areas for interventions to improve adherence and the quality of life of PLWHA.

Although adherence continues to be a primary research target in PLWHA, of equal importance is the impact of PTSD and depression on the quality of life of PLWHA. Specifically, goals of AIDS Clinical Trials Group (a large National Institutes of Health research group) include improvements in role and physical functioning, as well as reductions in HIV-related pain symptoms in PLWHA (Wu et al., 2005). We will refer to the cluster of variables (role and physical functioning and pain) impacted by disease severity and psychological distress as *functional impairment* (O’Cleirigh, Skeer, Mayer, & Safren, 2009). In HIV and non-HIV samples, PTSD and general distress have been associated with sleep disturbances, somatization of illness symptoms, fatigue, pain, and cardiovascular and respiratory symptoms (Andreski, Chilcoat, & Breslau, 1998; McFarlane, Atchison, Rafalowicz, & Papay, 1994; Vosnick et al., 2004). Physical symptoms associated with PTSD have also been linked to childhood sexual abuse (the disproportionate prevalence of CSA in Latino MSM was described earlier). A meta-analysis by Paras and colleagues (2009) reported that a history of sexual abuse was associated with greater odds for gastrointestinal disorders, chronic pain, and psychogenic seizures. Specific to HIV, studies have found PTSD and distress to predict impairments in work-related tasks, greater healthcare utilization, increased ART side effects, poorer perceived health, and fatigue-

related impairment (Barroso et al., 2010; Johnson & Neilands, 2007; O’Cleirigh, Skeer, Mayer, & Safren, 2009; Smith, Egert, Winkel, & Jacobson, 2002; Vidrine, Amick, Gritz, & Arduino, 2003; Vosnick et al., 2005). The neurobiological systems vulnerable to stress and depression have been implicated as possible mechanisms by which psychiatric morbidity may manifest itself as physical morbidity (Sherin & Nemeroff, 2011).

As a whole, HIV+ Latino MSM are at increased risk CSA, as well as physical and psychiatric morbidity. Evidence clearly links physical and psychological distress to non-adherence and faster disease progression. Furthermore, the high prevalence of psychological distress may lead to a life of physical discomfort, exacerbating illness symptoms and reducing overall quality of life.

1.8 Stress and Resilience

According to Ozer, Best, Lipsey and Weiss (2008), over half of the population will experience a traumatic life event that meets DSM-IV PTSD Criterion A2 (i.e., responding to a stressor with fear, helplessness or horror). However, prevalence estimates of individuals who go on to meet criteria for a PTSD diagnosis range from 5-10%. Thus, despite experiencing a traumatic life event, successful adaptation to the stressor occurs with high frequency. Therefore, it is not uncommon for individuals who have experienced a traumatic life event, such as CSA, to successfully adapt (Bonanno, 2004). *Resilience* is a key area of research in understanding how Latino MSM successfully adapt from a history of CSA and successfully manage HIV.

Two common definitions of resilience articulate the construct as a “dynamic process encompassing positive adaptation within the context of significant adversity” (Luthar, Cicchetti, & Becker, 2000, p. 543) and as “the process of, capacity for, or outcome of successful adaptation despite challenging or threatening circumstances” (Masten, Best, & Garmezy, 1990, p. 426).

Accordingly, resilience can only occur when two conditions are met: 1) experiencing a traumatic life event that poses serious threat and/or risk and 2) positive adaptation or successful outcomes despite the event (Masten, 2001). Resilience is therefore not considered a static trait, but a successful outcome (although what defines “success” is variable and open to interpretation; Masten & Obradovic, 2006). What is evidenced is that success, however defined, is achieved through a variety of psychosocial and environment competencies (Berger Cardoso & Thompson, 2010). The true nature of the biopsychosocial model is displayed in resilience research as a successful outcome or “bouncing back” from a stressor encompasses prosocial and interpersonal competencies, personality traits such as hardiness, optimism, self-enhancing and positive bias views, positive/adaptive coping responses, and psychophysiological indices of successful stress responses (Berger Cardoso et al., 2010; Bonanno, 2004; Campbells-Sills & Stein, 2007; Charney, 2004, Scott Heller, Larrieu, D’Imperio, & Boris, 2009). Furthermore, resilience is argued to not be *recovery* (Bonanno, 2004). For example, experiencing an episode of depression following a traumatic event highlights the recovery process, whereas resilience can be characterized as normal functioning with minor symptoms following a traumatic event.

Theoretical issues in resilience also highlight a variety of models that aim to describe the resilience process. For example, in her seminal review, Masten (2001) argues that research on resilience tends to focus on variable or person-focused models. In person-focused models, two groups are compared (resilient and non-resilient) and examined for factors that may contribute to their differences. In variable-focused models (the type employed for this dissertation), statistical tests attempt to highlight relationships among variables that examine resilience as a function of personal qualities (among others) and environmental factors. This point has also been extended by Scott Heller and colleagues (2009), who state that resilience likely requires a variety of

factors among variable-focused models, in which the goal is to understand unique and interactive relationships among predictors that will yield more telling results. That is, to what extent do predictors of resilience, such as protective factors (e.g., personal characteristics, family dynamics), stabilize/neutralize the impact of the adverse event, or weaken the impact of the adverse event (Luthar et al., 2000)? Addressing these theoretical concerns requires investigation of both variable and person-focused models. In this dissertation, the focus will be on personal characteristics associated with resilient individuals.

As discussed in **Section 1.6** above, there is sound evidence for considering the diagnosis of HIV as a severely stressful/traumatic event that meets DSM-IV Criterion A2 (i.e., responding with fear, helplessness and/or horror; Kelly et al., 1998; Nightingdale, Sher, & Hansen, 2010). Therefore, the diagnosis can be judged as the first criterion in the resilience process (experiencing an adverse circumstance that is life-threatening; Masten, 2001). Furthermore, the literature on CSA and successful resilient outcomes from CSA, irrespective of HIV status or sexual orientation, is extensive (Wilcox, Richards, & O’Keeffe, 2004). However, few have investigated resilience in the area of the HIV diagnosis and disease management and/or adaptive behaviors unique to MSM populations. As described above, MSM populations disproportionately experience greater numbers of traumatic life events, such as episodes of CSA and HIV infection (as detailed in **Section 1.4**). What is not clear is how to best conceptualize and operationalize resilience in HIV.

In a theoretical argument based on a review of the literature of HIV care in couples, van Eeden-Moorefield (2008) hypothesizes resilience to be successful management of their disease globally. Resilience in HIV is expected to be associated with social networks, social support, gay outness, ethnic identity and couple status. Herrick and colleagues (2011) also extend this

point in describing how HIV+ MSM show resilience. They argue that engaging in prosocial and advocacy causes can lead to improving in prevention efforts, decreasing stigma and improving the quality of life of PLWHA. This may be especially important in the area of disease management. After the advent of antiretrovirals, HIV has become more of a manageable disease seen less as a “death sentence” (Emlet, Tozay, & Raveis, 2010). For example, in 2006, an estimate of life expectancy with HIV was 24 years, and may be increasing (Schackman et al., 2006). In line with these HIV resilience conceptualizations, Kurtz, Buttram, Surratt, and Stall (2012) classified successful adaptation to HIV as adopting serosorting sexual behaviors (i.e., selecting partners with concordant HIV status), which reduces new infections, experiences of stigma, and risk for criminalization due to transmission. As expected, personal characteristics such as coping self-efficacy and positive coping strategies were predictive of this adaptive serosorting strategy in a sample of 504 MSM in Florida. In a qualitative study of 50 older adults living with HIV in the Pacific Northwest, resilience was described more generally as management of their disease through a variety of factors such as self-acceptance, optimism, purpose/will to live, and personal control (Emlet et al., 2010).

As a whole, the literature suggests that resilience in HIV is not uncommon. In this dissertation, we assess resilience through a measure of stress-coping ability (i.e., personal characteristics; **Section 2.3**) that are highly associated with resilient outcomes (Connor & Davidson, 2003). Therefore, according to resilience models, we are not assessing resilient outcomes in HIV+ MSM, although future studies could categorize PLWHA who achieve an undetectable VL and/or perfect adherence as resilient. What is hypothesized in this dissertation is that HIV + Latino MSM with higher “resilience scores” will demonstrate better health outcomes.

1.9 Summary

The data previously described justify the need to investigate the relative impact of HIV-related PTSD symptomatology and depression on adherence and functional impairment. This dissertation may have implications for proper screening in primary care settings and customizing interventions for psychiatric treatment and non-adherence. Furthermore, we attempt to understand these relationships in association with resilience characteristics, understanding that our measure of resilience captures stress-coping abilities highly correlated with resilient individuals. These stress-coping abilities (e.g., hardiness, optimism) are ubiquitous throughout the resilient literature in a variety of populations (Liem, James, O'Toole, Boudewyn, 1997; Scott Heller et al., 2009) and may be essential for identifying pathways towards developing resilience outcomes (Bonanno, 2004). Lastly, the objective of the study is to provide evidence that HIV-related PTSD is a collection of symptoms that impacts adherence and quality of life uniquely. Evidence for this objective would shed light on the debate of whether or not PTSD due to an illness diagnosis is unique, or part of a pattern suggesting that Latino MSM experience multiple (poly-traumatic) stressful events that are equally detrimental.

1.10 Aims and Hypotheses

Aim: Apply a diathesis-stress approach to understand psychological trauma and health (adherence) in a sample of HIV+ MSM (See Figure 1).

Diathesis variables refer to measures of neuroticism and childhood trauma.

Psychological distress variables refer to HIV-related post-traumatic stress and depressive symptomatology.

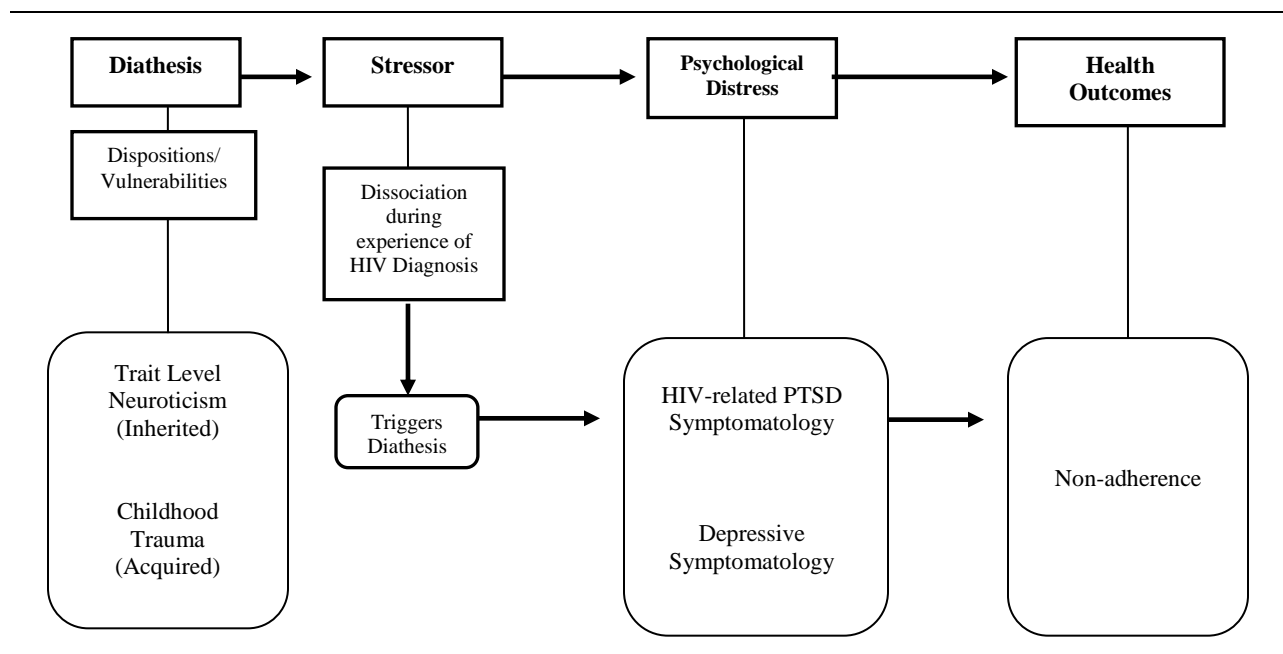


Figure 1. Conceptual illustration of the Diathesis-Stress Model. Diathesis triggered by stressors, which in turn leads to psychological distress, and indirectly affect health outcomes.

The Diathesis-Stress Model Fit Hypothesis

H1. We will model childhood trauma as an acquired (i.e., environmental) diathesis and trait levels of neuroticism as an inherited diathesis (i.e., genetic). The activating stressor will be dissociation at the time of the HIV diagnosis. That is, our diathesis variables will interact with dissociation and predict greater levels of HIV-related PTSD. Our diathesis variables will also exert an effect on depression directly. Lastly, resilience will mediate the relationship between depression, HIV-related PTSD, and adherence. All relationships will be maintained after controlling for both acculturation to non-Latino culture and accumulated life stressors (see Figure 2).

Diathesis Hypotheses

H1a: Higher levels of neuroticism, experiences of childhood trauma, and accumulated life stressors will be associated with higher levels of HIV-related PTSD symptoms, non HIV-related PTSD symptoms and depressive symptomatology.

H1b: Higher levels of dissociative symptoms during, or immediately after, being diagnosed with HIV/AIDS will be associated with higher levels of HIV-related PTSD symptomatology.

H1c: At low levels of dissociative symptoms, we expect a modest positive association between childhood trauma and HIV-related PTSD symptomatology. At high levels of dissociative symptoms, we expect a stronger positive association between childhood trauma and HIV-related PTSD symptomatology. This interaction will provide evidence for the diathesis-stress model. We also expect the same interaction effect with the diathesis variable of neuroticism.

H1d: Higher levels of acculturation to the U.S. will be associated with higher levels of PTSD and depressive symptomatology.

H1e: More acculturated participants (versus less) will have worse adherence (direct effect), and this relationship will be mediated by our three measures of psychological distress. More acculturation will be associated with greater psychological distress and subsequently worse adherence (indirect effect).

Stress Hypotheses

H2: Higher levels of HIV-related PTSD symptomatology will be associated with lower medication adherence, and this effect will be over and above the effect of non HIV-related PTSD and depressive symptomatology.

H2a: Self-reported success at coping with stressful situations (i.e., resilience) will moderate the relationship between HIV-related PTSD, non HIV-related PTSD and depressive symptomatology and medication adherence.

H2b: Subsequently, better adherence will be associated with better HIV biological markers.

H2c: All three measures of psychological distress will be positively intercorrelated.

H2d: We expect participants who have experienced childhood sexual abuse, versus those who have not, to report a greater level of current functional impairment and a greater ratio of somatic to nonsomatic symptoms of depression.

HIV-related PTSD Hypotheses

H3: *Avoidant* symptoms of HIV-related PTSD will have a negative effect on medication adherence, above and beyond that of *intrusive* and *hyperarousal* symptoms.

H3a: Levels of dissociative symptoms experienced at the time of diagnosis will be greater for those with a history of childhood trauma versus those who did not experience childhood trauma.

Chapter 2: Method

2.1 Procedure

Participants. All participants were recruited from Centro de Salud Familiar La Fe CARE Center in El Paso, Texas. La Fe CARE Center is a local federally-qualified health center that offers comprehensive HIV/AIDS services to those living on the U.S.-Mexico Border. Centro de Salud Familiar La Fe as a non-profit community-based organization has gained national recognition for its success in health promotion and disease prevention in predominately Mexican-American families.

Recruitment. Eligible patients were identified by clinic staff, which included medical assistants, nurses, or physicians. After a patient had been identified as a potential participant, a clinic staff member would complete a miniature checklist of inclusion criteria, asking each patient if they 1) were Latino or Hispanic, 2) were over 18 years of age, and 3) had a history of sex with men, and 4) were willing to talk with someone about completing a survey for \$30. If the patient met all inclusion criteria, the checklist with their contact information was given to the research assistant, who then scheduled an interview appointment at a later date. Once the appointment was scheduled, the research assistant explained the study and obtained consent for participation and chart review. After the consent was obtained, the research assistant administered the interview and survey measures in either English or Spanish, based on the preference of the participant. Participants were offered both a snack and a bottle of water during the interview. Afterwards, each participant was paid \$30 for completion of the full battery of measures, which lasted on average two hours.

Inclusion Criteria. To participate in the study, individuals must have: (1) been male (2) self-reported a history of sex with men (2) been at least 18 years of age, (3) been HIV-positive, (4) self-identified as Latino/Hispanic, and (4) been fluent in either English or Spanish.

Parent Study. Data collected for this dissertation come from the first wave of a two-wave longitudinal study (with one year follow-up) conducted by Dr. John S. Wiebe. The parent study is examining associations between substance use and sexual risk in HIV+ Latino MSM. Thus, certain inclusion and exclusion criteria and other restrictions for this dissertation were necessitated by the parent study. For example, because the parent study hypotheses are not examining medication adherence, participants were not required to currently be on antiretroviral therapy. In addition, all procedures set by the parent study were also followed in this dissertation. This includes the order of survey materials. The order of materials were set in order to maximize rapport between research assistant and participant by starting with the collection of demographic information, followed by more intrusive topics like risky sex and drug use. Weekly lab meetings were held with all research assistants and Dr. Wiebe to discuss recruitment, weekly progress, and any interviewing difficulties that may have arose. The parent study is funded by the National Institute on Drug Abuse.

2.2 Measures

Predictor Variables

Big Five Inventory- Neuroticism subscale (BFI-N; John, Donahue, & Kentle, 1991; see Appendix F). Neuroticism was measured using the 8-item Big Five Inventory Neuroticism subscale. The BFI-N consists of short statements using adjectives to describe the core elements of neuroticism. Participants read the stem “*I am someone who...*” and indicated their level of agreement with each item (e.g., “*gets nervous easily*”) on a 5-point Likert-type scale (“*disagree strongly*” to “*agree strongly*”). The subscale is intended to capture the personality characteristic associated with the propensity to feel negative emotions and associated cognitive traits. Benet-Martinez and John (1998) evaluated the reliability and factor structure of the BFI in English and

Spanish across two large college student samples consisting of Spanish-speaking American students, Spanish-speaking European students, and former and current college-educated Hispanics in the San Francisco Bay Area. Across both studies and language, internal consistency estimates for the neuroticism subscale ranged from .80-.86, negatively correlating with each of the remaining four personality factors (correlation range = -.14 to -.31, showing evidence of discriminant validity), and correlating positively with a separate measure of neuroticism ($r = .75$ in English & .80 in Spanish, showing evidence of convergent validity). Confirmatory factor analyses across two studies evidenced support for the hypothesized five-factor structure with no evidence for any language effects (Benet-Martinez & John, 1998). A study by John, Naumann and Soto (2008) found additional support for convergent validity with two separate measures of the big five factors: the Revised NEO Personality Inventory (NEO-PI-R) and Trait Descriptive Adjectives (TDA). The eight items of the BFI-N were summed to create a total continuous score. All BFI-N scores in tables and figures will be titled “neuroticism.”

Life Events Checklist (LEC; Gray, Litz, Hsu, & Lombardo, 2004: see Appendix J). The LEC is a 17-item checklist of traumatic events that occurred in a participant’s lifetime. This measure was used to assess pre-HIV diagnosis trauma that may create a diathesis for later development of HIV-related PTSD. Participants indicated to what extent they have experienced (“*happened to me*,” “*witnessed it*,” “*learned about it*,” “*not sure*,” or “*doesn’t apply*”) a traumatic event (e.g., serious accident, kidnapping). The LEC is most commonly used to assess personal experiences. Every event that has been personally experienced is given a score of one, while any other response (e.g., learned about it) is given a score of zero. If individuals endorsed the “*witnessed it*” category for items pertaining to sudden violent death, or having “sudden unexpected death of someone close to you,” they are also given a score of one. All items were

then summed to create a total score. The LEC has shown to have adequate psychometric properties. Test-retest reliability across 7 days was good ($r = .82$). No internal consistency estimates were generated because of the checklist format. While the items are all common traumatic events, endorsement of one item does not necessarily require imply the endorsement of other items. In addition to test-retest reliability, the mean kappa coefficient (.61) was also adequate, demonstrating agreement across similarly worded items on a separate measure of traumatic events. The LEC also demonstrated good criterion-related validity, correlating with measures of depression and anxiety, as well as multiple measures of PTSD (Gray et al., 2004). Traumatic event checklists have been used in multiple studies evaluating the role of accumulated negative traumas on various health outcomes in PLWHA (Leserman et al., 2000 & 2005; Leserman, Barroso, Pence, Salahuddin, & Harmon, 2008; Jones, Beach, Forehand, & Foster 2003; Roberts, Ciesla, Direnfeld, & Hewitt, 2001; Smith, Egert, Winkel, & Jacobson, 2002). Total LEC scores will be labeled in tables and figures as “accumulated life stressors.”

Early Life Physical and Sexual Trauma (see Appendix M). Early life physical and sexual trauma was assessed by following a method employed by three of the largest studies documenting the prevalence rates of childhood sexual abuse in Latino MSM (Arreola, Neilands, & Díaz, 2009; Arreola, et al., 2005 & Arreola et al., 2008) and adapted from Leserman and colleagues (1995) sexual and physical abuse history questionnaire (SPAQ). The SPAQ was originally validated in a sample of female patients suffering from gastrointestinal disorders and was shown to have high test-retest reliability (81% agreement over several months, all kappa coefficients $> .63$ between self-report and assessment by interview) and criterion-related validity when compared to a clinical interview. Following a similar method, Arreola and colleagues (2005, 2008 & 2009) classified early life sexual experiences into three categories: none,

consensual, and forced sex (i.e., nonconsensual). Participants were asked if they have had a sexual experience prior to the age of 16 (yes or no). If they indicated they had, they were then asked if it was forced (yes or no). Consensual sex prior to the age of 16 was not classified as forced sex. Participants were then be asked about frequency of forced sexual experiences on a 4-point scale (“*only once*,” “*more than once but not often*,” “*often*,” or “*very often*”), which is conceptualized as an index of total burden, with higher scores indicated more burden (Bremner, Vermetten & Mazure, 2000). The same method was employed in this dissertation for assessing the effects of CSA alone and of total burden, including physical and emotional abuse. These index measures of childhood physical and sexual abuse have been predictive of HIV-related fatigue (Leserman, Barroso, Pence, Salahuddin, & Harmon, 2008), disability and hospitalizations (Leserman et al., 2005), non-adherence (Leserman, Ironson, O’Clereigh, Fordiani, & Balbin, 2008) higher VL and lower CD4 cell count (Kimerling, Armistead, & Forehand, 1999), HIV/AIDS disease progression (Leserman et al., 2000) and risky sexual behavior by individuals at risk for HIV (Jinich et al., 1998). A single dichotomous item was created to compare differences in HIV+ Latinos with and without any history of CSA, as well as a score summing the frequency of all abusive events. If participants reported no physical or sexual abuse, or endorsed that all sexual encounters were consensual, they were given a score of zero. Total scores will be labeled in tables and figures as “childhood trauma.”

Acute Stress Disorder Scale (Bryant, Moulds, & Guthrie, 2000: see Appendix G). To assess dissociation during the experience of being diagnosed, we used the 5-item dissociation subscale from the Acute Stress Disorder Scale (ASD-D). The total score on this subscale was used to predict subsequent PTSD symptomatology. The ASD-D consists of five items assessing dissociative symptoms (e.g., “*feeling numb*,” “*feeling in a daze*,” “*feeling as if living in a*

dream,” and “*inability to recall specific details about the event*”) on a 5-point Likert-type scale (“*not at all*” to “*very much*”). The scale was originally validated in civilian trauma survivors (e.g., assault victims, those in severe car accidents) and shown to have good operating characteristics (sensitivity = .95, specificity = .83), adequate internal consistency ($\alpha = .83$) and good test-retest reliability from two to seven days ($r = .94$). The ASD scale has also been equally reliable and adequately predictive in two separate German samples (Helfricht et al., 2009). The four-factor structure of the complete ASD (three PTSD symptom clusters and dissociation) was supported in a sample of Chinese earthquake victims (Wang, Li, Shi, Zhang, & Shen, 2010), and although Edmondson, Mills and Park (2010) found a second-order two-factor structure worked best in a sample of Hurricane Katrina victims, the dissociation factor was found to stand alone as a separate factor. Total ASD-D scores will be labeled in tables and figures as “dissociation.”

Bidimensional Acculturation Scale (BAS; Marin & Gamba, 1996; see Appendix B). Acculturation was assessed using a bidimensional measure. The BAS is a 24-item measure of acculturation to Latino and non-Latino culture. Each dimension has 12 items rated on a four-point scale. The authors reviewed the literature for potential responses that characterize the process of acculturation, which led to item development and testing in a sample of Mexican Americans and Central Americans living in the U.S. ($N = 254$). Each dimension, consisting of 12 items, yields three factors that focus on *language use* when speaking or thinking, *language proficiency* in the areas of speaking, reading, writing, and understanding, and *electronic media* use from radio and television. Internal consistency estimates for all subscales, as well as total scores, across both dimensions were good (α range from .83-.97), as were validity estimates as assessed by correlations with other indicators of acculturation that include generational status, formal education, and a second self-report measure of acculturation (all correlations were in the

mild to strong range: $r = .28$ to $.79$). Scores were assessed by summing across the 12 items on both dimensions. Because participants in this study had the option to complete the survey in English or Spanish, it was expected that differences in outcomes may be attributed to differences in acculturation levels. Rather than the use of language as a proxy of acculturation, the BAS non-Latino culture subscale was used as a control variable for the differences in acculturation levels. Total BAS non-Latino cultures scores will be labeled in tables and figures as “acculturation.”

Outcome Variables

Patient Health Questionnaire (PHQ-9; Kroenke, Spitzer, & Williams, 2001; see Appendix E). The PHQ-9 is a self-report questionnaire that can be used to tentatively diagnose depression and monitor the condition over time due to its criterion-based, continuous scoring format. The PHQ-9 consists of nine items that follow the nine symptoms of the *DSM-IV-TR* diagnostic criteria for major depression. The instructions specify a two-week reporting period, with each item using a four-point response scale: “*not at all*,” “*several days*,” “*more than half the days*,” and “*nearly every day*.” Initial internal consistency reliability estimates for the PHQ-9 ranged from $\alpha = .80$ to $\alpha = .89$ in the original Primary Care and Obstetrics-Gynecology Studies (which included 974 Hispanics; Huang, Chung, Kroenke, Delucchi, & Spitzer, 2006; Kroenke et al., 2001; Spitzer et al., 1999; Spitzer et al., 2000). In other Hispanic samples, construct validity with the PHQ-9 has been assessed by correlating it with subscales from the Short-Form Health Surveys (with correlations ranging from $.51$ -. $.78$; Gross et al., 2005; Kroenke et al., 2001; Spitzer et al., 1999; Spitzer et al., 2000; Stewart, Hays, & Ware, 1988). Huang, Chung, Kroenke, Delucchi et al. (2006) conducted tests of differential item functioning on the PHQ-9 across ethnic and racial groups with the data from the original validation studies. They found that

Hispanics, when compared to Chinese-Americans and non-Hispanic whites, had higher scores on the adhedonia and appetite items, and lower scores on items referring to disturbances of sleep and feelings of guilt. However, no differences were found in overall mean scores or factor structure among Chinese, Hispanic, African and European Americans. Also, after controlling for socioeconomic status, no differences were seen in the endorsement of somatic or negative affect items. Data from this study suggest that no difference in cutoff scores is needed for Hispanics. A total score was created by summing responses to all nine items, and will be labeled in tables and figures as “depression.”

HIV-related PTSD and Non HIV-related PTSD Impact of Events Scale (Horowitz, Wilner, & Alvarez, 1979: see Appendix H and J). The Impact of Events Scale-Revised (IES-R) was used for the assessment of post-traumatic stress disorder symptomatology. The IES-R was adapted in one form to assess PTSD symptoms triggered by the experience of “*being diagnosed with HIV and associated stress of living with HIV.*” A second IES-R was administered in its original form to assess PTSD symptoms from the most traumatic event experienced, not including HIV diagnosis. The IES-R assessed the severity of avoidant, hyperarousal and intrusive PTSD symptomatology (e.g., “*I stay away from reminders of it,*” “*any reminders have caused me to have physical reactions,*” “*I had dreams about it*”) experienced in the past week in reference to either their HIV diagnosis experience or most traumatic event experienced. Each of the 22 items consists of a 5-point Likert-type scale response format from “*not at all*” to “*extremely.*” The IES-R has been used to assess PTSD symptomatology from an HIV diagnosis (Boarts, Buckley-Fischer, Armelie, Bogart, & Delahanty, 2009; Delahanty, Bogart, & Figler, 2004; Nightingale, Sher, & Hansen, 2010; Sledjeski, Delahanty, & Bogart, 2005) and HIV-related trauma more generally (Keuroghlian et al., 2011). A review of the original IES’

psychometric properties across 18 studies averaged acceptable internal consistency estimates ($\alpha = .82$ avoidance subscale, $\alpha = .86$ intrusion subscale) with 10 of 12 factor analytic studies supporting the two-factor structure (Sundin, 2002). The original IES has been revised (IES-R) to include the addition of 6 new items assessing hyperarousal symptoms, and one new and one revised item added to the intrusion subscale (14 of the original 15 items have remained unchanged; Weiss & Marmar, 1997). The addition of a hypothesized third factor (i.e., hyperarousal) performs equally well in terms of internal consistency and test-retest reliability (Weiss, 2007), but factor analytic studies have yielded support for both a two-factor (intrusion/hyperarousal and avoidance) and three-factor model (intrusion, hyperarousal, and avoidance) of PTSD symptomatology (Creamer, Bell, Failla, 2003; Lemogne et al., 2009; Sundin, 2002). Total scores were created by adding responses to each of the 22 items. Total IES scores will be labeled in tables and figures as either “HIV-related PTSD” or “non HIV-related PTSD.”

Connor-Davidson Resilience Scale (Connor & Davidson, 2003; see Appendix K). The Connor-Davidson Resilience scale (CD-RISC) is a 25-item measure of stress-coping ability (i.e., characteristics associated with resilient outcomes) with each response rated on a five-point scale, with higher scores indicating greater stress-coping ability. The authors of the original CD-RISC define resilience as “personal qualities that enable one to thrive in the face of adversity” (Connor & Davidson, 2003, p. 76) and thus developed items that intended to capture a variety of those personal qualities that define resilience. The original CD-RISC assessed the psychometric properties in six samples; 1) a general population (non-help seeking) sample ($n = 577$), 2) a psychiatric outpatient sample ($n = 139$), 3) a primary care sample ($n = 43$), 4) participants in a generalized anxiety disorder study ($n = 25$) and 5 & 6) two additional samples of participants

enrolled in an RCT for PTSD treatment ($n = 22$ & $n = 22$). Internal consistency for Sample One was good ($\alpha = .89$) as was test-retest reliability in Samples Four and Five ($ICC = .87$).

Furthermore, convergent validity was assessed by correlating CD-RISC scores with measures of hardiness ($r = .83$), perceived stress ($r = -.76$), and stress vulnerability ($r = -.32$), as well as social support ($r = .36$). An exploratory factor analysis yielded five factors that covered the areas of 1) personal competence, high standards, and tenacity, 2) tolerance of negative affect and strengthening effects of stress, 3) acceptance of change and secure relationships, 4) control issues, and 5) spiritual influences. In other studies with non-clinical samples, (Campbell-Sills & Stein, 2007; Singh & Yu, 2010), the CD-RISC has yielded similar four-factor models that include factors of hardiness, social support and purpose, faith, and persistence. However, strong correlations between factors and total scale reliability estimates suggest that responses from resilience items can be summed up to get a total score (Connor & Davidson, 2003). Thus, for this dissertation, a total score was computed by adding up responses to all 25 items and labeled in tables and figures as “resilience.”

ACTG Quality of Life: Physical, Role, and Social Functioning, and Pain Subscales (Wu & ACTG-QOL Subcommittee, 1999; see Appendix C). We assessed functional impairment due to HIV from four subscales of the AIDS Clinical Trials Group Quality of Life scale. These subscales consist a total of seven items assessing physical functioning (e.g., limited physical activities), role functioning (e.g., limited ability to maintain daily routine or roles), social functioning (e.g., reductions in social activities) and pain severity and its effect on normal activities. Participants respond to the extent to which their health or pain status has disrupted their daily routine and/or limited their ability to function. Analysis from a large national representative sample showed adequate levels of internal consistency for all subscales (alphas

ranged from .80-.91) and good criterion-related validity with a second validated measure of function impairment (all r coefficients $> .91$ -.94; Wu et al., 2005). As indicated in the scoring manual, the mixture of response formats (ranging from 1-3 to 1-6) requires all scores to be standardized and transformed on a scale from 0-100 prior to analysis (higher scores being indicative of better health; Wu et al., 1999). A total score was created after standardization by collapsing across all seven items. Total scores will be labeled in tables and figures as “functional impairment.”

Self-reported Adherence to HAART, Appointments & Biomarkers (See Appendix D and L). Lu and colleagues (2008) report past 30-day recall to be the most accurate measure of self-reported adherence to Antiretroviral Treatment (ART), correlating the strongest with objectively measured adherence (i.e., medication event monitoring systems, pill counts, biological markers; Giordano, Guzman, Clark, Charlebois, & Bangsberg, 2004). Our primary measure of adherence was a past 30-day visual analog scale (VAS). Aside from its validity, it was selected as the primary measure because it provides both a quantitative value (percent) and an optimal recall period (30 days; Amico et al., 2006; Giordano, Guzman, Clark, Charlebois, & Bangsberg, 2004). The VAS is a 10 cm line on which participants indicate the percentage of doses (intervals of 10 percentage points indicated from 0% to 100%) of all HIV medications taken in the past 30 days (Amico et al., 2006). The VAS has been shown to correlate well with objective measures of adherence (i.e., MEMS) and HIV biomarkers (Oyugi et al., 2004). Additionally, we also collected self-reported adherence with categorical labels and open-ended questions. These categorical labels were used to rate adherence ability (ranging from “*very poor ability*” to “*excellent ability*”) and frequency responses (e.g., number of missed doses; Lu et al., 2008). Open-ended items assessed for frequencies of missed doses in the past 30, as well as past 7 days.

The advantage of this short interval (7 days) is that individuals are more likely to report missed doses because this interval incorporates the most recent weekend when missed doses are likely to occur (Simoni et al., 2006). Finally, we assessed appointment adherence with three follow-up questions regarding number of appointments missed, missed and rescheduled, and missed and not rescheduled in the past 12 months (Bofill, Waldrop-Valverde, Metsch, Pereyra, & Kolber, 2011; O’Clereigh, Skeer, Mayer & Safren, 2009). The adherence questions were all prefaced by a short paragraph describing the difficulties of maintaining optimal adherence. The AIDS Clinical Trials Group (ACTG) has reported that highlighting the difficulties of maintaining adherence yields more truthful and accurate responding (Chesney et al., 2000). The VAS as the primary outcome will be labeled in tables and figures as “adherence.”

To demonstrate evidence for clinical generalizability of our findings, absolute CD4 and VL were extracted from patient medical charts. CD4 cell counts are an indicator of immune system functioning and used to diagnosis AIDS if less than 200, with a normal HIV negative individual range typically falling between 500 and 1500. CD4 cell count is reported as the number of CD4 cells per cubic millimeter of blood. Viral Load (VL) is the amount HIV present in a person’s blood. VL is reported as the number of copies of the virus per milliliter of plasma. Viral suppression, or achieving an undetectable VL, the ultimate goal of HIV ART treatments, is indexed by laboratory results showing a VL of less than 48 copies. We used lab results from blood samples drawn as close in proximity to the study interview date as possible. CD4 cell counts were analyzed as continuous data. Viral loads ranging from zero to less than 48 copies were set to zero (i.e., the range is due to the sensitivity of the test in detecting a low numbers of copies of the virus), which indicates an undetectable VL was achieved (Horberg et al., 2008; Simoni et al., 2009).

2.3 Analysis

Power Analysis

As detailed in **Section 2.2**, the data for this study were gathered in conjunction with the parent study, utilizing the same pool of participants. With a sample size of 150, all individual main effects in the multiple and hierarchical regression models were adequately powered ($>.80$) with alpha set to .05 and a conservative effect size estimate ($\beta = .23$). For individual mediated regression models, power was estimated from empirical simulation studies of estimated sample size for power set to .80 using a bias-corrected bootstrapping approach (Fritz & Mackinnon, 2007). The bootstrapping approach (i.e., resampling strategy) has been shown to be more powerful than the traditional causal steps approach to testing mediated effects (Mackinnon, Lockwood & Williams, 2004). Assuming regression paths (α and β) halfway between small and medium size (.26, or range of variance accounted from 2%-13%) requires a sample size of 148.

For our full path model (see Figure 2), power was estimated using software for computing minimal sample size using the root mean square error of approximation fit index (RMSEA; Preacher, Curran, & Bauer, 2006). We followed the recommendations from MacCallum and colleagues (2006) on estimating power between two nested covariance structure models (i.e., the parameters being estimated in Model A are nested within the larger Model B). To estimate a sample size for power equal to .88 using the procedure just described, we set alpha to .05 and RMSEA for Model A to .08 and for Model B to .05. Degrees of freedom for the two models were calculated based on the number of parameters estimated. The required sample size from our power estimation was 143.

Bootstrapping Approach: Testing Condition Process Models

To test our individual mediation hypotheses, a bootstrapping approach was utilized. Repeated samples yielding k number of randomly generated estimates of indirect effects ($k=10,000$) approximate an empirically derived sampling distribution of indirect effects that are then used to create a 95% confidence interval (using a percentile approach; Preacher, Rucker & Hayes, 2007). Furthermore, this method can be improved upon by applying a bias correction, as the sampling distribution that is derived can be, and often is, skewed (i.e., confidence intervals are often asymmetrical with respect to the upper and lower bound estimates surrounding the indirect effect; Fritz & Mackinnon, 2007; Preacher & Hayes, 2004). We utilized the bootstrapping approach to test our mediational hypotheses with the PROCESS SPSS macro for all conditional process models (i.e., moderated/mediation analyses; Hayes, 2012).

Path Analysis: Multivariate Multiple Regression

A path analysis was used (with Robust ML estimation due to violations of multivariate normality) to estimate the fit of our hypothesized diathesis-stress model (see Figure 2) with LISREL 8.8 statistical software (Jöreskog & Sörbom, 2006). First, a covariance matrix was generated with our exogenous variables (*neuroticism, childhood trauma, accumulated life stressors, acculturation, dissociation and interaction terms*) and our endogenous variables (*HIV-related PTSD symptomatology, depression, resilience and adherence*). A test of the covariance structure using joint criteria for estimating model fit was used. Achieving good model fit was based on a combination strategy of absolute and incremental fit indices suggested by Hu and Bentler (1999), as well as Kline (2011). These fit indices include: model chi-square statistics (χ^2), non-normed fit index (NNFI), comparative fit index (CFI), standardized root mean square residual (SRMR) and the root mean square error of approximation (RMSEA; Hu & Bentler,

1999). Figure 2 displays the path model for testing a general framework for the diathesis-stress model.

Missing Data

All data available for imputation had to be coded as either missing completely at random (MCAR) or missing at random (MAR), following the theoretical principles outlined by Rubin (1976). Data not missing at random (NMAR) were not imputed. If any data were MCAR or MAR, missingness was assumed to be unrelated to other observed data variables, or values of scores related to the missing score, itself. If missing data were coded as NMAR, they were assumed to be systematically associated with the values of the variable of interest, itself (Enders, 2006). For example, participants may have purposefully skipped questions related to trauma history because they felt uncomfortable, or may not have been able to recall a stressful event. Estimated missing data parameters are robust to either the MAR or especially the MCAR assumption. Simulation studies show that modern imputation methods can provide unbiased parameter estimates, such as the Multiple Imputation (MI) method for imputing data (Enders, 2006). All missing data in this dissertation were imputed using the MI method, with only one single imputation dataset requested using SPSS 21 statistical software (IBM Corp., 2012).

Chapter 3: Results

3.1 Sample and Scale Characteristics

Missing Data and Sample Size. Overall, a small percentage of data was missing and available for imputation (.097%). A total of 150 eligible participants were enrolled in the parent study from April 27, 2012 through March 3, 2013. One participant was dropped after completing the survey when it was discovered that he did not self-identify as MSM. Nine participants did not have available adherence data and thus all adherence analyses are constrained to a sample size of 140. Additionally, 21 participants reported having not experienced a traumatic event aside from the HIV/AIDS diagnosis. It should also be noted that if a participants reported no other major trauma, they were probed by study staff to confirm they could not recall a second event. All analyses pertaining to non HIV-related Impact of Event Scores are limited to 128. All other remaining analyses are constrained to a sample size of 149.

Scale Reliability. Internal consistency estimates for all scales and subscales were gathered to ensure all variables analyzed demonstrated adequate reliability. Cronbach's Alpha (Cronbach, 1951) was estimated for the measures of acculturation, neuroticism, depression, HIV-related PTSD symptoms, PTSD not related to HIV, acute stress symptoms, accumulated life stressors and resilience. All measures, aside from neuroticism and accumulate life stressors, demonstrated good total scale reliability (all alphas range from .84 to .96). Neuroticism and the measure for accumulated life stressors demonstrated adequate reliability (alpha = .79 and .74). All scale and subscale reliability and mean scores can be found in Table 3.

3.2 Descriptive Statistics and Demographic Information

Participant Characteristics. Data from the total of 149 eligible participants enrolled in the study were analyzed, with 63.8% completing the survey in English and 36.2% completing it

in Spanish. Participants' average age at the time of the interview was 42.2 years ($SD = 12.22$, median = 43). Also, at the time of the interview, participants' average number of years living with HIV was 9.52 ($SD = 7.50$; median = 8). As expected from previous studies at La Fe CARE Center, income in this sample was low. The median household annual income of participants was \$12,000 (SIQR = \$6,400).

A majority of participants were currently renters (38.3%), homeowners (27.5%) or living in a family home (26.2%), with few residing in non-family member homes (7.4%).

Approximately 32.2% of participants resided alone. A majority of participants were not currently in a committed relationship (55%), and of those who were, 14.1% had been involved with their partner for one to five years. Also, most participants were not currently working (59.7%), with the remaining percentage working either full-time (19.5%), part-time (12.8%) or odd jobs (8.1%). A large percentage of participants in this study self-reported identifying with a religion. Catholicism was the most common religion endorsed (61.1%), followed by other Christian (13.4%), and other religions (10.7%). A small percentage of participants did not identify with any religion (14.8%). Only a small percentage (12.8%) reported crossing over into Mexico at any point during the past year. Frequencies and percentages can be found in Table 1.

3.3 Prevalence of Traumatic Events, Stressors, Psychological Distress and Adherence

Childhood Trauma. We assessed childhood sexual abuse using a consensual versus nonconsensual assessment method, as recommended by Arreola and colleagues (2008). Additionally, we assessed for episodes of physical threats, physical abuse and verbal abuse using a dichotomous response scale (Yes or No). First, participants self-reported *any* sexual experiences prior to the age of 16. If an episode was reported, participants rated whether or not that experience was consensual or non-consensual, that is “*against your will...forced or*

Table 1
Participant Characteristics (N = 149)

Demographics	Mean (SD)	Frequency	%
Age (Years)	42.2 (12.2)		
Years living with HIV	9.52 (7.5)		
Annual Household Income	\$16,387 (19,363)		
Language Preference			
Spanish		54	36.2
English		95	63.8
Residency			
Homeowner		41	27.5
Renting		57	38.3
Living in family home		39	26.2
Living in non-family home		12	8.0
Employment Status			
Full-time		29	19.5
Part-time		19	12.8
Odd jobs		12	8.1
Not currently working		89	59.7
Relationship Status			
Not in a committed relationship		82	55
In a committed relationship		67	45
Religious Preference			
Catholic		91	61.1
Other Christian		20	13.4
Other		16	10.7
Do not identify with any religion		22	14.8

frightened by someone into doing something sexually that you did not want to.” A total of 66.4% of participants reported having one or more sexual experiences prior to the age of sixteen, with 34% reporting the sexual experience as being non-consensual. Overall, 22.8% of the sample reported one or more episode of childhood sexual abuse, with the average age when this abuse first occurred being 9.38 years ($SD = 3.61$). Our sample also reported high rates of episodes of physical threats (26.17%; *“threaten to physically hit or beat with intent to cause serious pain”*) physical abuse (30.8%), and verbal abuse (53.35%; *“say harmful things to you or about you with the intent to cause you emotional pain”*). Frequencies and percentages can be found in Table 2.

Table 2
Childhood Trauma Descriptive Statistics (N = 149)

	<i>Frequencies</i>	<i>%</i>
1. Any sexual experiences prior to the age of 16?	Yes = 99 No = 50	66.4 33.6
2. Was sexual experience nonconsensual?	Yes = 34 No = 65	34.3 65.7
2a. Nonconsensual experiences occur more than once?	Yes = 18 No = 16	52.9 47.1
3. Ever been physically threatened before the age of 16 (i.e., someone threatened to physically hit or beat you with intent to cause you serious pain)?	Yes = 39 No = 110	26.17 73.83
4. Ever been physically hurt before the age of 16 (i.e., actually physically hit or beat you with intent to cause you serious pain)?	Yes = 46 No = 103	30.8 69.2
5. Ever been verbally harmed before the age of 16 (i.e., say hurtful things to you or about you with the intent to cause you emotional pain)?	Yes = 78 No = 71	53.35 47.65

HIV Diagnosis. As described in **Section 1.6**, the DSM IV-TR (APA, 2000) states that a PTSD diagnosis must be triggered by the experience of a traumatic event (including diagnosis of a life-threatening illness) with the person's response to the event being characterized either as being frightened, feeling helpless and/or feeling horrified. For the purposes of this dissertation, two additional descriptive questions were added to the Acute Stress Disorder Dissociation subscale, asking whether or participants responded with feeling helpless and/or horror to the experience of being diagnosed with HIV. When participants were asked about the experience of being diagnosed with HIV, 68.5% reported feeling frightened, 63.1% reported feeling helpless, and 53% reported feeling horror. Frequencies and percentages of dissociation and ASD-D mean scores can be found in Table 3.

Life Events. As a covariate in our regression models, we assessed for accumulated life stressors, or negative experiences that participants directly experienced. These experiences can range from experiences of assault with a deadly weapon to a serious motor accident. Data have shown that exposure to negative life events disproportionately affects PLWHA (Whetten et al., 2008). Participants had, on average, experienced 4.4 traumatic life events ($SD = 3.06$) in their lifetimes. See Table 3 for frequencies and percentages.

Depression. Scoring criteria for depression (PHQ-9 scores) set by Kroenke and colleagues (2001) were followed in this study. The total sample mean was in the range (criterion range from 5 to 9) for mild symptoms of depression (Mean PHQ-9 = 6.8, $SD = 5$). Additional frequencies and percentages can be found in Table 3.

Post-Traumatic Stress Symptomatology. There are no standard cutoff scores for the Impact of Event Scale (IES) total and subscale scores that have been used for the diagnosis of PTSD. However, comparisons of mean scores across various samples and traumas have been used to demonstrate the IES' ability to distinguish between milder and more severe PTSD symptoms (Sundin, 2002). The total IES score, that is, PTSD symptomatology due to the diagnosis and stress of living with HIV, for our sample was 29.2 ($SD = 22.8$). In similar samples of PLWHA seeking care from either an outpatient clinic or AIDS organizations in U.S. Midwestern cities, the average IES total scores have ranged from 25 to 32 (e.g., Delahenty et al., 2004; Nightingdale et al., 2010; Sledjeski et al., 2005). Additional frequencies and percentages can be found in Table 3.

Table 3
Scale Reliabilities and Scores

Scale Name	Mean (SD)	Cronbach's Alpha
Bidimensional Acculturation Scale (Subscale Range = 0 to 36)		
- To Latino Culture (12 items)	25.63 (10.28)	.96
- To non-Latino Culture (12 items)	25.04 (8.63)	.94
Patient Health Questionnaire -9 (Total Scale Range = 0 to 27)		
- Total Scale (9 items)	6.85 (6.82)	.92
- Cognitive/Affective Items (5 items)	3.19 (3.63)	.88
- Somatic Items (4 items)	3.62 (3.48)	.87
Big Five Factor Inventory-Neuroticism Subscale (Subscale Range = 8 to 40)		
- Subscale Total (8 items)	25.11 (7.82)	.79
Acute Stress Disorder (Range = 5 to 25)		
- Dissociation Subscale (5 items)	13.79 (6.47)	.89
HIV-related PTSD Impact of Event Scale (Total Scale Range = 0 to 86)		
- Total Scale (22 items)	29.20 (22.08)	.96
- Intrusion Subscale (8 items)	10.81 (8.83)	.93
- Avoidance Subscale (8 items)	11.44 (7.99)	.89
- Hyperarousal Subscale (6 items)	6.94 (6.76)	.90
Non HIV-related PTSD Impact of Event Scale (Total Scale Range = 0 to 86)		
- Total Scale (22 items)	35.65 (22.08)	.95
- Intrusion Subscale (8 items)	14.30 (9.30)	.94
- Avoidance Subscale (8 items)	13.12 (7.49)	.84
- Hyperarousal Subscale (6 items)	8.22 (6.95)	.90
Connor-Davidson Resilience Scale (Total Scale Range = 25 to 125; 25 items)	96 (21.29)	.95
AIDS Clinical Trials Group Quality of Life Scale (Range 0 to 35; 7 items)		
- Functional Impairment Score	70.74 (26.55)	.91
Life Events Checklist (Range = 0 to 17; 17 items)	4.42 (3.06)	.75

Note: Ranges are possible minimum and maximum scale values.

Adherence. When asked about “*ability to take all your HIV*” medications in the past 30 days, 55.7% rated their ability to be “*excellent*,” followed by “*very good*” (27.9%), “*good*” (10%), “*fair*” (3.6%), “*poor*” (2.1%) and “*very poor*” (0.7%). When asked “*how often did you take all of your HIV*” medications in the past 30 days, 61.4% reported “*all of the time*,” followed

by “*most of the time*” (27.9%), “*a good bit of the time*” (5%), “*some of the time*” (3.6%), “*a little bit of the time*” (0.7%), and “*none of the time*” (1.4%). An average of 1.96 missed doses over the past 30 days was reported ($SD = 5.88$). With regards to percent of doses taken using the visual analog scale, an average of 91.6% was reported.

Appointment Adherence. Sixty-six percent of patients reported zero missed appointments, with only 9.7% reporting only missing one, and 12.5% reporting missing two. The remaining 11.8% reported missing three or more appointments. The overall mean number of missed medical appointments related to HIV care was less than one ($M = .89$, $SD = 1.8$). Of the participants who missed only one appointment, 40% reported not rescheduling that appointment, while 30% of participants who missed two appointments reported not rescheduling any missed appointments. Finally, among participants who missed three or more appointments, only 50% of the missed appointments were rescheduled. Frequencies and percentages for medication and medical appointment adherence can be found in Table 4.

HIV Biomarkers. HIV viral load (VL; a measure of the amount of virus in the blood) and CD4 cell count (a measure of immune system strength) are general indicators of adherence to ART. When available, laboratory blood results from participants were extracted from both electronic and paper medical records. All medical chart information was extracted as close to the interview date as possible. We were able to extract CD4 cell counts from 129 participants and VL from 124 participants. Missing laboratory tests were either caused one of the following reasons. Several participants had “partial” clinic status, which indicates that records were unavailable for data extraction. Others were missing from the catalog of files or unavailable to our study staff. Records were also not accessible due to new confidentiality policies whereby only medical providers are allowed to obtain VL information.

Table 4

Medication and Medical Appointment Adherence (N = 140)

	<i>Mean (SD)</i>	<i>Frequency (Percentage)</i>
1. How <i>often</i> did you take all of your HIV medications? (Past 30 days, categorical ratings).	5.40 (.96)	
- 1) None of the time		2 (1.4)
- 2) A little of the time		1 (0.7)
- 3) Some of the time		5 (3.6)
- 4) A good bit of the time		7 (5)
- 5) Most of the time		39 (27.9)
- 6) All of the time		86 (61.4)
2. How would you rate <i>your ability</i> to take all of your HIV medications? (Past 30 days, categorical ratings).	5.29 (.96)	
- 1) Very poor		1 (0.7)
- 2) Poor		3 (2.1)
- 3) Fair		5 (3.6)
- 4) Good		14 (10)
- 5) Very good		39 (27.9)
- 6) Excellent		78 (55.7)
3. In past 30 days, how many doses have you missed?	1.96 (5.88)	
4. Visual Analog Scale: From 0 to 100%, how much medication you have taken in the last month?	91.6% (16.05)	
5. Number of doses missed in past 7 days?	0.96 (3.7)	
6. Past 12 months, how many medical appointments did you miss?	0.89 (1.8)	
- Zero		95 (66)
- One		14 (9.7)
- Two		17 (12.5)
- Three or more		16 (11.8)
7. If an appointment was missed, how many were not rescheduled?		
- Zero		30 (63.8)
- One		7 (14.8)
- Two		6 (12.8)
- Three or more		4 (8.6)
8. Viral Load	11633 (48798)	
- Undetectable VL		92 (74.2)
- Detectable VL		32 (25.8)
9. CD4 Cell Count	545 (279)	

The average time between laboratory draws and date of interview in days was 54.4 ($SD = 97.27$, median = 28). The average VL was 11,633 copies ($SD = 48,798$). A total of 74.2% of our sample had an undetectable VL. In our sample, the average CD4 cell count was 545 per cubic millimeter of blood ($SD = 279$, median = 513; see Table 4).

3.4 Exploratory Analysis: Correlations between Outcomes and Predictors

Supplementary Analysis. Table 5 lists the results of correlations between adherence and predictor variables with the title of scale names abbreviated. The number of years living with HIV/AIDS was positively associated with number of missed doses in the past 30 days and past 7 days, and negatively associated with percent of doses taken and ability to take medication in the past month. Acculturation levels, as well as overall quality of life scores, were not correlated with any of our adherence measures.

Hypothesized Relationships. As hypothesized, depression was negatively associated with past 30-day categorical ratings of frequency of doses taken (e.g., very often, often) and categorical ratings of ability (e.g., excellent, good) and associated in a positive direction with the number of doses missed in past 30 days. Neuroticism was also similarly correlated with adherence measures, as well as with the percent of doses taken in past month. We failed to find support for our hypothesis that adherence would correlate with HIV-related PTSD symptoms, and only the categorical rating of frequency of doses taken in the past 30 days was negatively correlated with non HIV-related PTSD scores. However, ratings of accumulated life stressors did negatively correlate with categorical ratings of ability and frequency of doses taken, while resilience scores were positively correlated with the same measures. Lastly, as expected, having a history of abuse negatively correlated with categorical ratings of adherence. Neither CD4 cell

counts nor VL was associated with self-report measures of adherence. A matrix of adherence correlations with the title of scale names abbreviated can be found in Table 5 and 5a.

Table 5
Adherence Correlations

	Yrs. Living with HIV	BAS non- Latino Culture	ACTG- FI	PHQ-9	BFI-N	ASD- D	Non HIV IES	HIV IES	CDRIS C	CT	LEC
1. Frequency of doses taken (past 30 day, categorical ratings)	-.24**	-.03	.09	-.37**	-.31**	.03	-.17	.04	.17*	-.28**	-.22**
2. Ability to take all HIV medications (past 30 days, categorical ratings)	-.19*	.04	.12	-.34**	-.27**	.00	-.10	-.02	.26**	-.31**	-.17*
3. Doses missed in past 30 days	.19*	-.06	-.10	.26**	.25**	-.13	.12	-.06	-.07	.13	.16
4. Visual Analog Scale: percent of doses taken in past 30 days	-.19*	-.07	.15	-.28**	-.25*	.14	-.14	.04	.12	-.15	-.17*
5. Doses missed in past 7 days	.19*	.00	.01	.12	.15	-.11	.00	-.10	-.05	-.07	.09

* $p < .05$, ** $p < .01$. BAS = Bidimensional Acculturation Scale, ACTG-FI = AIDS Clinical Trials Group Functional Impairment (higher scores indicated better quality of life), PHQ-9 = Patient Health Questionnaire-9, BFI-N = Big Five Inventory Neuroticism subscale, ASD-D = Acute Stress Disorder Dissociation Subscale, Non HIV IES = Non HIV-related PTSD Impact of Event Scale, HIV IES = HIV-related PTSD Impact of Event Scale, CDRISC = Connor-Davidson Resilience Scale, CT = Childhood Trauma, LEC = Life Events Checklist (higher scores mean more accumulated stress).

The assessment of overall quality of life encompasses ratings across domains of physical, role, and social functioning ability, as well as pain severity and impairment in daily activities due to pain. As hypothesized, QOL ratings were negatively correlated with age, depression scores neuroticism, dissociative symptoms, HIV and non HIV-related PTSD symptoms, accumulated life stressors, and childhood abuse, and positively correlated with resilience. QOL scores were not correlated with acculturation and adherence measures. A matrix of correlations with the title of scale names abbreviated among all predictors can be found in Table 6.

Table 5a
Correlations Between Adherence Measures

	1. Frequency of doses taken (past 30 days)	2. Ability to take all HIV medications (past 30 days)	3. Doses missed in past 30 days?	4. Visual Analog Scale: percent of doses taken in past 30 days?	5. Doses missed in past 7 day?
1	1	.73**	-.66**	.73**	-.60**
2		1	-.32**	.63**	-.46
3			1	-.70**	.65**
4				1	-.61**
5					1

* $p < .05$, ** $p < .01$.

Table 6
Correlations Among Key Predictors

	1. BAS non-Latino Culture	2. BFI-N	3. CT	4. PHQ-9	5. HIV IES	6. Non HIV IES	7. ACTG-FI	8. CDRISC	9. LEC	10. ASD-D	11. Age
1	1	.20*	.08	.22**	.09	.12	-.05	.11	.13	.14	-.26**
2		1	.32**	.59**	.48**	.45**	-.35**	-.28**	.26**	.38**	-.18*
3			1	.30*	.16	.28**	-.18*	-.08	.44**	.18*	-.05
4				1	.50**	.49**	-.49**	-.35**	.30**	.32**	-.14
5					1	.57**	-.29**	-.09	.23**	.49**	-.26**
6						1	-.32**	-.15	.19*	.32**	-.10
7							1	.21*	-.26*	-.17*	-.19*
8								1	.02	.02	.00
9									1	.18*	-.18*
10										1	-.21**
11											1

* $p < .05$, ** $p < .01$. BAS = Bidimensional Acculturation Scale, BFI-N = Big Five Inventory Neuroticism subscale, CT = Childhood Trauma, PHQ-9 = Patient Health Questionnaire-9, HIV IES = HIV-related PTSD Impact of Event Scale, Non HIV IES = Non HIV-related PTSD Impact of Event Scale, ACTG-FI = AIDS Clinical Trials Group Functional Impairment (higher scores indicated better quality of life), CDRISC = Connor-Davidson Resilience Scale, LEC = Life Events Checklist (higher scores mean more accumulated life stressors), ASD-D = Acute Stress Disorder Subscale.

3.5 Hypothesis 1: Path Model- The Diathesis-Stress Model Fit Test

A central aim of the dissertation was to apply a diathesis-stress model to understand psychological trauma in a sample of HIV+ Latino MSM (see Figure 2). Conceptually, the diathesis-stress model views the presence of a disorder or disease as the function of dispositional characteristics (acquired or inherited) that have been activated by a stressor. We hypothesized that childhood trauma would be an acquired (i.e., environmental) disposition/vulnerability and trait levels of neuroticism would be an inherited (i.e., genetic) disposition/vulnerability. The activating stressor was hypothesized to be the HIV diagnosis; the level of dissociation was used as an index of the stress reaction to the diagnosis. Thus, we expect the stressor to trigger current symptoms of depression and HIV-related PTSD symptoms. We also predicted that resilience would mediate the relationship between these measures of psychological distress and adherence.

We used a multivariate multiple regression analysis to test the fit of a diathesis-stress model. As described earlier, during the data collection period, 21 participants stated that they had no other major traumatic event. Thus, the assessment of post-traumatic stress not related to an HIV diagnosis, assessed on the Impact of Event Scale (IES), was limited to 120 participants and not included in this analysis. Use of Non HIV-related IES scores would significantly reduce our statistical power as it limits the number of available data points. If non HIV IES scores were included, our power decreases from .88 to .40 with a sample size of 128. Non HIV-related IES scores do appear in our secondary analyses when compared to HIV-related IES scores.

Model Fit. According to the recommended combination of model fit criteria (Hu and Benter, 1999; Kline, 2011), our path analysis (see Figure 2; with Robust maximum likelihood estimation) testing the diathesis-stress model provided good model fit: Satorra-Bentler (S-B) χ^2 (36) = 39.21, p = .33, CFI = .99, NNFI = .99, RMSEA = .02 (90% CI = .00-.06), and SRMR =

.04. All fit indices met the threshold of good model fit (CFI and NNFI > .95, RMSEA < .05, and SRMR < .08). Thus, with a sample size of 140 (9 participants had no adherence data), the hypothesized model, following the design of the diathesis-stress model, was supported (see Figure 2).

Model Parameters. The multivariate regression approach to testing model fit was designed to evaluate the overall model. All individual parameters estimated are shown in Figure 2. As hypothesized, neuroticism was positively associated with depression. Neuroticism was not associated with HIV-related PTSD and did not interact with dissociation. Childhood trauma

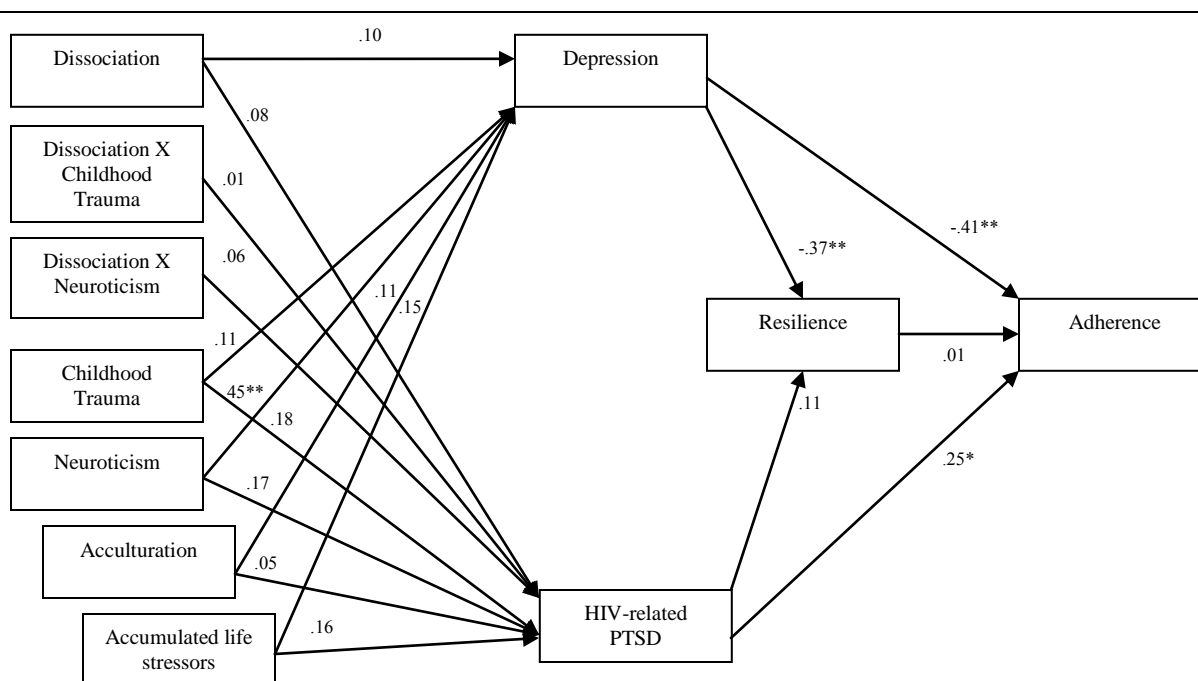


Figure 2. The Diathesis-Stress Model Fit Test. * $p < .05$, ** $p < .01$. Model Fit: Satorra-Bentler $\chi^2 (36) = 39.21$, $p = .33$, CFI = .99, NNFI = .99, RMSEA = .02 (90% CI [.00-.06]), and SRMR = .04. All regression coefficients are standardized estimates. Correlated disturbance between depression and HIV-related PTSD = .18, $p < .05$.

was neither associated with HIV-related PTSD nor depression alone, and did not interact with dissociation. Accumulated life stressors and acculturation to non Latino-culture was not associated with any outcomes in our model.

As hypothesized, HIV-related PTSD was positively correlated with depression. Both depression and HIV-related PTSD symptoms were associated with adherence, but not as expected; higher levels of HIV-related PTSD symptoms were associated with better adherence, depression with worse. Depression was negatively associated with resilience, which in turn did not exert an effect on adherence.

Test of indirect effects (mediation) using model parameters in this path model are subject to a multitude of statistical limitations and problems, such as increased risk of Type I errors (Morera & Castro, 2013; Hayes, 2009), and thus a more statistically sound approach was adopted for individual mediation test. Individual mediation analyses hypothesized were done using a bootstrapping approach. Details of all tests are discussed below in their respective sections.

3.6 Hypotheses 1a-1e: Associations among Predictors

H1a: *Higher levels of neuroticism and experiences of childhood trauma and accumulated life stressors will be associated with higher levels of HIV-related PTSD, non HIV-related PTSD and depressive symptomatology.*

As hypothesized, the correlation between neuroticism and depressive, HIV-related PTSD and non-HIV-related PTSD symptomatology was medium to strong ($r_s = .59, .48, .45, p_s < .01$). Thus, individuals with higher trait levels of neuroticism self-reported greater depressive and PTSD symptoms (see Table 6). As hypothesized, childhood trauma as assessed by sexual, physical and verbal abuse scores was moderately correlated with both depression ($r = .30, p < .05$) and non HIV-related PTSD symptoms ($r = .28, p < .01$), but not PTSD symptoms associated with the HIV diagnosis ($r = .16, ns$; see Table 6). Thus, dispositions (vulnerabilities) acquired through early life trauma/abuse were related to current levels of depression and PTSD symptoms due to a second major trauma. These data highlight a health disparity. HIV+ MSM

who also have a history of abuse tend to have experienced a greater frequency of other traumatic events. Lastly, we assessed for the association between accumulated life stressors and psychological distress. As described in **Section 3.3**, our sample of HIV+ Latino MSM had experienced an average of over four traumatic events in their lifetime ($M = 4.4$), as assessed with a checklist of 17 common traumatic events experienced in the general population. The accumulated life stressors in this sample were moderately correlated with depression ($r = .30, p < .05$), HIV-related PTSD symptoms ($r = .23, p < .05$) and non HIV-related PTSD symptoms ($r = .19, p < .05$; see Table 6).

H1b: *Higher levels of dissociative symptoms during the event of, or immediately after, being diagnosed with HIV/AIDS will be associated with higher levels of HIV-related PTSD symptomatology.*

A hierarchical regression analysis was run to test for the amount of unique variance that can be explained in HIV-related PTSD scores (Total HIV IES score) by dissociative symptoms (ASD-D scores), over and above Block 1 covariates of number of years since the diagnosis and amount of accumulated life stressors, and Block 2 covariates of feeling helpless, frightened, or horrified at the time of diagnosis (see Table 7). Correlations among predictors in this model are found in Table 6. As hypothesized, ASD-D scores were predictive of HIV-related PTSD symptom, contributing unique variance over and above all covariates in the model ($R^2\Delta = .11, p < .01$; ASD-D Total Score $\beta = .43, p < .01$). Total variance accounted for suggest that the linear combination of predictors in this model have a medium sized effect (adjusted $R^2 = .29, p < .01$). Our individual predictors in the model also demonstrate that individuals who have been living with HIV longer had lower HIV IES scores ($\beta = -.16, p < .05$). Only feeling helpless at the time

of the diagnosis, and not frightened or horrified, was predictive of greater HIV IES scores ($\beta = .21, p < .05$). Thus,

Table 7
Dissociation Predicts HIV-related PTSD Symptoms (N = 149)

Outcome: HIV-related PTSD				Model Summary
	β	t	p	$R = .56, F(1,142) = 22.96, p < .01$
Block 1				Adjusted $R^2 = .08$,
1. Years living with HIV	-.19	-2.44	.01	$F(2,146) = 7.38, p < .01$
2. Accumulated life stressors	.22	2.75	.01	
Block 2				Adjusted $R^2 = .18$,
1. Years living with HIV	-.17	-2.29	.02	$R^2\Delta = .11$,
3. Accumulated life stressors	.18	2.35	.02	$F(3,143) = 6.95, p < .01$
2. Feeling frightened at time of diagnosis†	.07	0.83	.40	
3. Feeling helpless at time of diagnosis†	.31	3.15	.01	
4. Feeling horror at time of diagnosis†	-.03	-0.38	.70	
Block 3				Adjusted $R^2 = .29$,
1. Years living with HIV	-.16	-2.25	.02	$R^2\Delta = .11$,
4. Accumulated life stressors	.13	1.85	.06	$F(1,142) = 22.96, p < .01$
2. Feeling frightened at time of diagnosis†	-.02	-0.29	.77	
3. Feeling helpless at time of diagnosis†	.21	2.13	.03	
4. Feeling horror at time of diagnosis†	-.13	-1.37	.17	
5. Dissociation	.43	4.78	.01	

† Denotes dichotomous response to Acute Stress Disorder Dissociation subscale items- A, B and C (Yes or No).
Bolded font signifies statistically significant effect.

our hypothesis that greater dissociative symptoms at time of diagnosis would be associated with greater levels of HIV-related PTSD symptomatology was supported.

H1c: *Dissociative symptoms at time of HIV diagnosis will moderate the relationship between childhood trauma and HIV-related PTSD symptoms. This interaction will provide evidence for the diathesis-stress model for acquired dispositions. We also expect the same interaction (moderating) effect with the diathesis variable of neuroticism, an inherited disposition.*

We hypothesized that the relationship between childhood abuse (acquired disposition) and HIV-related PTSD symptomatology would be moderated by symptoms of dissociation (e.g., feeling numb, in a daze, feeling unreal) at the time of, or immediately following, the experience of being diagnosed with HIV. We utilized the SPSS PROCESS macro to analyze both the conditional effect of childhood abuse and the moderating effect of dissociative symptoms on HIV IES scores, with the Johnson-Neyman technique (JN) for probing the range/level of values of moderator variable where the interaction is statistically significant (Preacher, Rucker, & Hayes, 2007). Also, it should be noted that this SPSS macro only generates unstandardized estimates (Hayes, 2012).

Both the conditional effects (i.e., simple effect) of dissociative symptoms and childhood abuse scores were statistically significant in predicting HIV-related PTSD symptoms (ASD-D $b = 2.09$, Childhood abuse $b = 2.67$, $ps < .05$). As hypothesized, the moderating effect of dissociation (interaction) was also statistically significant ($b = -.16$, $p < .05$). The JN technique demonstrated that the moderating effect took place at ASD-D scores in the range of 5 to 10.22 ($ts = 1.97$ to 2.68 , $ps < .05$; see Table 8). That is, reporting mild levels of dissociation at the time of diagnosis was associated with the strongest effect of childhood abuse on HIV-related PTSD symptomatology (95% CIs for moderating effect range from $bs = .01$ to 3.38). However, the hypothesis that higher levels of dissociation would lead to greater severity HIV-PTSD symptoms was not supported (see Table 8). The JN technique revealed that moderation only took place at mild levels, although it should be noted that a majority of participants reported minimum levels of dissociation. Thus, the evidence suggests that the relationship between childhood abuse and HIV-related PTSD symptoms was moderated by a mild dissociative reaction to the HIV diagnosis, versus a more severe reaction (see Figure 3).

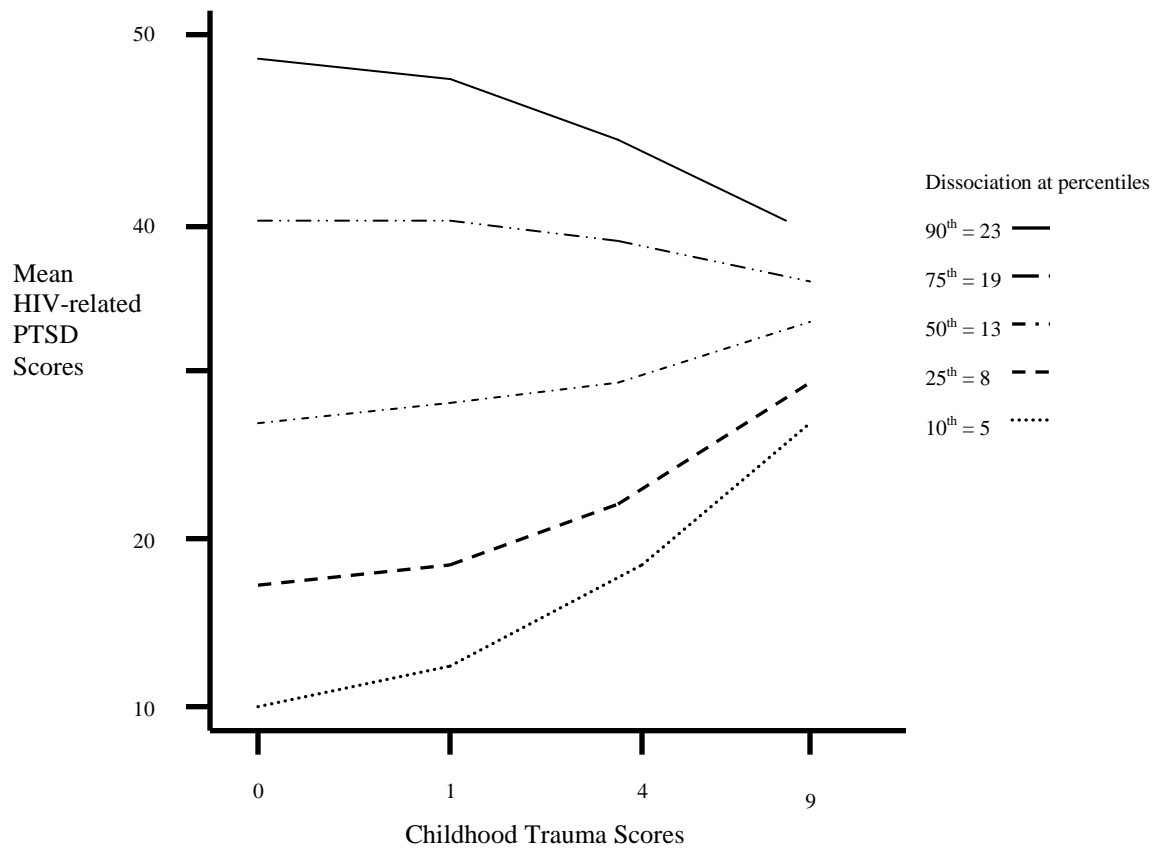


Figure 3. Hypothesis 1b: Childhood Trauma, HIV-related PTSD Symptoms and Dissociation. Conditional effect of childhood trauma on HIV-related PTSD Impact of Event Scale scores at percentile values of dissociation subscale scores. Lines represent the moderating effect of dissociation at 10th, 25th, 50th, 75th, and 90th percentiles. The Johnson-Neyman Technique revealed conditional effect to be statistically significant for dissociation scores between 5 and 11.23.

We also hypothesized a moderating effect of neuroticism on the relationship between dissociation and HIV-related PTSD symptomatology. However, this hypothesis was not supported. Only the simple effects of dissociation and neuroticism on HIV-related PTSD symptoms were statistically significant, and accounted for a unique amount of variability in HIV IES scores (adjusted $R^2 = .34, p < .01$). The interaction term was non-significant ($b = .03, ns$). Thus, we did not find evidence for the diathesis-stress model interaction for the inherited disposition of neuroticism as a vulnerability associated with HIV-related PTSD symptoms.

Table 8

Moderation: Childhood Trauma, Dissociation, and HIV-related PTSD (N = 149)

Outcome: HIV-related PTSD				Model Summary
	<i>b</i> (se)	<i>t</i>	<i>p</i>	Multiple <i>R</i> = .53, <i>F</i> (3, 145) = 16.72, <i>p</i> < .01
Model				Adjusted <i>R</i> ² = .28, <i>p</i> < .01
1. Dissociation	2.09 (.33)	6.17	.00	
2. Childhood Trauma	2.67 (1.01)	2.62	.00	
3. Dissociation X Childhood Trauma	-.16 (.07)	-2.15	.03	
Regions of Significance at Dissociation Values †				
1. 5.0	1.86 (.69)	2.68	.00	
2. 6.0	1.70 (.63)	2.67	.00	
3. 7.0	1.54 (.58)	2.63	.00	
4. 8.0	1.38 (.53)	2.57	.01	
5. 9.0	1.22 (.49)	2.46	.01	
6. 10.0	1.06 (.46)	2.29	.02	
7. 11.0	.90 (.44)	2.04	.04	
8. 11.23†	.86 (.43)	1.97	.05	
9. 9 > 11.23†	.74 (.43)	1.72	.08	

†Regions of Significance - Conditional effects produced by the Johnson-Neyman Technique. Values of ASD-D beyond 11.00 are not statistically significant. Bolded font signifies statistically significant effect.

H1d: *Higher levels of acculturation to the U.S. will be associated with higher levels of post-traumatic stress and depressive symptomatology.*

As hypothesized, acculturation to non-Latino culture (i.e., proficiency in English and its use in spoken communication and media) was positively associated with depression ($r = .22$, $p < .01$), while acculturation to the Latino culture (i.e., proficiency in Spanish and its use in spoken communication and media) was negatively associated with depression ($r = -.18$, $p < .05$).

Acculturation scores were not associated with HIV-related PTSD symptoms, non HIV-related PTSD symptoms, or accumulated life ors (see Table 6).

H1e: *More acculturated participants (versus less) will have worse adherence (direct effect), and this relationship will be mediated by our three measures of psychological distress. More acculturation will be associated with greater psychological distress and subsequently worse adherence (indirect effect).*

We hypothesized that the relationship between acculturation to non-Latino culture and percent of HIV medication doses taken in the past 30 days would be mediated by depression, HIV-related PTSD and non HIV-related PTSD symptoms. We utilized a bootstrapping resampling approach to test our mediating hypotheses ($k= 10,000$ bootstrap samples). As hypothesized, acculturation to non-Latino culture was predictive of greater depression (a path, $b = .13, p < .05$). We did not find support for our hypothesis that acculturation to non-Latino culture would be associated with greater HIV-related PTSD symptoms or non HIV-related PTSD symptoms (a path, $bs = .20$ and $.23$, ns). Next, the mediating variable of depression was associated with worse adherence (b path, $b = -.89, p < .01$), while HIV-related PTSD symptoms were associated with better adherence (b path, $b = .21, p < .05$). Non HIV-related PTSD symptoms were not associated with adherence. Finally, to test for statistically significant mediation effects, a 95% confidence interval for each mediating variable is reported. As hypothesized, the mediating effect of depression between the relationship of acculturation and adherence was statistically significant, 95% CI $[-.30, -.02]$, while the overall mediating effect for HIV-related PTSD and non HIV-related PTSD symptoms were not (see Figure 4). The 95% confidence interval for the partially standardized indirect effect was equal to $-.0179$ to $-.0009$. The partially standardized effect size estimate is interpreted as the number of standard deviations by which adherence is expected to decrease per change in depression of size $b = .13$ (Preacher & Kelley, 2011).

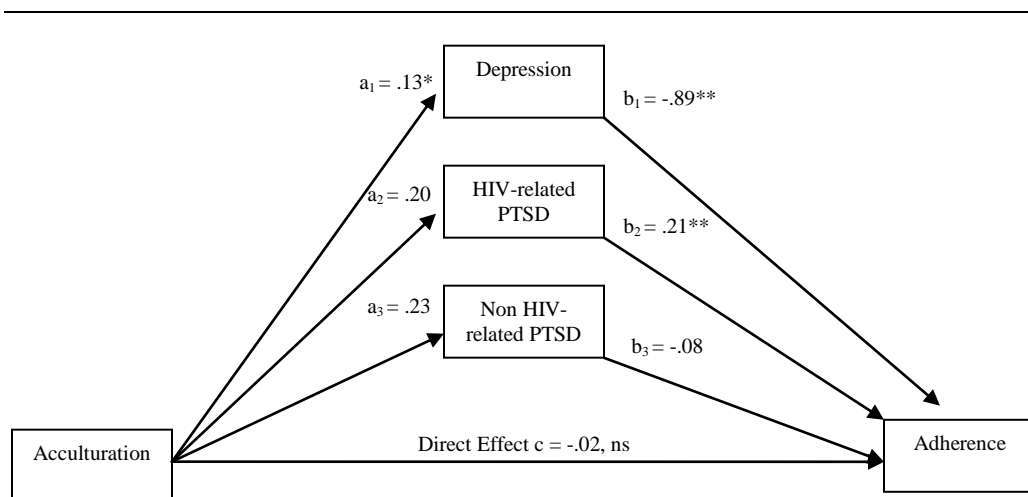


Figure 4. Acculturation, Psychological Distress and Adherence. $*p < .05$, $p < .01$ **. $k = 10,000$ bootstrapped samples. All path coefficients are unstandardized estimates. 95% confidence intervals for tests of statistically significant indirect effects: Depression = $[-.30, -.02]$, HIV-related PTSD = $[-.00, .18]$, non HIV-related PTSD = $[-.10, .00]$. Indirect effect for depression was statistically significant; indirect effects for HIV-related PTSD and non HIV-related PTSD were not statistically significant.

3.7 Hypotheses 2 to 2d: Stress-related Predictions

H2: *Higher levels of HIV-related PTSD symptomatology will be associated with lower medication adherence, and this effect will be over and above the effect of non HIV-related PTSD and depressive symptomatology.*

This hypothesis was intended to contribute to the ongoing debate about the relationship between HIV-related PTSD and adherence. As described in **Section 1.7**, there is evidence for HIV-related PTSD being both negatively and positively associated with adherence. We included both depression and PTSD scores from a second major trauma (non HIV-related PTSD IES scores) as covariates in our hierarchical regression analysis so that we may demonstrate the unique variance in adherence that accounted for by HIV-related PTSD (see Table 9). In Block One, we entered the covariates of acculturation, number of years living with HIV, and accumulated life stressors (adjusted $R^2 = .05$, $p < .05$). In Block Two, we entered both depression and non HIV-related PTSD symptom scores, which resulted in a statistically significant R^2

change value ($R^2\Delta = .06, p < .05$). Lastly, although in the opposite direction, HIV-related PTSD was associated with better adherence ($\beta = .27, p < .01$) and accounted for unique variance in the overall model ($R^2\Delta = .04, p < .05$).

Table 9
HIV-related PTSD Symptoms, Non HIV-related PTSD Symptoms, Depression, and Adherence (N = 113)

Outcome = Percent of doses taken in past 30 days		β	t	p	Model Summary
					Multiple $R = .42, F(1, 110) = 5.2, p < .05$
Block 1					Adjusted $R^2 = .05,$
1.	Accumulated life stressors	-.17	-1.9	.06	$F(3, 113) = 3.1, p < .05$
2.	Acculturation	-.08	-.95	.34	
3.	Years living with HIV	-.21	-2.3	.02	
Block 2					. Adjusted $R^2 = .10,$
1.	Accumulated life stressors	-.09	-1.01	.31	$R^2\Delta = .05,$
2.	Acculturation	-.04	-.47	.63	$F(3, 113) = 3.1, p < .05$
3.	Years living with HIV	-.25	-2.7	.01	
4.	Depression	-.26	-2.5	.01	
5.	Non HIV-related PTSD	-.01	-.13	.89	
Block 3					Adjusted $R^2 = .13,$
1.	Accumulated life stressors	-.10	-1.1	.26	$R^2\Delta = .03$
2.	Acculturation	-.02	-.22	.82	$F(1, 110) = 5.2, p < .05.$
3.	Years living with HIV	-.18	-1.9	.05	
4.	Depression	-.34	-3.2	.00	
5.	Non HIV-related PTSD	-.11	-1.06	.29	
6.	HIV-related PTSD	.27	2.8	.02	

Bolded font signifies statistically significant effect.

We purposefully included a non HIV-related PTSD symptom measure in our study to compare against HIV-related PTSD symptoms. It was hypothesized that PTSD symptoms related to HIV specifically would provide a unique effect on our outcome. However, the effect was in the opposite direction from that hypothesized. Furthermore, had the non HIV-related

PTSD scores been predictive of adherence, then there would have been evidence for an additive effect of multiple or poly-traumas.

H2a: *Self-reported success at coping with stressful situations (i.e., resilience) will moderate the relationship between HIV-related PTS, non HIV-related PTS and depressive symptomatology and medication adherence.*

As described in **Section 3.1**, nine participants had unavailable adherence data and 21 reported no other major traumas (non HIV-related IES scores); thus a multiple regression analysis testing for the moderating effect of resilience was constrained to participants who had complete data on the variables of interest in this analysis ($n = 117$). After entering covariates of years living with HIV and accumulated life stressors, we found no evidence that resilience moderated the relationship between HIV-related PTSD, non HIV-related PTSD, and depressive symptomatology and adherence outcomes. As expected, in our second step, depression had a negative association with adherence ($\beta = -.32, p < .01$). Lastly, in the opposite direction of what was hypothesized, HIV-related PTSD symptoms had a positive association with adherence ($\beta = .26, p < .05$). All interaction terms were non-significant and not reported in Table 10. The best fitting model is Model 2 in Table 10.

H2b: *Subsequently, better adherence will be associated with better HIV biological markers.*

We failed to find support for any associations between our self-report adherence ratings and either CD4 cell counts or VL. Additionally, CD4 cell counts as well as VL were not associated with any mental or physical health predictor variables.

H2c: *All three measures of psychological distress will be positively intercorrelated.*

As hypothesized, depression was positively associated with HIV-related PTSD symptoms ($r = .53, p < .01$) and non HIV-related PTSD symptoms ($r = .49, p < .01$). The two measures of

PTSD symptoms were also positively correlated ($r = .57, p < .05$). Additionally, while all three were positively correlated, in our regression analyses above (**H2a**), all variance inflation factor estimates were less than 1.8. Thus, there appears to be no issue of multicollinearity.

Table 10
Psychological Distress, Resilience and Adherence (N = 117†)

				Model Summary
Outcome = Percent of doses taken in past 30 days	β	t	p	Multiple $R = .41, F(5,111) = 4.6, p < .01$
Block 1				Adjusted $R^2 = .13,$
1. Years living with HIV	-.18	-1.98	.05	$F(5,111) = 4.6, p < .01$
2. Accumulated life stressors	-.10	-1.16	.24	
3. Depression	-.35	-3.26	.00	
4. HIV-related PTSD	.27	2.33	.02	
5. Non HIV-related PTSD	-.11	-1.07	.28	
Block 2				Adjusted $R^2 = .13,$
1. Years living with HIV	-.18	-2.0	.04	$R^2\Delta = .00,$
2. Accumulated life stressors	-.11	-1.22	.22	$F(1, 110) = .22, p > .05$
3. Depression	-.32	-2.79	.01	
4. HIV-related PTSD	.26	2.27	.02	
5. Non HIV-related PTSD	-.12	-1.09	.28	
6. Resilience	.05	.52	.60	

† Sample size altered due to unavailable adherence and Non HIV-related PTSD scores. Bolded font signifies statistically significant effect. Additionally, separate interaction terms for resilience and the three measures of psychological distress measures were not statistically significant and thus excluded from this table (Block 3 not included).

H2d: *We expect participants who have experienced childhood sexual abuse, versus those who have not, to report a greater level of current functional impairment and a greater ratio of somatic to nonsomatic symptoms of depression.*

We assessed, through a multiple regression analysis, the effect of childhood sexual abuse on overall functional impairment (i.e., quality of life, with high scores indicating better quality), after controlling for acculturation levels, years living with HIV, age, and neuroticism. As expected, both age and neuroticism levels were associated with greater functional impairment (β s

= -.34 and -.39, $p < .01$), but acculturation and years living with HIV were not (adjusted $R^2 = .17$, $p < .05$). Next, the effect of childhood sexual abuse specifically on functional impairment reached only marginal statistical significance ($\beta = -.13$, $p = .08$). Thus, it appears that lower quality of life levels are associated with age and personality traits such as neuroticism, and not acculturation or CSA alone. (see Table 11).

Table 11
Childhood Trauma, Functional Impairment and Somatic Symptoms of Depression (N = 149)

Outcome = Functional Impairment	β	t	p	Model Summary Multiple $R = .44$, $F(4, 144) = 8.8$, $p < .01$
Block 1				Adjusted $R^2 = .17$, $F(4, 144) = 8.8$, $p < .01$
1. Acculturation	-.04	-.53	.59	
2. Years living with HIV	.11	1.2	.20	
3. Age	-.34	-3.6	.001	
4. Neuroticism	-.38	-5.10	.001	
Block 2				Adjusted $R^2 = .18$, $R^2\Delta = .01$ $F(1, 143) = 2.9$, $p > .05$
1. Acculturation	-.03	-.39	.69	
2. Years living with HIV	.12	1.35	.17	
3. Age	-.34	-3.61	.001	
4. Neuroticism	-.37	-4.74	.001	
5. Childhood Trauma	-.13	-1.7	.08	

Bolded font signifies statistically significant effect.

We also assessed for the effects of abuse on the ratio of somatic to non-somatic depressive symptoms (range from 1 to 0). PHQ-9 somatic item scores were divided by the total score. A score of one indicates that the participant's depression rating is a function of only somatic symptoms, while a rating below one indicates less somatic symptoms and more cognitive symptoms. The mean ratio was .45, meaning that slightly more cognitive/affective symptoms were reported than were mild. However, our hypothesis that childhood abuse would

lead to a greater ratio was not supported. Only age was a statistically significant predictor in our model.

3.8 Hypotheses 3 and 3a: HIV-related PTSD Symptomatology

H3: Avoidant symptoms of HIV-related PTSD will have negative effects on medication adherence, above and beyond that of intrusive/reexperiencing and hyperarousal symptoms.

As shown above, we found a positive association between HIV-related post-traumatic stress symptoms and medication adherence. This hypothesis was intended to dissect the specific symptom clusters of PTSD that were associated with adherence, which include symptoms of *avoidant, intrusive* and *hyperarousal*. After entering our covariates in the model, the effect of HIV-related hyperarousal symptoms on adherence nearly reached statistical significance ($\beta = .34, p = .05$), while avoidant and intrusive symptoms were not associated with adherence. Thus, it appears that neither intrusive (constant reminding thoughts) nor avoidant (cognitive escape) are associated with either better or worse adherence. The effect appears to be driven by symptoms of arousal (see Table 12).

H3a: Levels of dissociative symptoms experienced at the time of diagnosis will be greater for those with a history of childhood trauma versus those who did not experience childhood trauma.

A key hypothesis in this dissertation is to assess whether or not individuals who have acquired a dispositional vulnerability through the experience of childhood abuse will exhibit greater number of dissociative symptoms at the time of being diagnosed with HIV. As hypothesized, participants with any history of childhood abuse scored two and half points higher on the dissociation scale than did participants with no history of childhood abuse ($t = 2.38, p < .05$; see Table 13). Secondly, we investigated the percentage of participants in both groups

who described the experience as being frightening or horrifying and/or leaving them feeling helpless. The percentages can be found in Table 7.

Table 12
HIV-related PTSD Symptom Clusters and Adherence (N = 140)

Outcome = Percent of doses taken in past 30 days				Model Summary
β	t	p	Multiple $R = .42$, $F(2,134) = 6.7$, $p < .01$	
Block 1				Adjusted $R^2 = .11$, $F(3,136) = 6.7$, $p < .01$
1. Acculturation	-.04	-.50	.61	
2. Years living with HIV	-.22	-2.72	.007	
3. Depression	-.29	-3.60	.001	
Block 2				Adjusted $R^2 = .14$, $R^2\Delta = .04$, $F(2,134) = 3.9$, $p < .05$
1. Acculturation	-.01	-.23	.81	
2. Years living with HIV	-.16	-2.02	.04	
3. Depression	-.42	-4.55	.001	
4. HIV-related PTSD Intrusion subscale	-.04	-.26	.79	
5. HIV-related PTSD Hyperarousal subscale	.30	1.79	.08	
Block 3				Adjusted $R^2 = .005$, $R^2\Delta = .00$, $F(1,133) = .83$, $p > .05$
1. Acculturation	-.01	-.23	.81	
2. Years living with HIV	-.15	-1.92	.05	
3. Depression	-.43	-4.59	.001	
4. HIV-related PTSD Intrusion subscale	.03	.15	.87	
5. HIV-related PTSD Hyperarousal subscale	.34	1.9	.05	
6. HIV-related PTSD Avoidance subscale	-.13	-.91	.36	

Bolded font signifies statistically significant effect.

Table 13

Childhood Trauma and Dissociation at Time of Diagnosis (N = 149)

Independent Samples t-test	Mean (SD)	<i>t</i>	<i>df</i>	<i>p</i>
No History of Childhood Trauma- Dissociation Score	12.44 (6.6)	-2.37	147	.01
Previous History of Childhood Trauma- Dissociation Score	14.94 (9.4)			

Chapter 4: Discussion

4.1 General Discussion: The Diathesis-Stress Model

The aim of this dissertation was to apply a diathesis-stress model to predict mental health problems and subsequent levels of adherence in a sample of low-income HIV+ Latino MSM living on the U.S.-Mexico Border. The path model proposed was a test of the predictors and relationships among these predictors outlined from the diathesis-stress perspective. That is, we successfully modeled the relationship between two diatheses, a trigger/stressor, mental health outcomes and adherence levels. All of the model fit indices suggested that the diathesis-stress framework as a whole was supported. While many of our individual path model parameters were not statistically significant, we did find evidence for the diathesis-stress reaction when the diathesis-stress reaction was tested separately. Despite the limitation of a cross-sectional research design, there are data to show how traumatic events (e.g., childhood abuse), especially if the victim has a perceived lack of control, can lead to a greater risk for mental health problems (Kendler, Karkowski & Prescott, 1999). The diathesis-stress model attempts to identify the link between drastically high prevalence rates of childhood abuse and the mental health problems that disproportionately affect MSM. It is hypothesized that the link may be vulnerabilities that are dormant until a trigger, such as an HIV diagnosis, manifests symptoms of depression and PTSD. The theoretical framework for the diathesis-stress model (i.e., the paths hypothesized in our model) was designed to test such hypotheses.

While the focus of the diathesis-stress relationship in this dissertation was between childhood trauma, neuroticism and HIV-related PTSD symptoms, we must also acknowledge that the effect of these diatheses on other behavioral and cognitive processes may have been present (i.e., the diathesis is not inconsequential until activation). On one hand, as outlined by

Monroe and Simons (1991), cognitive and/or behavioral symptoms of depression or PTSD may have been present prior to the HIV diagnosis, yet not meet a threshold that would warrant a diagnosis of a psychiatric disorder. Thus, one might mistakenly assume that the diathesis had little to no effect on HIV-related PTSD until it was activated by a stressor. According to this conceptualization, it is not until a stressor has activated the diathesis that the full impact of the diathesis is recognized. On the other hand, for a more cognitively-driven diathesis (e.g., neuroticism), the effect likely influences the person's perception of stress throughout their life. That is, following the acquisition of a diathesis or having an inherent diathesis creates a subsequent bias in behavior and/or alters perceptions of stressors. For example, the diathesis of childhood abuse as well as neuroticism could influence a person's ability to cope with stressful situations, thus leading to mild symptoms of depression prior to the HIV diagnosis. The HIV diagnosis only then fully manifests the effect of the diathesis. It may be the case that a mediating variable (e.g., coping) exist between the diathesis (and may exert a separate effect) and the pathology in question. This idea was supported in a meta-analysis by Paras and colleagues (2009) who found associations between childhood abuse and general non-specific pain in adulthood. The authors state that no validated theory exist to explain the relationship, however, the event of childhood abuse is likely the first step of a multistep process where many indirect effects exist that link the two.

However, there is evidence to suggest that childhood trauma is a unique diathesis, separate from other life stressors. Kessler and colleagues (1994) found that childhood trauma was more strongly associated with the early onset, rather than late onset, of psychiatric disorders, and that the risk (i.e., denoted by elevated odds ratio) for developing a psychiatric disorder were sustained longer than a typical life stressor experienced in adulthood. Additionally, in some

cases, the odds of developing disorder amongst individuals considered to be vulnerable become equivalent to individuals without the vulnerability, yet the disparities in mental health outcomes are still present. As always, the conceptualization of the diathesis-stress reaction should be guided by theory and epidemiological data (Monroe & Simons, 1991).

In the testing of the diathesis-stress interaction alone (see Figure 3), participants self-reported levels of dissociation at the time of their diagnosis, which included having mild feelings of being in daze or having an out of body experience, as if the diagnosis experience was unreal and dreamlike. To the extent they experienced these symptoms, they were said to have symptoms of dissociation due to the stressfulness of the HIV diagnosis. This study provides evidence for the stressfulness of the HIV diagnosis as a possible “trigger/stressor” (i.e., stress part of diathesis-*stress* model) for activating the acquired disposition of childhood abuse (i.e., diathesis part of *diathesis-stress* model) and manifesting symptoms of PTSD related to HIV.

We did not, however, find evidence for the HIV diagnosis activating the inherited disposition of neuroticism. It may be that neuroticism, while still associated with greater symptoms of depression and HIV-related PTSD, is not necessarily a “diathesis.” Rather, neuroticism acts as a propensity to experience mental health problems in general, especially in individuals with a history of childhood abuse (DeYoung, Cicchetti, & Rogosch, 2011).

Although our interpretation is limited by the correlational nature of our research design, there was a positive association between neuroticism and the number of traumatic events reported in the course of one’s life. It could be that individuals with greater tendencies to view events as negative are less likely to see the HIV diagnosis as a major event, given the severity of the disease itself. However, we cannot imply causality and are limited to only correlational inferences.

An additionally surprising result was that the average participant self-reported experiencing over four major events, a prevalence rate above that for comparable sample of PLWHA receiving treatment services in the Southeastern United States (Leserman et al, 2005). Furthermore, Leserman and colleagues (2005) have also demonstrated how accumulating life stressors increase the risk for disease progression from HIV to AIDS. Thus, it appears that Latino HIV+ MSM living on the border may have substantially higher risk for worse overall physical health outcomes through accumulating stressful life experiences.

While we modeled acculturation to non-Latino culture as a covariate, it was not predictive of mental health outcomes in our path model. However, when put through a bootstrapping mediation test, it was predictive of depression, which subsequently mediated the relationship between acculturation and adherence. Individuals who identified more strongly with non-Latino culture, whether or not they maintained an affiliation with Latino culture also, had worse depressive symptoms, subsequently associated with worse adherence. There appear to be no direct differences in levels of adherence between high and low acculturated Latinos. In light of these findings, we must recognize the temporal assumption we are making with regard to the causal order of our variables in our mediation test (Mathieu & Taylor, 2006). That is, we are hypothesizing that the mediator (depression) to be transmitting the effect from the predictor variable (acculturation) to the outcome (adherence). The validity of this sequence, which is based on a temporal and theoretical precedent, is vital to the generalizability of our findings. In addition, we were limited by the static nature of the assessment of our mediator. We chose our measure of acculturation (BAS) because it was contextually language based, brief and less burdensome to our chronically ill participants, and shown to have good psychometric properties. Although theorists have long argued that language-based measures oversimplify the acculturative

process, there is still no broader measure that has emerged definitively with strong psychometric properties (Alegria, 2009). Still, future studies on the development of acculturation measures are likely to benefit from the suggestions made by Lopez-Class and colleagues (2011), which call for the use of a more comprehensive multidimensional approach that considers regional and situational context, and potentially model the process over time (Castro, Marsiglia, Kulis, & Kellison, 2010).

Overall, the high rates of childhood trauma observed suggest that Latino MSM are disproportionately experiencing a greater numbers of adverse events. The frequency of these occurrences subsequently leads to a greater likelihood of experiencing worse physical and mental health outcomes. There is an urgent need to understand how interventions will either mitigate such elevated risk factors, or how protective factors stabilize or neutralize the impact of these adverse events. While we attempted to model resilience through a measure of problem-solving ability, nonsignificant findings related to this measure do not allow us to draw firm conclusions. Future studies should aim to provide both conceptual and operational definitions of resilient outcomes in HIV care, and probe for important determinants for successful outcomes. In conclusion, these data provide support for the model and the evidence that Latino HIV+ MSM with a history of childhood abuse may be more vulnerable to the mental health problems if dissociation occurs at the time of being diagnosed with HIV.

4.2 Childhood Trauma, Psychological Distress and Functional Impairment

Childhood Trauma. As expected, high rates of childhood sexual abuse (CSA) and overall trauma were observed, as were symptoms of depression and HIV-related PTSD. Over one in five participants self-reported at least one episode of sexual abuse (22%). Nearly one in three participants self-reported experiencing moderate-to-severe symptoms of depression (30.2%). The

prevalence of HIV-related PTSD symptoms was also comparable to that in other studies investigating PTSD symptoms in HIV+ samples (Leserman et al., 2005).

Twenty-two percent of our sample self-reported having at least one nonconsensual sexual experience prior to the age of 16, which is greatly elevated when compared to males in the general population (Rothman et al., 2011). While our prevalence rate was not as high as that reported by Jinich and colleagues in a Latino MSM sample (38%; 1998), our rate did match the rates found by Arreola and colleagues (2005, 2009). While we only collected information from Latinos, others have documented two-to-three-fold increases in abuse when compared to non-Latino counterparts (Carballo-Diéguez & Dolezal, 1995). Furthermore, over 30% of the participants in this study reported being victims of physical abuse, and approximately 50% being victims of verbal abuse in childhood. Thus, these data lend further support for raising awareness of the frequency of CSA, as well as other types of abuse, in the child and adolescent Latino community. Such drastic rates of childhood trauma should be viewed as a Hispanic health disparity contributing to poorer mental health and physical health outcomes.

The assessment of CSA in this sample was also significant in its methodology. We purposefully avoided applying a legal definition of CSA (e.g., prior to 16 with person older than 5 years) to avoid false positives. We assessed nonconsensual sexual experiences as due to force, fear, harm or coercion, and not solely based on an age difference. Two large studies in Latino MSM samples provide strong evidence for using this assessment method (Arreola et al., 2005, 2009). Previous data have shown no difference in mental health or risk outcomes in individuals *without* any sexual experiences prior to 16 and those *with consensual* experiences prior to 16 (Arreola et al., 2008). That is, MSM having consensual sexual experiences prior to the age of 16 are not more risk for mental health problems or greater risk behaviors. However, MSM with a

history of nonconsensual sexual experiences prior to the age of 16 are at increased risk for a variety of physical and mental health problems (Arreola et al., 2008). We demonstrated that abuse, alongside with accumulated life stressors, places the Latino MSM community at even greater risk for mental illness.

Psychological Distress. This dissertation, as well as previous work we have completed on the U.S.-Mexico Border, revealed that nearly one in three participants self-reported having moderate-to-severe symptoms of depression. According to the treatment recommendations provided by the PHQ-9 manual, persistent symptoms in this range would require prescription antidepressants or psychotherapy, with monitoring of patients' mental health also expected. Approximately one in five self-reported having milder symptoms of depression (PHQ-9 scores from 5-9), which are still burdensome and may have deleterious health outcomes. Not surprisingly, depression levels overall were associated with worse adherence and cognitive and somatic depressive symptoms separately were associated with lower physical, role, and social functioning, as well as associated with greater pain. However, we did not find evidence for greater somatization of depressive symptoms in this population. The severity of cognitive symptoms endorsed on the PHQ-9 was not significantly different from the severity of somatic symptoms reported, and both types of symptoms correlated positively with acculturation to non-Latino culture and negatively with acculturation to Latino culture. While we did not assess if participants were currently receiving medication or psychotherapeutic treatments for depression, future studies should control for both treatment regimens and potential genetic diathesis as indexed by family psychiatric history.

Functional Impairment. Compared to the general population, high rates of traumatic events and depressive symptoms were observed (Kessler et al., 2005; Leserman et al., 2005). As

expected, participants with worse symptoms of depression and PTSD reported greater functional impairment, through both limitations in social, physical and role functioning, as others have demonstrated (Keltner et al., 2012; O’Cleirigh et al., 2012). The functional impairment index (i.e., quality of life subscale) includes the assessment of pain severity and impairment due to that pain, which not surprisingly was associated with depression. In comparison to a larger study utilizing a random sampling method (a majority of participants were non Hispanic White HIV+ men), our functional impairment subscale scores were nearly equivalent (Wu et al., 2005). While we provide evidence for the functional impairment and depression relationship, what is still unknown is the best approach to the treatment of depression and functional impairment. The interplay of these two variables poses a serious medical challenge. For example, the data on which disorder to focus on, pain or depression, is not settled (Fishbein, Cutler, Rosomoff, & Rosomoff, 1997). This difficulty is further complicated by the variability of assessments of pain. Measures of pain can include that of severity, number of pain disorders, impairment due to the presence of pain, and whether or not pain is acute or chronic. Additionally, pain is likely to be exacerbated by untreated depressive symptoms (Keltner et al., 2012). Thus, a much more thorough dissection is needed to understand how to best target interventions treating the interplay of physical illness and psychological distress in PLWHA.

4.3 HIV Biological Markers and Adherence Outcomes

HIV Biological Markers. Despite the elevated rates of traumatic experiences, psychological distress and functional impairment, an undetectable VL was achieved in over 70% of our sample with available medical chart data. Due to a variety of factors related to the organization and transition from paper to electronic medical records at our study site, we could only obtain VL information from 73.8% of our sample. Of the files that were available, a

substantial number of participants did achieve an undetectable VL, which may be indicative of successful disease management, near perfect adherence, and resilience. In addition, the average CD4 cell count was 545, slightly above what is considered the minimum value of a healthy immune system. In HIV negative individuals, CD4 cell counts indicative of a healthy immune system can range from 500 to 1,500. It appears that in the presence of physical and mental health problems, participants are ultimately capable of achieving undetectable VLs.

It could also be argued that an undetectable VL may be a proxy indicator for the Hispanic Health Paradox. That is, despite disadvantageous circumstances, rates of viral suppression, among HIV+ Latino on ART living on the border, are comparable to the national average (Dombrowski et al., 2013). Unfortunately, we did not measure other Latino cultural factors such as family cohesion that some have argued are the mediating variables between disadvantages and successful health outcomes (Miranda, Estrada, Firpo-Jimenez, 2000; Rivera et al., 2008). Due to limited number of available medical records, and variability within these data (74.2% achieved an undetectable VL and thus a score of zero); we did not have the power for complex statistical analyses to elucidate what predictors contributed to VL levels (only a small group of participants had a VL greater than 48). Also, our estimate of CD4 was not associated with any self-report adherence measures, a finding that is not uncommon (Simoni et al., 2006). It may be the case that CD4 cell counts are not immediately changed by ART, as opposed to VL, and thus self-reported adherence is not necessarily directly reflective of immune functioning. It is likely that we were well underpowered with only 124 observations to make any firm conclusions, except that mean CD4 and VL indicated generally successful disease management. The second wave of data collection for the parent study (while not a part of this dissertation), may be able to provide

more revealing information as change scores from Time 1 and Time 2 in both VL and CD4 can be observed.

Adherence Outcomes. Estimates of adherence ability as well as frequency of all HIV medications taken in the past 30 days, using categorical ratings, were high (similarly compared to other studies; Lu et al., 2008). Over 88% of participants rated their near perfect ability to take all HIV medications. Also on a positive note, an average of only 2 doses were missed in the past month, with number of doses missed corresponding closely to percent ratings of all doses taken in the past 30 days using a visual analog scale (Mean VAS = 91.6%). Thus, in spite of high rates of childhood trauma and mental health problems, a majority of participants self-reported near perfect adherence. We did not, however, find support for the association between self-reported adherence and biological markers of HIV. Our null findings may be due to limited statistical power, as well as the fact that we did not artificially dichotomize the continuous variable that is CD4 cell counts for ease of interpretation. A review of studies analyzing the relationship between clinical outcomes and self-report measures of adherence show a frequent pattern of artificially dichotomizing CD4 and VL indicators (Simoni et al., 2006). These findings from these data are usually reported as odds ratios predicting the likelihood of achieving a detectable, versus undetectable VL status, and/or CD4 greater than or less than some clinical category (i.e., 500). Dichotomizing (or polychotomizing) a continuous/quantitative variable is subject to a variety of statistical limitations and inflation of Type I error rates (MacCallum, Zhang, Preacher, & Rucker, 2002). However, medically-justifiable reasons for doing so, such as having binary marker for treatment success, can benefit researchers who use self-report measures as predictors of HIV disease status.

For descriptive purposes, we also assessed self-report ratings of medical appointments missed and rescheduled, and missed and not rescheduled. Over 66% of all patients reported not missing an HIV-related medical appointment in the past year. If one appointment was reported as missed, 60% were rescheduled at a later date. However, if three or more appointments were reported as missed, 50% were reported as not rescheduled. Thus, it also appears that individuals who miss more than one medical appointment in a year may be at risk for being less engaged in their care. However, we were unable to assess through electronic records if missed appointments were actually rescheduled.

Overcoming appointment adherence problems may be vital to successful outcomes as HIV management requires lifelong medical attention. Our data suggest that a majority of participants are highly engaged in their own care. However, the remaining percentage may be vulnerable to worse health outcomes. Even in settings with few barriers to care, retention is still a problem that leads to decreased survival rates (Giordano et al., 2007). Furthermore, when barriers such as transportation issues (as anecdotally we have experienced at our study site) are present, appointment adherence is worse (Israelski et al., 2001). Retention in care continues to be a vital part of the strategy to increase rates of individuals achieving an undetectable VL and indirectly reduce transmission rates (Marks, Gardner, Craw & Crepaz, 2010; Mugavero et al., 2012). Missing appointments does not allow PLWHA to fully benefit from current treatment options and address problems as they arise (Catz, McClure, Jones, & Brantley, 1999), such as medication side effects. Although we were not powered to do so, future studies should investigate the small subset of participants who missed and did not reschedule appointments to identify barriers and predictors of poorer retention and engagement in care. The interplay of

medical appointment and medication adherence is vital to controlling the HIV epidemic domestically.

Although self-report HIV adherence ratings are overestimated in comparison to electronic drug monitoring results, they are still robust and provide clinical utility (Garber et al., 2004; Simoni et al., 2006). While we found no associations between self-reported adherence ratings and biological markers, it is encouraging that the average participant reported taking over 90% of all HIV medications, missing fewer than 2 doses in the past month, having “very good” to “excellent” adherence ability, and likely achieving an undetectable VL. These data further demonstrate the resilient nature of the HIV+ Latino MSM community.

4.4 HIV-related PTSD Symptomatology and Adherence

As expected, having a history of abuse was associated with having experienced more dissociative symptoms at the time of the HIV diagnosis. Subsequently, dissociation was found to be predictive of self-reported HIV-related PTSD symptoms, over and above the effect of accumulated life stressors. HIV-related PTSD symptoms would include reports of not wanting to think or talk about HIV, wanting to avoid reminders that one is living with HIV, or frequently having intrusive thoughts that one is HIV positive. While there are no cutoff scores on our measure that suggest the diagnosis of PTSD, our data suggest support for the hypothesis that PTSD symptomatology related to the HIV diagnosis can occur, and exhibits a unique effect on adherence outcomes (Martin, Fincham, & Kagee, 2009; Vranceanu et al., 2008).

We also found support for the diathesis-stress hypothesis as it relates to HIV-related PTSD symptomatology. The relationship between having a history of childhood abuse and current adult levels of HIV-related PTSD symptoms was moderated by dissociation at the time of diagnosis. However, it appeared that having a mild dissociative experience was associated with a

greater effect of childhood trauma on HIV-related PTSD symptoms than a more severe reaction (the JN statistical technique allows us to investigate at what levels the statistically significant moderation took place). It may be that a severely dissociative experience at the time of diagnosis is enough to trigger HIV-related PTSD symptoms alone, even in the absence of a diathesis such as childhood abuse. Thus, this could be the reason we did not observe a moderating effect at higher levels of dissociation. If this is the case, a future study investigating the predictive power of dissociation on HIV-related PTSD symptoms in individuals with no history of abuse is warranted.

Lastly, we compared PTSD symptoms related to HIV, to a measure of PTSD symptoms related to a second trauma. Participants were asked to recall a second major traumatic event that they had experienced in their lifetimes. We then compared the effect of non-HIV related trauma to the effect of HIV-related trauma to tease apart the unique effect PTSD symptoms related to HIV would have on medication adherence. Even though non-HIV related PTSD scores were higher, HIV-related PTSD scores uniquely predicted adherence. In our hierarchical regression, the effect of PTSD related to HIV was over and above that of depression, accumulated life stressors, acculturation, the number of years living with HIV, and PTSD symptom scores due to a second unrelated trauma. However, the direction of effect was the opposite of that hypothesized. While we replicated the finding that depression is associated with worse adherence, we also found PTSD related to HIV to be associated with better adherence. Others have found PTSD symptoms to be associated with greater odds of being adherent (Nilsson Schönnesson et al., 2007; Sledjeski et al., 2005). Similarly, when adherence levels between a group of participants reporting HIV-related PTSD symptoms were compared to a group reporting non HIV-related PTSD symptoms, the HIV-related PTSD group sustained higher levels of

adherence over a three-month period despite no changes in the severity of symptoms (Boarts et al., 2009). The trend for adherence to be associated with either better or higher levels of adherence for PLWHA reporting PTSD symptoms has been interpreted in two ways. First, there is a true effect, where symptoms of intrusion and reminders of the trauma serve as cues to take one's HIV medication. Second, there may be an as-yet-unidentified third variable at work. Nilsson Schönnesson and colleagues (2007) suggest that PTSD symptoms (especially intrusive thoughts) in some cases may improve medication adherence by serving as a continuous reminder, rather than being viewed as a distressing cognition. However, what remains to be seen is the effect of a dual diagnosis, where depression negatively affects adherences while PTSD improves it. Despite these issues, all analyses in this dissertation revealed PTSD symptoms related to HIV to have a unique positive association with adherence, while PTSD symptoms related to a second major trauma did not. Since hierarchical regression analyses were ran, and HIV-related PTSD symptoms were entered in our last step, it could be the case that our covariates and depressive variables removed all shared variability that was associated with worse adherence, and what remained was the variability in adherence associated with the protective factor of PTSD symptoms. Thus, HIV-related PTSD may have unique and unexpected positive health implications that are still not fully understood. Future studies with larger samples may be able to identify when and why this mental illness may have positive associated outcomes.

4.6 Limitations

The research findings in this dissertation must be interpreted in light of some methodological limitations. First, the cross-sectional design does not allow us to imply causal relationships among our predictor and outcome variables, and thus only associations and predicted patterns can be discussed. Second, the non-probability sampling method employed is

likely subject to convenience sampling bias, limiting generalizability. Third, many non-statistically significant parameter estimates in our path model (with a small sample size of 140), may be a function of inadequate statistical power. However, it should be noted that a rigorous power estimation method was employed to minimize the probability of making Type II errors. Fourth, while we employed a bootstrapping resampling method to overcome the problems with causal steps analyses in our test of indirect effects, resampling methods are only as generalizable as the sample is representative of the population of study. This is due to the fact that observed cases are continuously resampled, and if they are not truly representative of the population at large, results are subject to bias, and the inferential power of the test is minimized. Last, we are limited by use of only self-report measures of adherence, mental health outcomes, and retrospective recall of traumatic events. Future studies could benefit from inclusion of clinician-administered or structured interview ratings, electronic drug monitoring systems, and induction methods for recalling childhood events. However, we attempted to allay the retrospective recall limitation by minimizing the subjectivity of the event. We did not ask participants to rate how stressful an event was, but rather asked simply if it did or did not occur, and if so, how frequently. Also, this method was employed to reduce invoking anxiety as other, more explicit measures of childhood sexual abuse ask participants to report more graphic information. We also utilized self-report measures of medication adherence as our primary outcome, and thus these data are likely overestimated. However, we did see strong associations among all of these self-report measures, indicating good reliability. Despite this limitation, self-reported adherence can still be clinically useful as they are frequently predictive of HIV disease status (Buscher, Hartment, Kallen, & Giordano, 2011; Lu et al., 2008; Simoni et al., 2006).

While we did not record interview length, anecdotal reports from all research assistants suggest that the average interview was completed in 1.5 to 2 hours. Therefore, response fatigue could have occurred. However, research assistants were trained to continually offer assistance and offer breaks to participants if needed.

We attempted to assess for PTSD symptoms due to two contrasting traumas (i.e., HIV and non HIV-related). However, nearly 15% of respondents did *not* report a second major trauma (i.e., aside from the diagnosis of HIV that was assumed to be one of the most stressful experiences participants had in their lifetimes). We unfortunately were not able to ascertain whether this was due to a true lack of major stressors or a problem of recall.

4.7 Implication

Diathesis-Stress Model. Despite these limitations, the study has many implications for future interventions. Namely, we found childhood trauma to be a key predictor in our models. As previously demonstrated, disproportionately higher rates of childhood trauma are reported in MSM populations than the general population. Interventions targeted toward the MSM community should consider this vulnerability as a potential moderator. For example, it could be hypothesized that an intervention tailored toward MSM populations should expect different outcomes over time based on the presence or absence of a history of abuse.

As expected, the acute stress reaction at the time of diagnosis did moderate the relationship between childhood trauma and HIV-related PTSD symptomatology. This may have substantial implications for the opt-out testing strategy adopted by the Centers for Disease Control and Prevention (Branson, 2007). Opt-out testing is a strategy by which individuals are made aware that an HIV test will be performed unless they decline (i.e., opt-out), as opposed to individuals actively requesting to be tested (i.e., opt-in; CDC, 2006). Some have argued that

mandatory opt-out strategies, irrespective of a person's risk for HIV, may have unintended consequences (Galletly, Pinkerton, & Petroll, 2008). Namely, a person may not be expecting to be tested, and especially not expect to be positive, and thus may be overwhelmed by the experience of a positive result. In our data, the majority of MSM participants stated feeling frightened, helpless, and even horrified at the moment of being diagnosed. Not only is the diagnosis experience emotionally taxing, but testing centers should consider the resources available to the client, such as counseling services, treatment options for low-income individuals, skills in potentially dealing with stigma and disclosure concerns, and availability of HIV-specific medical care (Lifson & Rybicki, 2007). While this opt-out test strategy does have positive implications for early detection of HIV and greater probability of ultimately achieving an undetectable VL (Bartlett et al., 2008), it may have unintended consequences such as the development of PTSD symptoms related to the HIV diagnosis and/or depressive symptoms for individuals with poorer coping skills.

Resilience. Even though our measure of resilience did not perform as expected, we did find high levels of self-reported adherence and a large percentage of participants having undetectable VLs and healthy immune systems. That is, despite the frequency of childhood traumas, life stressors, and mental and physical health problems, HIV as a life-threatening disease was successfully managed in most patients as indexed by objective health outcomes. Future interventions should tease apart the identifiable characteristics of individuals who are resilient (e.g., those who achieve an undetectable VL), from those who are not (e.g., those who struggle with adherence and have a detectable VL). Elucidating the key characteristics of resilient individuals, whether they be psychological, social, environmental or structural, may greatly aid in improving the quality of life of PLWHA. Furthermore, identifying characteristics

typical of resilient individuals may aid in interventions targeting problem-solving and coping skills. Ultimately, understanding resilience in HIV care may greatly benefit individuals struggling with adherence who may be at risk for disease progression from HIV to AIDS.

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Appendix A

Demographic Survey in English and Spanish

Respondent ID code: _____
Date of Interview: _____
Time of Interview: _____
Referral Source: _____

Location of Interview: _____
Name of Interviewer: _____
Language of Interview: _____

1. What is your date of birth? _____ / _____ / _____
(Month) (Day) (Year)

2. Are you of Mexican descent?
Yes ☐ No ☐

3. Where do you currently live?
☐ A house, apartment, condo or room you rent
☐ A house, apartment, or condo you own
☐ A family member's house, apartment, or condo
☐ Someone else's house, apartment, or condo (that is not family)
☐ Shelter /group home
☐ Other: _____ [write in your response]

4. In your current living situation, with whom do you live? [Check all that apply]
☐ Spouse or Partner
☐ Children
☐ Parents
☐ Other family
☐ Friends
☐ Roommates
☐ Alone (by myself)

5. How many other people, not including yourself, do you live with? _____

6. In the past 12 months, have you lived in Mexico for any part of the time?
Yes ☐ No ☐

7. What is your highest level of education: _____

8. Please check the box that best describes your employment status.
☐ Working at a full-time job
☐ Working at a part time job
☐ Working odd jobs
☐ Not currently working

9. What kind of work do you do, or if you are unemployed, what kind of work have you done in the past?

10. Altogether, what is your annual household income from all sources?
(Including welfare, wages, food stamps, child support, and legal/illegal activities)

\$ _____

11. How do you think of yourself?

☐ Heterosexual only ☐ Heterosexual mostly ☐ Heterosexual somewhat more ☐ Hetero/gay equally ☐ Gay somewhat more ☐ Gay mostly ☐ Gay only

12. Are you currently in a committed relationship with a primary partner?

☐ No.....→ (go to question 13)
☐ Yes

12a. Is your current primary partner...?

☐ A man
☐ A woman

12b. How long have you been involved with your primary partner?

☐ Less than 6 months
☐ 6 months to 1 year
☐ 1 to 5 years
☐ 6 to 10 years
☐ More than 10 years

12c. Are you currently living with your primary partner?

Yes ☐ No ☐

12d. Are you currently legally married to this primary partner?

Yes ☐ No ☐

12e. Are you currently legally married to someone who is not your primary partner?

Yes ☐ No ☐

12f. What is your partner's highest level of education? _____

12g. What is your partner's occupation? _____

13. Have you ever been divorced?

Yes ☐ No ☐

14. What is your religious preference?

☐ I do not identify with any religion
☐ Catholic
☐ Other Christian
☐ Other _____

15. Date of HIV diagnosis: (MM/DD/YY)____/____/____

(Use 15th day of month if exact day is unknown)

Respondent ID code: _____ **Location of Interview:** _____
Date of Interview: _____ **Name of Interviewer:** _____
Time of Interview: _____ **Language of Interview:** _____
Referral Source: _____

1. ¿Cuál es su fecha de nacimiento? ____ / ____ / ____
(Mes) (Día) (Año)

2. ¿Es usted de origen mexicano?
Sí ☐ No ☐

3. ¿Dónde vive usted actualmente?
☐ Casa, departamento, condominio o cuarto que usted renta
☐ Casa, departamento o condominio de su propiedad
☐ Casa, departamento o condominio de un familiar
☐ Casa, departamento o condominio de alguna otra persona (que no sea familiar)
☐ Casa de Albergue/Hogar de Grupo
☐ Otro: _____ [anote su respuesta]

4. En el sitio, donde usted vive actualmente, ¿con quién vive? [Marque todas las que correspondan]
☐ Cónyuge o Pareja
☐ Hijos
☐ Padres
☐ Otros familiares
☐ Amigos
☐ Compañeros de Cuarto
☐ Solo (por mi cuenta)

5. Sin incluirse usted, ¿Con cuántas otras personas vive? _____

6. Durante los últimos doce meses, ¿ha vivido en México por algún tiempo?
Sí ☐ No ☐

7. ¿Cuál es su nivel más alto de educación? _____

8. Por favor marque el cuadro que mejor describa su situación laboral.
☐ Trabajo de tiempo completo
☐ Trabajo de tiempo parcial
☐ Trabajo esporádico
☐ No trabajo actualmente

9. ¿Qué tipo de trabajo hace, o si es desempleado, que tipo de trabajo ha hecho en el pasado?

10. En total, ¿cuál es el ingreso familiar anual de su hogar incluyendo todas las fuentes de ingreso?
(Incluyendo asistencia social (welfare), salario, food stamps, child support, actividades legales o ilegales)

\$ _____

11. ¿Cómo piensa usted de sí mismo?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Heterosexual Únicamente	Mayormente heterosexual	Un poco mas heterosexual	Hetero/ homosexual Por igual	Un poco mas homosexual	Mayormente homosexual	Homosexual únicamente

12. ¿Se encuentra usted actualmente en una relación de compromiso con una pareja principal?

- ☐ No..... → (pase a la pregunta 13)
☐ Sí

12a. ¿Su pareja actual es...?

- ☐ Hombre
☐ Mujer

12b. ¿Por cuánto tiempo ha estado involucrado con su pareja principal?

- ☐ Menos de 6 meses
☐ 6 meses a 1 año
☐ 1 a 5 años
☐ 6 a 10 años
☐ Más de 10 años

12c. ¿Está viviendo actualmente con su pareja principal?

Sí ☐ No ☐

12d. ¿Está legalmente casado con esta pareja principal?

Sí ☐ No ☐

12e. ¿Está legalmente casado con alguien que no es su pareja principal?

Sí ☐ No ☐

12f. ¿Cuál es el grado de educación más alto de su pareja? _____

12g. ¿Cuál es la ocupación de su pareja? _____

13. ¿Se ha divorciado alguna vez?

Sí ☐ No ☐

14. ¿Cuál es su preferencia religiosa?

- ☐ No me identifico con ninguna religión
☐ Católico
☐ Otra que es Cristiana
☐ Otra religión: _____

15. Fecha del diagnostico del HIV (VIH): (MM/DD/YYYY) ____/____/_____
 (Use el 15 del mes si no sabe el día exacto)

Appendix B

Bidimensional Acculturation Scale in English and Spanish

BAS: Please circle the number that corresponds

Language Use Subscale	Almost never	Sometimes	Often	Almost Always
1. How often do you speak English?	1	2	3	4
2. How often do you speak in English with your friends?	1	2	3	4
3. How often do you think in English?	1	2	3	4
4. How often do you speak Spanish?	1	2	3	4
5. How often do you speak in Spanish with your friends?	1	2	3	4
6. How often do you think in Spanish?	1	2	3	4

Linguistic Proficiency Subscale	Very Poorly	Poorly	Well	Very Well
7. How well do you speak English?	1	2	3	4
8. How well do you read in English?	1	2	3	4
9. How well do you understand TV programs in English?	1	2	3	4
10. How well do you understand radio programs in English?	1	2	3	4
11. How well do you write in English?	1	2	3	4
12. How well do you understand music in English?	1	2	3	4
13. How well do you speak Spanish?	1	2	3	4
14. How well do you read in Spanish?	1	2	3	4
15. How well do you understand TV programs in Spanish?	1	2	3	4
16. How well do you understand radio programs in Spanish?	1	2	3	4
17. How well do you write in Spanish?	1	2	3	4
18. How well do you understand music in Spanish?	1	2	3	4

Electronic Media Subscale	Almost never	Sometimes	Often	Almost Always
19. How often do you watch TV programs in English?	1	2	3	4
20. How often do you listen to radio programs in English?	1	2	3	4
21. How often do you listen to music in English?	1	2	3	4
22. How often do you watch TV programs in Spanish?	1	2	3	4
23. How often do you listen to radio programs in Spanish?	1	2	3	4
24. How often do you listen to music in Spanish?	1	2	3	4

BAS: Marque con un círculo el número entre 1 y 4 a la respuesta que sea más adecuada para usted.

Language Use Subscale	Casi nunca	Algunas veces	Frecuente-mente	Casi siempre
1. ¿Con qué frecuencia habla usted inglés?	1	2	3	4
2. ¿Con qué frecuencia habla usted en inglés con sus amigos?	1	2	3	4
3. ¿Con qué frecuencia piensa usted en inglés?	1	2	3	4
4. ¿Con qué frecuencia habla usted en español?	1	2	3	4
5. ¿Con qué frecuencia habla usted en español con sus amigos?	1	2	3	4
6. ¿Con qué frecuencia piensa usted en español?	1	2	3	4

Linguistic Proficiency Subscale	Muy mal	No muy bien	Bien	Muy bien
7. ¿Qué tan bien habla usted inglés?	1	2	3	4
8. ¿Qué tan bien lee usted en inglés?	1	2	3	4
9. ¿Qué tan bien entiende usted los programas de televisión en inglés?	1	2	3	4
10. ¿Qué tan bien entiende usted los programas de radio en inglés?	1	2	3	4
11. ¿Qué tan bien escribe usted en inglés?	1	2	3	4
12. ¿Qué tan bien entiende usted música en inglés?	1	2	3	4
13. ¿Qué tan bien habla usted español?	1	2	3	4
14. ¿Qué tan bien lee usted en español?	1	2	3	4
15. ¿Qué tan bien entiende usted los programas de televisión en español?	1	2	3	4
16. ¿Qué tan bien entiende usted los programas de radio en español?	1	2	3	4
17. ¿Qué tan bien escribe usted en español?	1	2	3	4
18. ¿Qué tan bien entiende usted música en español?	1	2	3	4

Electronic Media Subscale	Casi nunca	Algunas veces	Frecuente- mente	Casi siempre
19. ¿Con qué frecuencia ve usted programas de televisión en inglés?	1	2	3	4
20. ¿Con qué frecuencia escucha usted programas de radio en inglés?	1	2	3	4
21. ¿Con qué frecuencia escucha usted música en inglés?	1	2	3	4
22. ¿Con qué frecuencia ve usted programas de televisión en español?	1	2	3	4
23. ¿Con qué frecuencia escucha usted programas de radio en español?	1	2	3	4
24. ¿Con qué frecuencia escucha usted música en español?	1	2	3	4

Appendix C

The AIDS Clinical Trials Group Quality of Life Scale in English and Spanish

ACTG QOL: please circle the number that best corresponds.

1. During the <u>past 4 weeks</u> , has your health <u>kept you from working</u> at a job, doing work around the house, or going to school?	1 Yes, for all of the time	2 Yes, for some of the time	3 No
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2. During the <u>past 4 weeks</u> , how much <u>bodily pain</u> have you had?	1 None	2 Very Mild	3 Mild	4 Moderate	5 Severe	6 Very Severe
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3. During the <u>past 4 weeks</u> , how much has your physical health or emotional problems <u>interfered</u> with your normal social activities?	1 Not at all	2 A little bit	3 Moderately	4 Quite a bit	5 Extremely
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4. During the <u>past 4 weeks</u> , have you been <u>unable</u> to do certain kinds or amounts of work, housework, or schoolwork because of your health?	1 Yes, for all of the time	2 Yes, for some of the time	3 No
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5. During the <u>past 4 weeks</u> , how much did pain <u>interfere</u> with your normal work (including housework)?	1 Not at all Extremely	2 A little bit	3 Moderately	4 Quite a bit	5
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6. How much, if at all, does your health now limit you in the following activities?			
a. The kind or amounts of vigorous activities you can do, like lifting heavy objects, running or participating in strenuous sports.	1 Yes, limited a lot	2 Yes, limited a little	3 No, not limited at all
b. The kind or amounts of moderate activities you can do, like moving a table or carrying groceries.	1 Yes, limited a lot	2 Yes, limited a little	3 No, not limited at all
c. Walking uphill or climbing a few flights of stairs.	1 Yes, limited a lot	2 Yes, limited a little	3 No, not limited at all
d. Eating, dressing, bathing or using the toilet.	1 Yes, limited a lot	2 Yes, limited a little	3 No, not limited at all

7. Please circle the number for the one answer that comes closest to the way you have been feeling during the past 4 weeks.

a. Has your health limited your social activities, like visiting with family and friends?	1 All of the time	2 Most of the time	3 A good bit of the time	4 Some of the time	5 A little of the time	6 None of the time
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ACTG QOL: Marque con un círculo el número con la respuesta que sea más adecuada para usted.

1. ¿Le ha <u>impedido</u> su salud trabajar, hacer labores caseras o ir a la escuela, durante las últimas <u>4 semanas</u> ?	1 Sí, todo el tiempo	2 Sí, algunas veces	3 No
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2. ¿Qué tanto <u>dolor físico</u> ha tenido durante las últimas <u>4 semanas</u> ?	1 Ninguno	2 Muy leve	3 Leve	4 Moderado	5 Fuerte	6 Muy Fuerte
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3. ¿Qué tanto ha <u>interferido</u> su salud física o problemas emocionales con sus actividades sociales normales durante las últimas <u>4 semanas</u> ?	1 En lo absoluto	2 Un poco	3 Moderadamente	4 Mucho	5 En extremo
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4. ¿No ha <u>podido</u> hacer cierto tipo o cantidad de trabajo, labores caseras o tareas escolares debido a su salud durante las <u>últimas 4 semanas</u> ?	1 Sí, todo el tiempo	2 Sí, algunas veces	3 No
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5. ¿Qué tanto <u>interfirió</u> el dolor con su trabajo normal durante las <u>últimas 4 semanas</u> (incluyendo las labores caseras)?	1 En lo absoluto	2 Un poco	3 Moderadamente	4 Mucho	5 En extremo
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Por favor marque una casilla para cada pregunta.

6. ¿Qué tanto, si es el caso, le limita ahora su salud las siguientes actividades?

a. ¿El tipo o la cantidad de actividades de mucho esfuerzo que usted pueda hacer como levantar objetos pesados, correr o participar en deportes agotadores?	1 Si, limita mucho absoluto	2 Si, limita poco	3 No, no limita en lo
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b. ¿El tipo o la cantidad de actividades moderadas que usted puede hacer como mover una mesa o cargar el mandado?	1 Si, limita mucho absoluto	2 Si, limita poco	3 No, no limita en lo
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c. ¿Caminar cuesta arriba o subir varios pisos usando las escaleras?	1 Si, limita mucho absoluto	2 Si, limita poco	3 No, no limita en lo
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d. ¿Comer, vestirse, bañarse o ir al baño?	1 Si, limita mucho absoluto	2 Si, limita poco	3 No, no limita en lo
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7. Por favor marque la casilla que mejor describa cómo se ha sentido en las últimas 4 semanas.

a. ¿Ha limitado su salud sus actividades sociales como visitar a la familia y amigos?	1 Todo el tiempo	2 La mayor parte del tiempo	3 Buena parte del tiempo	4 Algunas veces	5 Pocas veces	6 Nunca
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Appendix D

Past 7 Day Adherence Measure in English and Spanish

Read the following to each participant.

*Most people with HIV have many pills to take at different times during the day.
Many people find it hard to always remember their pills.*

*Some people get busy and forget to carry their pills with them.
Some people find it hard to take their pills according to all the instructions, such as “with meals,” or “on an empty stomach,” “every 8 hours,” or “with plenty of fluids.”
Some people decide to skip doses to avoid side effects or to just not be taking pills that day.*

We need to understand how people with HIV are really doing with their pills. Please tell us what you are actually doing. Don’t worry about telling us that you don’t take all your pills. We need to know what is really happening, not what you think we “want to hear.”

Interviewer reads the following:

3. Today is _____ (←fill in day). We are going to go through each of the past 7 day to see how many doses have you missed? If you took only a portion of a dose, we will count that as missed.
Let us start with today. How many doses have you missed today? What about yesterday?

*Continue asking retrospectively until the last 7 days have been covered.

<u>Today</u>	(# of doses missed)_____
<u>Yesterday</u>	(# of doses missed)_____
Fill in day→_____	(# of doses missed)_____
Fill in day→_____	(# of doses missed)_____
Fill in day→_____	(# of doses missed)_____
Fill in day→_____	(# of doses missed)_____
Fill in day→_____	(# of doses missed)_____

Adherencia de los últimos siete días

Lea lo siguiente a cada participante.

La mayoría de las personas con VIH tienen que tomar muchas pastillas a diferentes horas del día.

A mucha gente le cuesta trabajo recordar tomar siempre todas sus pastillas.

Algunas personas se ocupan y se olvidan de llevar consigo sus pastillas.

A algunas personas se les dificulta tomarse sus pastillas de acuerdo a las indicaciones como “con alimentos” o “con el estómago vacío”, “cada 8 horas” o “con suficientes líquidos”.

Algunas personas deciden dejar de tomar algunas dosis para evitar los efectos secundarios o simplemente para no estar tomando pastillas ese día.

Necesitamos entender lo que verdaderamente están haciendo con sus pastillas las personas que tienen VIH. Díganos por favor qué es lo que usted realmente está haciendo. No se preocupe por decirnos que no se toma todas sus pastillas. Necesitamos saber qué está pasando en realidad y no lo que usted piensa que “queremos escuchar”.

El entrevistador lee lo siguiente:

3. Hoy es _____ (←anote el día). Vamos a repasar cada uno de los últimos 7 días para ver cuantas dosis ha dejado de tomar. Si solamente se tomó una parte de la dosis, la contaremos como una dosis que dejó de tomar.

Empecemos con hoy. ¿Cuántas dosis no se ha tomado hoy? ¿Qué tal ayer?

***Siga preguntando en forma retroactiva hasta que pregunte sobre los últimos 7 días.**

Hoy (# de dosis que dejó de tomar) _____

Ayer (# de dosis que dejó de tomar) _____

Anote el día→ _____ (# de dosis que dejó de tomar) _____

Anote el día→ _____ (# de dosis que dejó de tomar) _____

Anote el día → _____ (# de dosis que dejó de tomar) _____

Anote el día → _____ (# de dosis que dejó de tomar) _____

Anote el día → _____ (# de dosis que dejó de tomar) _____

Appendix E

Patient Health Questionnaire-9 in English and Spanish

PHQ-9: Over the last 2 weeks, how often have you been bothered by any of the following problems? Please circle the number that best corresponds.

	Not at all	Several Days	More than half the days	Nearly every day
1. Little interest or pleasure in doing things	0	1	2	3
2. Feeling down, depressed, or hopeless	0	1	2	3
3. Trouble falling or staying asleep, or sleeping too much	0	1	2	3
4. Feeling tired or having little energy	0	1	2	3
5. Poor appetite or overeating	0	1	2	3
6. Feeling bad about yourself—or that you are a failure or have let yourself or your family down	0	1	2	3
7. Trouble concentrating on things, such as reading the newspaper or watching television	0	1	2	3
8. Moving or speaking so slowly that other people could have noticed. Or the opposite—being so fidgety or restless that you have been moving around a lot more than usual	0	1	2	3
9. Thoughts that you would be better off dead, or of hurting yourself in some way	0	1	2	3

If you checked off *any* problems, how *difficult* have these problems made it for you to do your work, take care of things at home, or get along with other people?

<input type="checkbox"/> Not difficult at all	<input type="checkbox"/> Somewhat difficult	<input type="checkbox"/> Very difficult	<input type="checkbox"/> Extremely difficult
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PHQ-9: Durante las últimas 2 semanas, ¿Qué tan seguido le han afectado cualquiera de los siguientes problemas? Marque con un círculo el número con la respuesta que sea más adecuada para usted.

	Para nada	Varios días	Más de la mitad de los días	Casi todos los días
1. Poco interés o placer en hacer las cosas	0	1	2	3
2. Se ha sentido decaído, deprimido, o sin esperanzas	0	1	2	3
3. Dificultad para dormir o permanecer dormido o ha dormido demasiado	0	1	2	3
4. Se ha sentido cansado o con poca energía	0	1	2	3
5. Con poco apetito o ha comido en exceso	0	1	2	3
6. Se ha sentido mal con usted mismo – o que es un fracaso o que ha quedado mal con usted mismo o con su familia	0	1	2	3
7. Ha tenido dificultad para concentrarse en cosas tales como leer el periódico o ver televisión	0	1	2	3
8. ¿Se ha estado moviendo o hablando tan lento que otras personas podrían notarlo?, o por el contrario – ha estado tan inquieto o agitado, que se ha estado moviendo mucho más de lo normal	0	1	2	3
9. Ha pensado que estaría mejor muerto o se le ha ocurrido lastimarse de alguna manera	0	1	2	3

Si usted marcó cualquiera de estos problemas, ¿Qué tan difícil fue hacer su trabajo, las tareas del hogar o llevarse bien con otras personas debido a tales problemas?

<input type="checkbox"/> Para nada difícil	<input type="checkbox"/> Un poco difícil	<input type="checkbox"/> Muy difícil	<input type="checkbox"/> Extremadamente difícil
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Appendix F

Big Five Inventory- Neuroticism Subscale in English and Spanish

BFI-N: Here are a number of characteristics that may or may not apply to you. Please circle a number next to each statement to indicate the extent to which you agree or disagree with that statement.

I see myself as <i>someone who ...</i>	1	2	3	4	5
<u>is depressed, blue</u>	Disagree strongly	Disagree a little	Neither disagree nor agree	Agree a little	Agree strongly
<u>is relaxed, handles stress well</u>	1 Disagree strongly	2 Disagree a little	3 Neither disagree nor agree	4 Agree a little	5 Agree strongly
<u>can be tense</u>	1 Disagree strongly	2 Disagree a little	3 Neither disagree nor agree	4 Agree a little	5 Agree strongly
<u>worries a lot</u>	1 Disagree strongly	2 Disagree a little	3 Neither disagree nor agree	4 Agree a little	5 Agree strongly
<u>is emotionally stable, not easily upset</u>	1 Disagree strongly	2 Disagree a little	3 Neither disagree nor agree	4 Agree a little	5 Agree strongly
<u>can be moody</u>	1 Disagree strongly	2 Disagree a little	3 Neither disagree nor agree	4 Agree a little	5 Agree strongly
<u>remains calm in tense situations</u>	1 Disagree strongly	2 Disagree a little	3 Neither disagree nor agree	4 Agree a little	5 Agree strongly
<u>gets nervous easily</u>	1 Disagree strongly	2 Disagree a little	3 Neither disagree nor agree	4 Agree a little	5 Agree strongly

BFI-N: A continuación se enumeran una serie de características que pueden o no corresponder en su caso. Encierre en un círculo el número enseguida de cada enunciado que indique hasta qué grado está o no está usted de acuerdo con el mismo.

Me veo a mi mismo como <i>alguien que...</i>					
<u>está deprimido, melancólico</u>	1 Totalmente en desacuerdo	2 Ligeramente en desacuerdo	3 Ni de acuerdo ni en desacuerdo	4 Ligeramente de acuerdo	5 Totalmente de acuerdo
<u>es relajado, maneja bien el estrés</u>	1 Totalmente en desacuerdo	2 Ligeramente en desacuerdo	3 Ni de acuerdo ni en desacuerdo	4 Ligeramente de acuerdo	5 Totalmente de acuerdo
<u>puede estar tenso</u>	1 Totalmente en desacuerdo	2 Ligeramente en desacuerdo	3 Ni de acuerdo ni en desacuerdo	4 Ligeramente de acuerdo	5 Totalmente de acuerdo
<u>se preocupa mucho</u>	1 Totalmente en desacuerdo	2 Ligeramente en desacuerdo	3 Ni de acuerdo ni en desacuerdo	4 Ligeramente de acuerdo	5 Totalmente de acuerdo
<u>es emocionalmente estable, no se altera fácilmente</u>	1 Totalmente en desacuerdo	2 Ligeramente en desacuerdo	3 Ni de acuerdo ni en desacuerdo	4 Ligeramente de acuerdo	5 Totalmente de acuerdo
<u>puede ser temperamental</u>	1 Totalmente en desacuerdo	2 Ligeramente en desacuerdo	3 Ni de acuerdo ni en desacuerdo	4 Ligeramente de acuerdo	5 Totalmente de acuerdo
<u>mantiene la calma en situaciones tensas</u>	1 Totalmente en desacuerdo	2 Ligeramente en desacuerdo	3 Ni de acuerdo ni en desacuerdo	4 Ligeramente de acuerdo	5 Totalmente de acuerdo
<u>se pone nervioso fácilmente</u>	1 Totalmente en desacuerdo	2 Ligeramente en desacuerdo	3 Ni de acuerdo ni en desacuerdo	4 Ligeramente de acuerdo	5 Totalmente de acuerdo

Appendix G

Acute Stress Disorder Dissociation Subscale in English and Spanish

ASD-D: Think back to the day and the experience of being diagnosed with HIV.

	Yes	No
A) Did the experience of being diagnosed frighten you?	<input type="checkbox"/>	<input type="checkbox"/>
B) Did you feel helpless when diagnosed?	<input type="checkbox"/>	<input type="checkbox"/>
C) Did you feel horror when diagnosed?	<input type="checkbox"/>	<input type="checkbox"/>

Please circle the number that best corresponds.

1. During or after the diagnosis, did you ever feel numb, or distant from your emotions?	1 Not at all much	2 Mildly	3 Medium	4 Quite a bit	5 Very
2. During or after the diagnosis, did you ever feel in a daze?	1 Not at all much	2 Mildly	3 Medium	4 Quite a bit	5 Very
3. During or after the diagnosis did things around you ever feel unreal or dreamlike?	1 Not at all much	2 Mildly	3 Medium	4 Quite a bit	5 Very
4. During or after the diagnosis , did you ever feel distant from your normal self or like you were watching it happen from the outside?	1 Not at all much	2 Mildly	3 Medium	4 Quite a bit	5 Very
5. Have you been unable to recall important aspects of the diagnosis?	1 Not at all much	2 Mildly	3 Medium	4 Quite a bit	5 Very

ASD-D: Haga memoria del día y de la experiencia de ser diagnosticado con VIH.

	Sí	No
A) ¿Sintió miedo ante la experiencia de ser diagnosticado?	<input type="checkbox"/>	<input type="checkbox"/>
B) ¿Sintió impotencia cuando lo diagnosticaron?	<input type="checkbox"/>	<input type="checkbox"/>
C) ¿Sintió horror cuando lo diagnosticaron?	<input type="checkbox"/>	<input type="checkbox"/>

Marque con un círculo el número con la respuesta que sea más adecuada para usted.

1. Durante o después del diagnóstico ¿se sintió alguna vez insensible o distante de sus emociones?	1 En lo absoluto	2 Muy poco	3 Moderadamente	4 Mucho	5 Bastante
2. Durante o después del diagnóstico ¿se sintió alguna vez desorientado?	1 En lo absoluto	2 Muy poco	3 Moderadamente	4 Mucho	5 Bastante
3. Durante o después del diagnóstico ¿alguna vez le parecieron las cosas a su alrededor irreales o como en un sueño?	1 En lo absoluto	2 Muy poco	3 Moderadamente	4 Mucho	5 Bastante
4. Durante o después del diagnóstico ¿se sintió alguna vez distante de sí mismo o como si estuviera viendo desde afuera?	1 En lo absoluto	2 Muy poco	3 Moderadamente	4 Mucho	5 Bastante
5. ¿No ha podido usted recordar aspectos importantes del diagnóstico?	1 En lo absoluto	2 Muy poco	3 Moderadamente	4 Mucho	5 Bastante

Appendix H

Non HIV-related Impact of Event Scale-Revised in English and Spanish

Non-IES-R: This questionnaire refers to the most traumatic event you have experienced (NOT including being diagnosed with HIV/AIDS infection/ and experiences living with HIV/AIDS).

Instructions: Below is a list of difficulties people sometimes have after stressful life events. Please read each item, and then indicate how distressing each difficulty has been for you **DURING** the **PAST 7 DAYS** with respect to **the most traumatic event you have experienced** (for example, being a victim of the violence in Ciudad Juárez, surviving a hurricane, or a near death experience).

The most stressful event that I have experienced in my life was_____.

The date this stressful event occurred on or near was_____ (enter date).

How much were you **distressed** or **bothered** by these difficulties related to the stressful experience you just mentioned above? **Please circle the number that best corresponds.**

1. Any reminder brought back feelings about it.	0 Not at all	1 A little bit	2 Moderately	3 Quite a bit	4 Extremely
2. I had trouble staying asleep.	0 Not at all	1 A little bit	2 Moderately	3 Quite a bit	4 Extremely
3. Other things kept making me think about it.	0 Not at all	1 A little bit	2 Moderately	3 Quite a bit	4 Extremely
4. I felt irritable and angry.	0 Not at all	1 A little bit	2 Moderately	3 Quite a bit	4 Extremely
5. I avoided letting myself get upset when I thought about it or was reminded of it.	0 Not at all	1 A little bit	2 Moderately	3 Quite a bit	4 Extremely
6. I thought about it when I didn't mean to.	0 Not at all	1 A little bit	2 Moderately	3 Quite a bit	4 Extremely
7. I felt as if it hadn't happened or wasn't real.	0 Not at all	1 A little bit	2 Moderately	3 Quite a bit	4 Extremely
8. I stayed away from reminders of it.	0 Not at all	1 A little bit	2 Moderately	3 Quite a bit	4 Extremely
9. Pictures about it popped into my mind.	0 Not at all	1 A little bit	2 Moderately	3 Quite a bit	4 Extremely

10. I was jumpy and easily startled.	0 Not at all	1 A little bit	2 Moderately	3 Quite a bit	4 Extremely
11. I tried not to think about it	0 Not at all	1 A little bit	2 Moderately	3 Quite a bit	4 Extremely
12. I was aware that I still had a lot of feelings about it, but I didn't deal with them.	0 Not at all	1 A little bit	2 Moderately	3 Quite a bit	4 Extremely
13. My feelings about it were kind of numb.	0 Not at all	1 A little bit	2 Moderately	3 Quite a bit	4 Extremely
14. I found myself acting or feeling like I was back at that time.	0 Not at all	1 A little bit	2 Moderately	3 Quite a bit	4 Extremely
15. I had trouble falling asleep.	0 Not at all	1 A little bit	2 Moderately	3 Quite a bit	4 Extremely
16. I had waves of strong feelings about it.	0 Not at all	1 A little bit	2 Moderately	3 Quite a bit	4 Extremely
17. I tried to remove it from my memory.	0 Not at all	1 A little bit	2 Moderately	3 Quite a bit	4 Extremely
18. I had trouble concentrating.	0 Not at all	1 A little bit	2 Moderately	3 Quite a bit	4 Extremely
19. Reminders of it caused me to have physical reactions, such as sweating, trouble breathing, nausea, or a pounding heart.	0 Not at all	1 A little bit	2 Moderately	3 Quite a bit	4 Extremely
20. I had dreams about it.	0 Not at all	1 A little bit	2 Moderately	3 Quite a bit	4 Extremely
21. I felt watchful or on-guard.	0 Not at all	1 A little bit	2 Moderately	3 Quite a bit	4 Extremely
22. I tried not to talk about it.	0 Not at all	1 A little bit	2 Moderately	3 Quite a bit	4 Extremely

Non-IES-R: Este cuestionario se refiere al evento más traumático que haya experimentado (SIN incluir haber sido diagnosticado con la infección del VIH/SIDA y/o las experiencias de vivir con VIH/SIDA.)

Instrucciones: A continuación se encuentra una lista de dificultades que en ocasiones tiene la gente después de acontecimientos estresantes de la vida. Lea por favor cada enunciado y luego indique que tan estresante ha sido cada dificultad para usted **DURANTE** los **ÚLTIMOS 7 DÍAS** con respecto al evento más traumático que haya experimentado (por ejemplo, ser víctima de la violencia en Ciudad Juárez, sobrevivir un huracán o una experiencia cercana a la muerte).

El evento más estresante que he experimentado en mi vida es _____.
La fecha en que ocurrió este evento estresante fue en (o aproximadamente en) _____ (anote la fecha).

¿Cuánto le **angustiaron** o **molestaron** estas dificultades relacionadas con la experiencia estresante que mencionó previamente? **Marque con un círculo el número con la respuesta que sea más adecuada para usted.**

1. Cualquier cosas que me recordara hacia que volviera a sentirlo.	0 En lo absoluto	1 Un poco	2 Moderadamente	3 Bastante	4 En extremo
2. Tenía problemas para mantenerme dormido.	0 En lo absoluto	1 Un poco	2 Moderadamente	3 Bastante	4 En extremo
3. Otras cosas me hacían que pensara en eso.	0 En lo absoluto	1 Un poco	2 Moderadamente	3 Bastante	4 En extremo
4. Me sentía irritable y enojado.	0 En lo absoluto	1 Un poco	2 Moderadamente	3 Bastante	4 En extremo
5. Evitaba dejar de sentirme mal cuando pensaba en eso o algo me lo recordaba.	0 En lo absoluto	1 Un poco	2 Moderadamente	3 Bastante	4 En extremo
6. Pensaba en eso cuando no era mi intención.	0 En lo absoluto	1 Un poco	2 Moderadamente	3 Bastante	4 En extremo
7. Sentía como si no hubiera sucedido o no fuera real	0 En lo absoluto	1 Un poco	2 Moderadamente	3 Bastante	4 En extremo
8. Evitaba las cosas que me hacían recordarlo.	0 En lo absoluto	1 Un poco	2 Moderadamente	3 Bastante	4 En extremo
9. Surgían en mi mente imágenes repentinas de eso.	0 En lo absoluto	1 Un poco	2 Moderadamente	3 Bastante	4 En extremo
10. Estaba asustadizo y me angustiaba fácilmente.	0 En lo absoluto	1 Un poco	2 Moderadamente	3 Bastante	4 En extremo

11. Trataba de no pensar en eso.	0 En lo absoluto	1 Un poco	2 Moderadamente	3 Bastante	4 En extremo
12. Estaba consciente de que aún tenía muchas emociones al respecto pero no lidiaba con ellas.	0 En lo absoluto	1 Un poco	2 Moderadamente	3 Bastante	4 En extremo
13. Me sentía insensible.	0 En lo absoluto	1 Un poco	2 Moderadamente	3 Bastante	4 En extremo
14. Me daba cuenta que estaba actuando o sintiendo como si estuviera de nuevo en ese momento.	0 En lo absoluto	1 Un poco	2 Moderadamente	3 Bastante	4 En extremo
15. Tenía problemas para conciliar el sueño.	0 En lo absoluto	1 Un poco	2 Moderadamente	3 Bastante	4 En extremo
16. Por momentos esas fuertes emociones iban y venían.	0 En lo absoluto	1 Un poco	2 Moderadamente	3 Bastante	4 En extremo
17. Trataba de borrarlo de mi memoria.	0 En lo absoluto	1 Un poco	2 Moderadamente	3 Bastante	4 En extremo
18. Tenía problemas para concentrarme.	0 En lo absoluto	1 Un poco	2 Moderadamente	3 Bastante	4 En extremo
19. Las cosas que me hacían recordarlo me causaban reacciones físicas como sudoración, problemas para respirar, náusea o palpitaciones.	0 En lo absoluto	1 Un poco	2 Moderadamente	3 Bastante	4 En extremo
20. Lo soñaba.	0 En lo absoluto	1 Un poco	2 Moderadamente	3 Bastante	4 En extremo
21. Estaba alerta o a la defensiva.	0 En lo absoluto	1 Un poco	2 Moderadamente	3 Bastante	4 En extremo
22. Trataba de no hablar de eso.	0 En lo absoluto	1 Un poco	2 Moderadamente	3 Bastante	4 En extremo

Appendix I

HIV-related Impact of Event Scale in English and Spanish

IES-R: This questionnaire refers to the experience of being diagnosed with HIV/AIDS infection/ and experiences of living with HIV/AIDS. Please write here your best estimate of the date you were diagnosed with HIV/AIDS:

Instructions: Below is a list of difficulties people sometimes have after stressful life events. Please read each item, and then indicate how distressing each difficulty has been for you **DURING** the **PAST 7 DAYS**.

How much were you **distressed** or **bothered** by these difficulties related to the **moment** and **experience of being diagnosed with HIV/AIDS**? Please circle the number that best corresponds.

1. Any reminder brought back feelings about it.	0 Not at all	1 A little bit	2 Moderately	3 Quite a bit	4 Extremely
2. I had trouble staying asleep.	0 Not at all	1 A little bit	2 Moderately	3 Quite a bit	4 Extremely
3. Other things kept making me think about it.	0 Not at all	1 A little bit	2 Moderately	3 Quite a bit	4 Extremely
4. I felt irritable and angry.	0 Not at all	1 A little bit	2 Moderately	3 Quite a bit	4 Extremely
5. I avoided letting myself get upset when I thought about it or was reminded of it.	0 Not at all	1 A little bit	2 Moderately	3 Quite a bit	4 Extremely
6. I thought about it when I didn't mean to.	0 Not at all	1 A little bit	2 Moderately	3 Quite a bit	4 Extremely
7. I felt as if it hadn't happened or wasn't real.	0 Not at all	1 A little bit	2 Moderately	3 Quite a bit	4 Extremely
8. I stayed away from reminders of it.	0 Not at all	1 A little bit	2 Moderately	3 Quite a bit	4 Extremely
9. Pictures about it popped into my mind.	0 Not at all	1 A little bit	2 Moderately	3 Quite a bit	4 Extremely
10. I was jumpy and easily startled.	0 Not at all	1 A little bit	2 Moderately	3 Quite a bit	4 Extremely

11. I tried not to think about it	0 Not at all	1 A little bit	2 Moderately	3 Quite a bit	4 Extremely
12. I was aware that I still had a lot of feelings about it, but I didn't deal with them.	0 Not at all	1 A little bit	2 Moderately	3 Quite a bit	4 Extremely
13. My feelings about it were kind of numb.	0 Not at all	1 A little bit	2 Moderately	3 Quite a bit	4 Extremely
14. I found myself acting or feeling like I was back at that time.	0 Not at all	1 A little bit	2 Moderately	3 Quite a bit	4 Extremely
15. I had trouble falling asleep.	0 Not at all	1 A little bit	2 Moderately	3 Quite a bit	4 Extremely
16. I had waves of strong feelings about it.	0 Not at all	1 A little bit	2 Moderately	3 Quite a bit	4 Extremely
17. I tried to remove it from my memory.	0 Not at all	1 A little bit	2 Moderately	3 Quite a bit	4 Extremely
18. I had trouble concentrating.	0 Not at all	1 A little bit	2 Moderately	3 Quite a bit	4 Extremely
19. Reminders of it caused me to have physical reactions, such as sweating, trouble breathing, nausea, or a pounding heart.	0 Not at all	1 A little bit	2 Moderately	3 Quite a bit	4 Extremely
20. I had dreams about it.	0 Not at all	1 A little bit	2 Moderately	3 Quite a bit	4 Extremely
21. I felt watchful or on-guard.	0 Not at all	1 A little bit	2 Moderately	3 Quite a bit	4 Extremely
22. I tried not to talk about it.	0 Not at all	1 A little bit	2 Moderately	3 Quite a bit	4 Extremely

IES-R: Este cuestionario se refiere a la experiencia de ser diagnosticado con la infección del VIH/SIDA y las experiencias de vivir con VIH/SIDA. Por favor anote a continuación la fecha aproximada en que fue diagnosticado con VIH/SIDA:

Instrucciones: A continuación se encuentra una lista de dificultades que en ocasiones tiene la gente después de acontecimientos estresantes de la vida. Lea por favor cada enunciado y luego indique que tan estresante ha sido cada dificultad para usted **DURANTE** los **ÚLTIMOS 7 DÍAS**.

¿Qué tanto se **estresó** o se **molestó** por estas dificultades relacionadas con el **momento** y la **experiencia de ser diagnosticado con VIH/SIDA**? Marque con un círculo el número con la respuesta que sea más adecuada para usted.

1. Cualquier cosa que me recordara hacía que volviera a sentirlo.	0 En lo absoluto	1 Un poco	2 Moderadamente	3 Bastante	4 En extremo
2. Tenía problemas para mantenerme dormido.	0 En lo absoluto	1 Un poco	2 Moderadamente	3 Bastante	4 En extremo
3. Otras cosas me hacían que pensara en eso.	0 En lo absoluto	1 Un poco	2 Moderadamente	3 Bastante	4 En extremo
4. Me sentía irritable y enojado.	0 En lo absoluto	1 Un poco	2 Moderadamente	3 Bastante	4 En extremo
5. Evitaba dejar de sentirme mal cuando pensaba en eso o algo me lo recordaba.	0 En lo absoluto	1 Un poco	2 Moderadamente	3 Bastante	4 En extremo
6. Pensaba en eso cuando no era mi intención.	0 En lo absoluto	1 Un poco	2 Moderadamente	3 Bastante	4 En extremo
7. Sentía como si no hubiera sucedido o no fuera real.	0 En lo absoluto	1 Un poco	2 Moderadamente	3 Bastante	4 En extremo
8. Evitaba las cosas que me hacían recordarlo.	0 En lo absoluto	1 Un poco	2 Moderadamente	3 Bastante	4 En extremo
9. Surgían en mi mente imágenes repentinas de eso.	0 En lo absoluto	1 Un poco	2 Moderadamente	3 Bastante	4 En extremo
10. Estaba asustadizo y me angustiaba fácilmente.	0 En lo absoluto	1 Un poco	2 Moderadamente	3 Bastante	4 En extremo

11. Trataba de no pensar en eso.	0 En lo absoluto	1 Un poco	2 Moderadamente	3 Bastante	4 En extremo
12. Estaba consciente de que aún tenía muchas emociones al respecto pero no lidiaba con ellas.	0 En lo absoluto	1 Un poco	2 Moderadamente	3 Bastante	4 En extremo
13. Me sentía insensible.	0 En lo absoluto	1 Un poco	2 Moderadamente	3 Bastante	4 En extremo
14. Me daba cuenta que estaba actuando o sintiendo como si estuviera de nuevo en ese momento.	0 En lo absoluto	1 Un poco	2 Moderadamente	3 Bastante	4 En extremo
15. Tenía problemas para conciliar el sueño.	0 En lo absoluto	1 Un poco	2 Moderadamente	3 Bastante	4 En extremo
16. Por momentos esas fuertes emociones iban y venían.	0 En lo absoluto	1 Un poco	2 Moderadamente	3 Bastante	4 En extremo
17. Trataba de borrarlo de mi memoria.	0 En lo absoluto	1 Un poco	2 Moderadamente	3 Bastante	4 En extremo
18. Tuve problemas para concentrarme.	0 En lo absoluto	1 Un poco	2 Moderadamente	3 Bastante	4 En extremo
19. Las cosas que me hacían recordarlo me causaban reacciones físicas como sudoración, problemas para respirar, náuseas o palpitaciones.	0 En lo absoluto	1 Un poco	2 Moderadamente	3 Bastante	4 En extremo
20. Lo soñaba.	0 En lo absoluto	1 Un poco	2 Moderadamente	3 Bastante	4 En extremo
21. Estaba alerta o a la defensiva.	0 En lo absoluto	1 Un poco	2 Moderadamente	3 Bastante	4 En extremo
22. Trataba de no hablar de eso.	0 En lo absoluto	1 Un poco	2 Moderadamente	3 Bastante	4 En extremo

Appendix J

Life Events Checklist in English and Spanish

LEC-OT: Listed below are a number of difficult or stressful things that sometimes happen to people. For each event **check one or more of the boxes** to the right to indicate that: (a) it happened to you personally, (b) you witnessed it happen to someone else, (c) you learned about it happening to someone close to you, (d) you're not sure if it fits, or (e) it doesn't apply to you.

Be sure to consider your entire life (growing up as well as adulthood) as you go through the list of events.

Event	Happened to me	Witnessed it	Learned about it	Not sure	Doesn't apply
1. Natural disaster (e.g., earthquake, flood, hurricane, or tornado)					
2. Fire or explosion					
3. Transportation accident (for example, car accident, boat accident, train wreck, plane crash)					
4. Serious accident at work, home or during recreational activity					
5. Exposure to toxic substances (for example, dangerous chemicals, radiation)					
6. Physical assault (e.g., being attacked, hit, slapped, kicked, beaten up)					
7. Assault with a weapon (e.g., being shot, stabbed, threatened with a knife, gun, bomb)					
8. Sexual assault (rape, attempted rape, made to perform any type of sexual act through force or threat of harm)					
9. Other unwanted or uncomfortable sexual experience					
10. Combat or exposure to a war zone (in the military or as a civilian)					
Event	Happened to me	Witnessed it	Learned about it	Not sure	Doesn't apply
11. Captivity (for example, being kidnapped, abducted, held hostage, prisoner of war)					
12. Life threatening illness or injury					
13. Severe human suffering					
14. Sudden, violent death (e.g., homicide, suicide)	Not Applicable				
15. Sudden, unexpected death of someone close to you					
16. Serious injury, harm or death you caused someone else					
17. Any other very stressful event or experience					
18. Death due to HIV/AIDS or related complications	Not Applicable				

LEC-OT: A continuación se encuentra una serie de cosas estresantes que en ocasiones le suceden a las personas. Para cada evento marque **una o más** de las **casillas** a la derecha para así indicar que: (a) le ha sucedido a usted personalmente, (b) fue testigo de que le sucedió a alguien más, (c) se enteró de que le sucedió a alguien cercano a usted, (d) no está seguro si le corresponde o (e) no le corresponde a usted.

Asegúrese de tomar en cuenta toda su vida (desde su niñez hasta su vida como adulto) conforme repase la lista de eventos.

Evento	Me sucedió	Fui testigo	Me enteré	No estoy seguro	No corresponde
1. Desastre natural (por ejemplo, terremoto, inundación o tornado)					
2. Fuego o explosión					
3. Accidente de transporte (por ejemplo, accidente automovilístico, accidente marítimo, descarrilamiento del tren, accidente aéreo)					
4. Accidente grave en el trabajo, hogar o durante actividades recreativas					
5. Exposición a sustancias tóxicas (por ejemplo, químicos peligrosos, radiación)					
6. Agresión física (por ejemplo, ser atacado, golpeado, abofeteado, pateado, recibir una paliza)					
7. Agresión con un arma (por ejemplo, recibir un balazo, una puñalada, amenazado con una navaja, pistola, bomba)					
8. Agresión sexual (violación, intento de violación, hacerlo realizar cualquier tipo de acto sexual a través o de la fuerza o amenaza de daño)					
9. Otras experiencias sexuales no deseadas o incómodas					
10. Combatir o estar expuesto a una zona de guerra (en lo militar o como civil)					
11. Cautiverio (por ejemplo, ser secuestrado, plagiado, tomado como rehén, prisionero de guerra)					
12. Enfermedad o lesión muy grave					

Evento	Me sucedió	Fui testigo	Me enteré	No estoy seguro	No corresponde
13. Fuerte sufrimiento humano					
14. Muerte repentina, violenta (por ejemplo, homicidio, suicidio)	No corresponde				
15. Muerte inesperada, repentina de alguien cercano a usted					
16. Lesión seria, daño o muerte que usted le haya causado a alguien más					
17. Cualquier otro evento o experiencia estresante					
18. Muerte debido al VIH/SIDA o complicaciones relacionadas	No corresponde				

Appendix K

Connor-Davidson Resilience Scale

CDS: Please indicate how much you **agree** with the following statements as they applied to you during the **last month**. If a particular situation did not occur at that time, answer according to how you think you would have felt. **Please circle the number that best corresponds.**

<i>How <u>true</u> for you were each of the following statements?</i>		Not True At all	Rarely True	Some- Times True	Often True	True Almost all the time
1.	I was able to adapt when changes occurred	1	2	3	4	5
2.	I had at least one close and secure relationship which helped me when I was stressed.	1	2	3	4	5
3.	When there were no clear solutions to my problems, sometimes fate or God could help.	1	2	3	4	5
4.	I was able to deal with whatever came my way.	1	2	3	4	5
5 .	Past successes gave me confidence in dealing with new challenges and difficulties.	1	2	3	4	5
6.	I tried to see the humorous side of things when I was faced with problems.	1	2	3	4	5
7.	Having to cope with stress made me stronger.	1	2	3	4	5
8.	I tended to bounce back after illness, injury, or other hardships.	1	2	3	4	5
9.	Good or bad, I believed that most things happen for a reason.	1	2	3	4	5
10.	I would give my best effort, no matter what the outcome may be.	1	2	3	4	5
11 .	I believed that I could achieve my goals, even if there were obstacles.	1	2	3	4	5
12.	Even when things looked hopeless, I didn't give up.	1	2	3	4	5

<i>How true for you were each of the following?</i>		Not True at All	Rarely True	Some- times True	Often True	True Almost all the Time
13.	During times of stress or crisis, I knew where to turn for help.	1	2	3	4	5
14.	Under pressure, I stayed focused and thought clearly.	1	2	3	4	5
15.	I preferred to take the lead in solving problems, rather than letting others make all the decisions.	1	2	3	4	5
16.	I was not easily discouraged by failure.	1	2	3	4	5
17.	I thought of myself as a strong person when dealing with life's challenges and difficulties.	1	2	3	4	5
18.	I could make unpopular or difficult decisions that affect other people, if it was necessary.	1	2	3	4	5
19.	I was able to handle unpleasant or painful feelings like sadness, fear and anger.	1	2	3	4	5
20.	In dealing with life's problems, I believed that sometimes you have to act on a hunch, without knowing why.	1	2	3	4	5
21.	I had a strong sense of purpose in life.	1	2	3	4	5
22.	I felt in control of my life.	1	2	3	4	5
23.	I liked challenges.	1	2	3	4	5
24.	I worked to attain my goals, no matter what roadblocks I would encounter along the way.	1	2	3	4	5
25.	I took pride in my achievements.					

CDS: Por favor indique de que manera esta **de acuerdo** con las siguientes declaraciones en como se aplicaban durante el **mes pasado**. Si una situación no ocurrió durante ese tiempo, responda en como usted piensa que se haya sentido. **Marque con un círculo el número con la respuesta que sea más adecuada para usted.**

<i>¿Para usted, que <u>verdadera</u> era cada una de estas declaraciones?</i>		No era Verdad Absoluto	Rara-mente era Verdad	A veces era Verdad	Era Verdad a menudo	Era en Casi siempre
1.	Podía adaptarse cuando cambiaban las cosas.	1	2	3	4	5
2.	Tenia por lo menos una persona cercana y de confianza que le ayudaba cuando sufría con estrés.	1	2	3	4	5
3.	Cuando no se encontraban soluciones a sus problemas, a veces el destino o Dios le ayudaban.	1	2	3	4	5
4.	Era capaz de sobrepasar a cualquier problema que se le presentaba.	1	2	3	4	5
5 .	Sus éxitos del pasado le daban confianza en poder dominar a los nuevos desafíos y dificultades.	1	2	3	4	5
6.	Trataba de ver las cosas con humor cuando se enfrentaba con problemas.	1	2	3	4	5
7.	Tener que luchar con el estrés le fortalecía.	1	2	3	4	5
8.	Era capaz de reponerme rápidamente después de una enfermedad, herida o mal tiempo.	1	2	3	4	5
9.	Por bien, o por mal, creía que muchas cosas pasan por una razón.	1	2	3	4	5
10.	Se me aplicaba a lo máximo, no importa cual sea el resultado.	1	2	3	4	5
11 .	Creía que podía lograr sus metas, aun cuando hayan obstáculos.	1	2	3	4	5
12.	Aun cuando las cosas parecían no tener remedio, no se rendía.	1	2	3	4	5

<i>¿Para usted, que <u>verdadera</u> era cada una de estas declaraciones?</i>		No era Verdad en Absoluto	Rara-mente era Verdad	A veces era Verdad Menudo	Era Verdad a Siempre	Era Verdad Casi
13.	Durante tiempos de estrés o crisis, sabía adonde buscar ayuda.	1	2	3	4	5
14.	Cuando estaba presionado, se concentraba y pensaba claramente.	1	2	3	4	5
15.	Prefería aplicarse para resolver a los problemas, en lugar de dejar que otras personas hagan todas las decisiones.	1	2	3	4	5
16.	No se desanimaba fácilmente por el fracaso.	1	2	3	4	5
17.	Se consideraba ser una persona fuerte, capaz de superar a los desafíos y problemas de la vida.	1	2	3	4	5
18.	Podía realizar decisiones impopulares o difíciles que afectan a otras personas, si esto fuera necesario.	1	2	3	4	5
19.	Podía dominar a las emociones desagradables o dolorosas como la tristeza, el miedo, o el enojo.	1	2	3	4	5
20.	Creía que en resolver a los problemas de la vida, a veces uno tiene que actuar con fe, sin saber porque.	1	2	3	4	5
21.	Tenia una dirección y un propósito en la vida.	1	2	3	4	5
22.	Se sentía estar en control de su vida.	1	2	3	4	5
23.	Le gustaban los desafíos.	1	2	3	4	5
24.	Trabajaba para lograr sus metas, sin importar cuales obstáculos se presenten.	1	2	3	4	5
25.	Se sentía orgullo en realizar un esfuerzo con éxito.	1	2	3	4	5

Appendix L

Self-Reported Adherence to Medications and Medical Appointments in English and Spanish

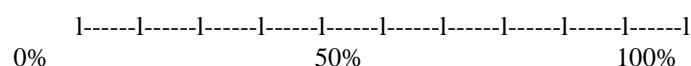
As mentioned in our interview earlier, most people with HIV have many pills to take at different times during the day.

Please tell us what you are actually doing. Don't worry about telling us that you don't take all your pills. We need to know what is really happening, not what you think we "want to hear."

1	2	3	4	5	6
All of the time	Most of the time	A good bit the time	Some of the time	A little of the time	None of the time

1	2	3	4	5	6
Excellent	Very good	Good	Fair	Poor	Very poor

4. Place an “X” on the line below at the point showing your best guess about how much medication you have taken in the last month. We would be surprised if this was 100% for most people (e.g. 0% means you have taken no medication; 50% means you have taken half of your medication; 100% means you have taken every single dose of your medication).



a) Please write number here

b) Please write number here _____

c) Please write number here

ATMBM

1. Pensando en los últimos 30 días, ¿con qué frecuencia se tomó todos sus medicamentos antirretrovirales de VIH como su médico se los prescribió?

1	2	3	4	5	6
Siempre	La mayoría de las veces	Una buena parte de las veces	A veces	Muy pocas veces	Nunca

2. Pensando en los últimos 30 días, ¿cómo calificaría en promedio su capacidad para tomar todos sus medicamentos antirretrovirales de VIH como lo prescribió su médico?

1	2	3	4	5	6
Excelente	Muy buena	Buena	Regular	Mala	Pésima

3. En los últimos 30 días, ¿cuántas dosis ha dejado de tomar? _____

4. En la línea debajo marque con una “X” el lugar que mejor representa la cantidad de sus medicamentos que ha tomado en el último mes. Nos sorprendería si fuera 100% para la mayoría de las personas (por ejemplo: 0% significa que no ha tomado ningún medicamento; 50% significa que ha tomado la mitad de sus medicamentos; 100% significa que ha tomado cada dosis de todos sus medicamentos).

	1-----1-----1-----1-----1-----1-----1-----1-----1-----1	
0%	50%	100%

5. En los últimos 12 meses (el año anterior) ...

...a cuántas citas médicas relacionadas con su cuidado del VIH ha dejado de acudir?

a) Favor de anotar el número aquí _____

...aproximadamente a cuántas de esas citas no acudió pero las reprogramó ese mismo día?

b) Favor de anotar el número aquí _____

... aproximadamente a cuántas de esas citas no llamó para reprogramar?

c) Favor de anotar el número aquí _____

Appendix M
Childhood Abuse Measure in English and Spanish

PST: Below are some questions referring to specific events of harm or abuse prior to the age of 16. We ask that you please answer as honestly as possible.

1) Did you have any sexual experiences before the age of 16?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
<p>If NO, then skip to question 6. If YES, please answer question 2.</p>		
2) If YES ...was this sexual experience against your will? (That is <u>were you forced</u> or <u>frightened</u> by someone into doing something sexually that you did not want to?)	<input type="checkbox"/> Yes	<input type="checkbox"/> No
3) Do you remember how old you were when this first occurred?	Please write age _____	
4) Did these sexual experiences occur more than once?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
<p><u>If YES, how often?</u></p> <p><input type="checkbox"/> More than Once <input type="checkbox"/> Often <input type="checkbox"/> Very Often</p>		
5) Did anyone ever physically <u>threaten</u> to harm you before the age of 16? (That is, <u>threaten</u> to physically hit or beat you with the intent to cause you serious pain.)	<input type="checkbox"/> Yes	<input type="checkbox"/> No
<p><u>If YES, how often?</u></p> <p><input type="checkbox"/> Only once <input type="checkbox"/> More than once but not often <input type="checkbox"/> Often <input type="checkbox"/> Very Often</p>		

6) Did anyone ever physically hurt you before the age of 16?
(That is, actually physically hit you with the intent to cause you serious pain.)

☐ Yes ☐ No

If YES, how often?

☐ Only once ☐ More than once but not often ☐ Often ☐ Very Often

7) Did anyone ever verbally harm you before the age of 16?
(That is, say hurtful things to you or about you with the intent to cause you emotional pain.)

☐ Yes ☐ No

If YES, how often?

☐ Only once ☐ More than once but not often ☐ Often ☐ Very Often

PST: A continuación se encuentran algunas preguntas que se refieren a eventos específicos sobre daños o abusos previos a los 16 años de edad. Le pedimos que responda de manera honesta.

1) ¿Tuvo experiencias sexuales antes de los 16 años de edad?	<input type="checkbox"/> Si	<input type="checkbox"/> No
<p>Si su respuesta es NO, pase a la pregunta 6. Si su respuesta es sí, responda la pregunta 2.</p>		
2) Si su respuesta es SÍ ... ¿fue/ron esta/s experiencia/s sexual/es en contra de su voluntad? (Es decir, fue forzado o atemorizado por alguien para que hiciera algo de naturaleza sexual que usted no quería hacer)	<input type="checkbox"/> Si	<input type="checkbox"/> No
3) ¿Recuerda qué edad tenía cuando sucedió esto por primera vez?	Anote la edad _____	
4) ¿Se dieron más de una vez estas experiencias sexuales?	<input type="checkbox"/> Si	<input type="checkbox"/> No
<p><u>Si su respuesta es SÍ, ¿con qué frecuencia?</u></p>		
	<input type="checkbox"/> Más de una vez, pero no con frecuencia	<input type="checkbox"/> Con frecuencia <input type="checkbox"/> Con mucha frecuencia
5) ¿Alguna vez antes de los 16 años de edad, alguien lo <u>amenazó</u> físicamente con lastimarlo? (Es decir, <u>amenazarlo</u> con pegarle o golpearlo con la intención de causarle dolor intenso).	<input type="checkbox"/> Si	<input type="checkbox"/> No
<p><u>Si su respuesta es SÍ, ¿con qué frecuencia?</u></p>		
	<input type="checkbox"/> Solamente una vez	<input type="checkbox"/> Mas de una vez pero no frecuencia <input type="checkbox"/> Con frecuencia <input type="checkbox"/> Con mucha frecuencia

<p>6) ¿Alguna vez alguien lo <u>lastimó</u> físicamente antes de los 16 años de edad? (Es decir, pegarle <u>realmente</u> en forma física con la intención de causarle dolor intenso).</p>	<div style="text-align: center;"> <input type="checkbox"/> Si <input type="checkbox"/> No </div> <p><u>Si su respuesta es SÍ, ¿con qué frecuencia?</u></p> <div style="display: flex; justify-content: space-around;"> <div><input type="checkbox"/> Solamente una vez</div> <div><input type="checkbox"/> Mas de una vez pero no frecuencia</div> <div><input type="checkbox"/> Con frecuencia</div> <div><input type="checkbox"/> Con mucha frecuencia</div> </div>
<p>7) ¿Alguna vez alguien lo <u>lastimó verbalmente</u> antes de los 16 años de edad? (Es decir, <u>que le haya dicho o que dijera cosas hirientes sobre usted</u> con la intención de causarle daño emocional).</p>	<div style="text-align: center;"> <input type="checkbox"/> Si <input type="checkbox"/> No </div> <p><u>Si su respuesta es SÍ, ¿con qué frecuencia?</u></p> <div style="display: flex; justify-content: space-around;"> <div><input type="checkbox"/> Solamente una vez</div> <div><input type="checkbox"/> Mas de una vez pero no frecuencia</div> <div><input type="checkbox"/> Con frecuencia</div> <div><input type="checkbox"/> Con mucha frecuencia</div> </div>

Vita

John Andrew Saucedo was born on November 20, 1983 in San Marcos, Texas. He is the only child of Terry A. Saucedo and Eddie Gonzalez. In 2006, John earned a Bachelor's degree in psychology from St. Edward's University in Austin, Texas. He then entered the health psychology doctoral program at the University of Texas at El Paso in 2008, completing a Master's degree in clinical psychology in 2010, and a certificate in quantitative methods in psychology in 2012. John will enter a postdoctoral fellowship training program in July 2013 at the Center for AIDS Prevention Studies at the University of California, San Francisco. His fellowship is sponsored by the National Institutes of Health.

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