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# Disclosure of HIV Serostatus in Latinos as a Function of Acculturation: The Role of Attitudinal Components and The Theory of Reasoned Action

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DISCLOSURE OF HIV SEROSTATUS IN LATINOS AS A FUNCTION OF  
ACCULTURATION: THE ROLE OF ATTITUDINAL COMPONENTS  
AND THE THEORY OF REASONED ACTION

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By

John Andrew Saucedo

2010

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ACCULTURATION: THE ROLE OF ATTITUDINAL COMPONENTS  
AND THE THEORY OF REASONED ACTION

By

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## INTRODUCTION

### *1.1 Disclosure of HIV Serostatus*

Psychosocial correlates of HIV include depression, post-traumatic stress disorder, cognitive impairment, HIV-related stigmatization, and isolation from family and communities (Collins, Elkington, von Unger, Sweetland, Wright & Zybert, 2008; Gonzalez, Hendriksen, Collins, Durán, & Safren, 2009). Evidence suggests that social support from friends and family can mitigate the negative psychosocial correlates, as well as improve adherence to treatment (Prachakul, Grant & Keltner, 2007; Simoni, Frick, & Huang, 2006). One method that has been hypothesized to increase social support is disclosure of HIV serostatus (Holt et al., 1998; Zea, 2005). Disclosure of HIV serostatus has many implications for reducing sexual risky behavior and transmission of the virus (Moskowitz & Roloff, 2008; Rosser et al., 2008; Simoni et al., 2005;), decreasing levels of depression (Zea, Reisen, Poppen, Bianchi, & Echeverry, 2005), and enhancing HIV prevention and testing (Pulerwitz, Michaelis, Lippman, Chinaglia, & Diaz, 2008), CD4 counts (O’Cleirigh & Safren, 2008; Strachen, Bennett, Russo, & Roy-Byrne 2007), adherence (Stirratt et al., 2006), quantity and quality of social support and self esteem (Simoni, Huange, Goodry, & Montoya, 2005).

In 2003, the Center for Disease Control (CDC) shifted the focus of HIV prevention onto HIV+ individuals rather than solely focusing on preventing HIV- individuals from contracting the virus. This initiative advocated for individuals to take responsibility to educate others with the goal of increasing safer sex practices through disclosure (CDC, 2003). Promoting disclosure may be one of the most pragmatic ways of reducing HIV transmission (Bairan et al., 2006; Crepaz & Marks, 2003).

Rier (2007) conducted a qualitative study consisting of 16 HIV/AIDS internet support groups. The most common theme throughout the 16,000 pages of transcripts was a call for full disclosure. In a study involving 223 New York State HIV case managers, disclosure was seen as one of the most vital issues along with housing, food, medical care, and preventing HIV transmission (Kalichman et al., 2007). However, qualitative interviews with 152 HIV+ adults revealed a pattern of delayed disclosure due to a fear of negative consequences from loss of privacy. Delayed disclosure was seen as inhibiting the quality of social support that has been shown to have implications for improving adherence (Klitzman et al., 2004; Simoni, Demas, Mason, Drossman, & Davis, 2000).

Initial patient reactions when discussing the disclosure process have included feelings of anxiety, stress, fear, rejection, stigmatization, and discrimination and beliefs about loss of privacy (Derlega et al., 2002; Serovich, Mason, Bautista, & Toviesi 2006; Serovich, McDowell, & Grafsky, 2008). Meanwhile, there is evidence to suggest that those who do disclose their HIV serostatus have little regret about disclosing and overall find it helpful (Serovich, McDowell, & Grafsky, 2006; Serovich, Mason, Bautista, & Toviesi, 2008; Shehan et al., 2005). Strachan et al. (2007) suggest that further research on disclosure aim to understand what conditions facilitate disclosure, and potentially encouraging patients to disclose their status as a standard part of their HIV treatment.

*Disclosure Targets.* Rates of disclosure, reasons for disclosure, and norms and methods of disclosure have been shown to vary depending on the relationship the discloser has with the disclosure target (Derlega et al., 2004). For example, higher rates of disclosure have been found to friends and main partners than to casual sex partners across diverse ethnic samples (Kalichman, DiMarco, Austin, Luke, & DiFonzo, 2003; Zea et al., 2004; Zea et al., 2005). One

reason for differences in disclosure rates to specific targets may be the reason for wanting to disclose for one specific purpose (e.g. feel a responsibility to other person). Derlega et al. (2002) produced a list of reasons for disclosure that included: being in close/supportive relationship, having a duty/obligation to educate, catharsis and sense of similarity to the other person. Derlega et al. (2002) demonstrated how these reasons vary depending on the disclosure target. For disclosure to close friends, “close/supportive relationship” was endorsed as the most common reason, whereas “duty/education” and “close/supportive relationship,” were almost equally cited reasons for disclosure to main partners. Zea et al. (2005) found close friends to be the most common disclosure targets, followed by main partners, amongst a Latino gay and bisexual male sample. Disclosure to these two target groups was also significantly greater than disclosure to family members. Among family members, fathers were disclosed to less often than mothers. Along with disclosure to friends, family and main partners, Zea et al. (2004) evaluated disclosure to casual sex partners. Amongst four target groups (friends, family, main partners and casual sex partners), barriers to disclosure (which included emotional concerns) were predictive of non-disclosure to all three target groups except casual sex partners. Overall, Latino gay men tend to disclose their HIV serostatus to close friends first for reasons of emotional closeness/support and catharsis. Main partners follow second amongst disclosure targets for reasons of emotional closeness/support as well as duty/education. Family members (mothers, primarily) are then disclosed to, followed by casual sex partners. Consistent with the traditional value of *familismo*, both male and female participants cited protecting the family and right to privacy as reasons for not disclosing to parents (Derlega et al., 2004). In an earlier study, Derlega et al. (2002) showed significant negative correlations of the *obligation to protect* and *fear of stigmatization* variables with disclosure to parents. Therefore, the data suggest that

greater overt or pervasive HIV-related stigmatization makes it less likely for individuals to disclose.

*Latinos and HIV.* Latinos are disproportionately affected by the HIV/AIDS epidemic (Miller, Guarnaccia, & Fasina, 2002; Poppen, Reisen, Zea, Bianchi, & Echeverry, 2005). Latinos have faster rates of progression from HIV to AIDS, higher rates of HIV/AIDS-related deaths, and are under-represented in psychosocial interventions for HIV adherence (Gonzalez, Hendriksen, Collins, Durán, & Safren, 2009). Nonadherence may contribute to the development of drug resistance, opportunistic infections, and increasing viral load (Simoni, Pearson, Pantalone, Marks, & Crepaz, 2006).

Numerous theories have been developed in an attempt to explain antecedents and outcomes of disclosing HIV serostatus (e.g., Derlega, Winstead, Greene, Serovich, & Elwood, 2004; Serovich, 2001; Zea, Reisen, Poppen, Bianchi, & Echeverry, 2007). Derlega et al. (2004) suggest that disclosure may be a function of cultural attitudes and contextual factors. Overall, there is consistent evidence suggesting Latino gay men have lower rates of disclosure than White gay men (Mason et al., 1995, Zea, Reisen, Poppen, Echeverry, & Bianchi, 2004). Traditional Latino culture is said to encompass negative attitudes toward homosexuality and communication regarding sexual behavior (Zea et al., 2004; Zea et al., 2007). For example, the Latino value of *respeto* does not allow a woman to discuss safe sex practices with a man (VanOss Marín et al., 1998). The Latino value of *familismo* may also contribute to lower rates of disclosure for the sake of keeping family relations harmonious and protecting the family from embarrassment (Zea, Reisen, & Poppen, 1999). Disclosure to family members has been shown to be based on an evaluative judgment of whether or not the target would be supportive (Bogart et al., 2008). If the target is judged to be non-supportive then disclosure is delayed. If the target is judged to be

supportive, then individuals disclose their serostatus. In both circumstances, the family dynamic is preserved (Bogart et al., 2008).

### *1.2 Theory of Reasoned Action*

Strachan et al. (2007) suggested that attempts to predict conditions that facilitate disclosure might have implications for improving adherence. The Theory of Reasoned Action (TRA; Fishbein & Azjen, 1975) was selected as the theoretical framework for this study because of its established support of predicting intentional behaviors via attitudes and social influence (Ross, Kohler, Grimley, & Anderson-Lewis, 2007). According to the Fishbein and Azjen model, intent to perform a behavior is influenced by individuals' general attitude toward that behavior and their perceived subjective norm related to that behavior (Fishbein & Azjen, 1975). The TRA provides an evidence-based, efficient model for testing components that influence human behavior (Azjen, 1991). The TRA has been applied to multiple health behavior promotion and prevention studies focusing on increasing condom use (Albaraccin, Johnson, Fishbein, & Muellerleile, 2001), increasing participation in HIV/AIDS prevention program such as HIV testing (Kalichmen 2007), and HIV risk reduction interventions for at risk populations (Jemmott & Jemmott, 2007). Thus, the TRA may provide a way to identify and test preventive HIV-related behaviors (e.g., promoting disclosure of HIV status) that in turn have implications for reducing virus transmission (Lewis & Kashima, 1993).

*Attitudes.* Data suggest that the first and strongest determinant of intent to perform a behavior is the person's attitude toward the behavior (Azjen, 1991; Sutton, 1998). According to Ajzen (1988), attitudes are either a negative or positive evaluation of the behavior. These evaluations are then influenced by beliefs about the perceived outcomes and the correlation between these outcomes and subsequent attitudes (i.e. past experiences can influence future

attitudes; Azjen, 1991). A more thorough discussion of attitudes will be introduced in a later section.

*Norms.* The Theory of Reasoned Action and subsequent Theory of Planned Behavior define *subjective norms* as the amount of social pressure that people perceive to or not to engage in a certain behavior (Azjen, 1991). The use of subjective norms (also categorized as injunctive norms), reflects a “motivation to comply” component that strengthens behavioral intent due perceived social pressure to do so (White, Smith, Terry, Greenslade, & McKimmie, 2009). This definition implies that the need to please one’s social group exerts pressure to perform certain behaviors (e.g., “my family really wants me to take my medication”). Several meta-analyses have documented the moderate range of association between subjective norms and intent to perform a behavior (Cooke & French, 2008). However, White et al. (2009) contend that the use of injunctive norms has limited power in predicting intentions, and that broadening the construct may increase its predictive power. One way to broaden this construct is through the use of descriptive norms (Cialdini, Kallgren, & Reno 1991). *Descriptive norms* are defined as “what most people do” versus injunctive definitions that imply “what people should do.” Cialdini, Kallgren, and Reno (1991) argue that the perception of what “most” people do yields a belief that a certain behavior is sensible and effective. In disclosure research, descriptive norms have been used to identify perceived normal group behavior rather than to estimate the amount of social pressure to perform a behavior by that group. Various disclosure models and theories suggest that the decision-making process in disclosing is an internal cost-benefit analysis (Kalichmen & Nachimson, 1999; Serovich, 2001). The disclosing process therefore excludes itself from the injunctive norm form because it is assumed that the disclosure target (e.g., mother) is unaware of the person’s status, and therefore cannot exert any pressure to disclose.

White et al. (2009) suggest that descriptive group norms about the rate of a certain behavior should exert strong influence, especially for individuals who identify with that group in question. For the present study, the Theory of Reasoned Action will be used but adapted to include the descriptive norm form. Specifically, we will operationally define disclosure group norms through a scale developed by Zea et al. (2007). A more detailed discussion of norms and behavior will be presented at a later section.

Evidence in support of the TRA to guide behavioral intervention research has been well documented (Fishbein, 2000). However, one criticism of the TRA as quoted by Martin Fishbein is that these theoretical models are “western...or U.S” (Fishbein, 2000; p. 274;). types that may not apply to certain cultures and communities. Despite this criticism, the TRA has been used in various areas of behavioral health research, and the flexibility of model components support the use of the TRA across diverse ethnic samples (Fishbein, 2000). A study conducted by Lechuga and Wiebe (2009) found that attitudes and norms differentially predicted intention to use condoms when participants were primed to complete surveys in either English or Spanish. The findings support the idea that the TRA in certain circumstances can be moderated by cultural constructs. For the purposes of this study, we seek to understand and evaluate the way in which the effects of attitudes and norms are moderated by acculturation in a sample of Latinos living on the U.S. Mexico border.

### *1.3 Attitudes and Behavior*

Fazio (2007) defines *attitudes* as the relationship between the attitude-object (e.g., a close friend) and the evaluation of that object (i.e., “like” versus “dislike”). Furthermore, attitude-objects can take the form of a concrete object (e.g., condoms), abstract concept (e.g., political ideology), or a particular behavior (e.g., disclosing one’s HIV status; Eagly & Chaiken, 2007;

Fazio 2007). Subsequent evaluations of these attitude-objects can also vary in their conceptualization (i.e., appraised as a wise choice or something one feels angry about). In short, attitudes are simply a summary of evaluations of the attitude-object (Eagly & Chaiken, 2007; Fazio 2007). Over two decades of research provide strong evidence for this working definition of attitudes and the subsequent development of the *Motivation and Opportunity as Determinants of the attitude-behavior relationship model* (MODE model; Olson & Fazio, 2009; Fazio 2007). The MODE model was developed to explicate the way in which attitudes influence corresponding behavior. Essentially, the MODE model outlines multiple paths that the attitude takes in influencing behaviors (e.g. strong attitudes exert more influence than weak attitudes). A meta-analysis by Glasman and Albarracin (2006) provided strong support for the MODE model. Overall, the meta-analysis of the attitude-behavior relationship yielded a moderately high mean weighted correlation between attitudes and corresponding behavior ( $r=.51$ ). Next, the authors evaluated the influence of moderator variables (i.e., variables equivalent to the MODE model paths) on the attitude-behavior link. These moderators (i.e. equivalent of MODE paths) yielded moderate to high correlations between the attitude-behavior relationship and attitude stability (i.e., attitudes less likely to change are considered strong and vice versa;  $r=.66$ ), beliefs about behavior outcomes ( $r=.50$ ), direct experience (i.e., prior experience engaging in the behavior;  $r=.83$ ), confidence that attitudes are correct ( $r=.44$ ), attitudes that can easily be recalled ( $r=.40$ ), the absence of two-sided questions (e.g., only positive or only negative information is presented and used when forming an attitude;  $r=.72$ ) and finally the hedonic-instrumental relationship (i.e., attitudes and behaviors that are matched on emotions or cognitive appraisals;  $r=.81$ ). The last path has been previously investigated and may have strong implications for health behaviors that people do for affective reasons (e.g., pleasure or anger) or cognitive reasons (e.g., appraised to be

wise or risky; Lawton, Conner, & McEachan, 2009; Millar & Tesser, 1986). Specifically, attitudes based on the hedonic-instrumental relationship are assumed to be evaluations that develop from qualitatively different types of information than general attitudes (e.g., simple good-bad dichotomy; Crites, Fabrigar, & Petty, 1994). The term *hedonic-instrumental* is synonymous with term *affective-cognitive* in describing this dimension of attitudes and for convenience will henceforth be exchanged for the latter term. Millar and Tesser (1986) suggest that attitudes can be characterized as affective and cognitive evaluations that are strengthened when the behavior being evaluated is more cognitively or affectively driven. For example, disclosing one's HIV status to a casual sex partner may be done for the logical reason not to infect the other person, whereas disclosure to a close friend may be done as a cathartic method of "getting something off one's chest." Both the behavior (disclosing for emotional relief) and the attitude-object (close friend) involve evaluations that are more affectively, and thus increases the predictive power of the attitude (Crites, Fabrigar, & Petty, 1994; Glasman & Albarracin, 2006). Consistent evidence suggests that disclosure to specific targets (friends, family, main partners, and casual sex partners) is done for various reasons that are either cognitively driven (educate the other person, not transmitting the virus, or to avoid legal consequences) or affectively driven (seek emotional relief, or gain social support) or both (Derlega et al., 2004 & 2005; Serovich et al., 2005).

According to Ajzen (1991), we have positive attitudes towards behaviors that have desirable consequences. However, others have noted that attitudes can be influenced by external factors such as motivation to think (i.e., reason to evaluate), opportunity (i.e., sufficient time to evaluate with no distractions), context (e.g., setting in which evaluation takes place), as well as internal factors such as the extent to which the thoughts, beliefs and emotional reactions are said to be

valid (Petty & Brinol, 2010). When influential components of the attitude are congruent (object and evaluation both affectively driven), the speed of the evaluation, and confidence in that evaluation are said to be high (Petty & Brinol, 2010) and thus predictive of subsequent behavior (Fazio, 2007). Furthermore, the Elaboration Likelihood Model (ELM) of Persuasion supports the effect these external and internal variables have on attitudes (Petty, Barden, & Wheeler, 2009). According to the ELM, thoughtful consideration of the information about the attitude-object is equated with an evaluation of the desirability of the outcome under consideration and the likelihood that this outcome will be obtained (Petty, Barden, & Wheeler, 2009). For example, the more time spent evaluating whether or not to disclose one's HIV status to a family member, the more likely it is that they are evaluating their actual desire (e.g., "I really want to tell them") and the likelihood that this outcome will be beneficial (e.g., "they are going to support me no matter what"). The ELM and MODE model view of attitudes and behavior also provides evidence for support of the cost-benefit analysis model of disclosure provided by Serovich (2001). However, in an attempt to move beyond a single dimension of attitudes (e.g., good-bad dichotomy), and take advantage of the predictive power found when the affective-cognitive dimensions are congruent, we will attempt to map the disclosure process onto research on attitude structure and the attitude-behavior link.

#### *1.4 Social Norms and Behavior*

The impact of norms in predicting behavior has been studied extensively using both the TRA and The Theory of Planned Behavior (White, Smith, Terry, Greenslade, & McKimmie, 2009). However, recent research suggest that traditional usage of this variable in predicting behavior can be improved upon by broadening the typical definition of norms as previously discussed in Section 1.2. A succinct definition of norms via the social norms theory suggests that individuals

are influenced by their perception of other group members' behavior. (Scholly, Katz, Gascoigne, & Holck, 2005). Traditionally, the TRA has conceptualized norms as norms in the *injunctive form* due to the perceived social pressure/motivation to comply nature of them. These injunctive norms (usually referred to as subjective norms) influence intent to engage in a certain behavior because one may be motivated to comply with what they feel or think other important people want them to do (e.g., "my family wants me to stop smoking;" Azjen, 1991). A necessary distinction to reiterate is the difference between *injunctive norms* and *descriptive norms*. Data suggest that *descriptive norms* may be more predictive of intention to engage a certain behavior (Kallgren, Reno, & Cialdini, 2000, Rimal, 2008; Smith & Louis, 2008). *Descriptive norms* refer to what most people do (Cialdini, Kallgren, & Reno, 1991). In a study by Rimal (2008), descriptive norms were found to influence self-reported injunctive norms. Specifically, students' reports of normal drinking behavior among other group members influenced their expectations to comply with those norms (i.e. perceived high frequency of drinking led to more motivation to comply with those norms). Rimal (2008) concluded that descriptive norms (i.e., what most people do) influenced injunctive norms (i.e., pressure to conform to the group), therefore suggesting that descriptive norms are a more immediate and powerful determinant of behavior. White et al. (2009) also suggest that these norms are more powerful when one strongly identifies with the group in question. Others have also suggested that group membership must be salient in order for norms to influence behavior (e.g., collective self versus private self; Triandis, 1989; Kallgren et al., 2000). Kallgren and colleagues (2000) found that norms only predicted rates of littering when the norms were made salient to the participants. Gelfand, Nishii, and Raver (2006) offered a theoretical explanation of the strength of norms and sanctions by saying "external norms affect internal states, which in turn reinforce external norms...strong norms and

sanctions in tight as compared with loose societies...result in stronger alignment and strength of organizational cultures” (Gelfand, Nishii, & Raver, 2006, p. 1237). The authors imply that individuals moving from a tight (i.e., traditional Latino) society to a loose (i.e., individualistic American) society will experience different types of stress. These stressors will affect their behavioral expectations because they may no longer be experiencing sanctions to or not to perform a behavior. Therefore, the power of norms to influence behavior is predicated on the saliency of the group norm and how strongly one identifies with that group.

Zea et al. (2004) investigated the role of norms in predicting disclosure. They concluded that the norm for disclosure was an important social influence that included both behavioral patterns and group attitudes (i.e. collective evaluation of some behavior). Others have also documented that following group norms strengthens the attitude-behavior through repetition of engaging in some behavior (White et al., 2009). However, in the area of disclosure, multiple norms may be at play due to the fact that disclosure rates vary depending on disclosure target. Overall, the extent of a perceived norm of disclosure among Latino gay men predicted disclosure to specific targets of casual sex partners, family, and friends (Zea et al., 2004). The authors suggest that social norms influence Latino gay men’s levels of disclosure because both Latino and gay cultures are highly inter-dependent.

### *1.5 Latinos and Acculturation*

There is an abundance of data to suggest that acculturation to the U.S. is associated with greater mental and physical health-promoting behavior in Latinos (Bianchi, Zea, Poppen, Reisen, & Echeverry, 2004; Lara, Gamboa, Iya Kahramanian, Moralez, & Hayes Bautista, 2005; Rojas-Guyler, Ellis, & Sanders 2005; Torres & Rollock 2007). More recently the conceptualization of acculturation has become more comprehensive and detailed as investigators seek to learn and test

the processes involved when minority groups adopt dominant group culture, beliefs and attitudes (Landrine & Klonoff, 2004; Phinney, 2003). Despite general patterns of greater well-being among highly acculturated Latinos, many have challenged the conceptual and operational definitions of acculturation (Lara et al., 2005).

*The Unidimensional Approach.* Traditionally, acculturation was referred to and measured as a process by which individuals adjust to a new culture in a linear fashion (Ryder, Alden, & Paulhus, 2000). The first models of acculturation described an assimilation process by which individuals adopt the new culture exclusively as they relinquish any ties to their culture of origin (often referred to as a unidimensional approach; Zea, Asner-Self, Birman, & Buki, 2003). Unidimensional models assume that over time individuals will adopt all values of dominant culture at the expense of their native values (Lara et al., 2005). It is commonplace for researchers measuring acculturation unidimensionally to use proxy assessments as indices of assimilation. These proxy variables are advantageous in that the data are concise and easy to collect. Examples of these proxy measures include: language use, generational status, years lived in the new country or community, and preference for food and music (Ryder, Alden, & Paulhus, 2000). The unidimensional approach assumes that acculturative stress (stress due to change in identity, setting, and customs) would be relieved by relinquishing one's native culture and assimilating in the majority, and thus this course of action would be beneficial for the individual (Ryder, Alden, & Paulhus, 2000; Torres & Rollock, 2007). However this conceptualization of acculturation is not without limitations. Two of the most salient criticisms are that unidimensional approaches are plagued by psychometric instability (e.g., most assessments use one to two items and thus any internal consistency coefficients are low) and low predictive power, and that more modern

conceptualizations have fared better in predicting health-related outcomes (Huynh, Howell, & Benet-Martinez, 2009; Landrine & Klonoff, 2004; Torres, Rollock, 2000)

*The Bidimensional Approach.* Bidimensional approaches to acculturation allow for the integration of values and norms from both the culture of origin and host culture (Berry, 1990). This approach has several key assumptions. First, acculturation is continuously occurring both in the culture of origin and the majority culture. Secondly it occurs in the context of social contact with the majority culture and “not in a vacuum” (pg.120; Zea, Anser-Self, Birman & Buki 2003). Thirdly, acculturation to one’s culture of origin and the majority culture are orthogonal (i.e., two separate self-concepts are developed; Ben-Shalom & Horenczyk, 2003; Ryder, Alden, and Paulhus, 2000). Fourthly, individuals are capable of having dual identities that shift values, attitudes and behaviors as they encounter new situations. If these assumptions hold true, then unidimensional approaches would yield misleading interpretations of the effects found when analyzing statistical relationships amongst acculturation and outcome variables of interest (Ryder, Alden, & Paulhus, 2000). More recently, assessments that are said to have multiple components within each dimension define a multidimensional approach. These components include: 1) behaviors, 2) cultural identity, 3) knowledge of both cultures, 4) language use/competence, and 5) values for both the majority and native culture (Zea et al., 2003). Data suggest that the first four components to some degree reflect superficial immersion, while adopting the dominant cultural values indicates a deeper level of acculturation (Marín, 1992; Zea et al., 2003). In two studies evaluating the role of cultural competence (i.e. level of perceived functioning in mainstream culture) on a physical and mental health outcome found that greater coping was associated with competence variables. Increased coping resulted in greater health behaviors and reductions in depressive symptoms (Bianchi et al., 2004; Torres & Rollock,

2007). The latter study suggest that multidimensional approaches would yield similar findings due to the predictive power of competence and values (Torres & Rollock, 2007).

*Acculturation and Disclosure.* Overall, a pattern of research suggests that HIV+ Latinos who identify themselves as being gay and/or who are highly acculturated to the U.S. have higher rates of disclosure of their serostatus to friends, family, and main partners (Mason, Marks, Simoni, Ruiz, & Richardson, 1995, Zea, Reisen, Poppen & Diaz, 2003; Zea et al., 2005; Zea et al., 2007), while Latinos who strongly identify with gay community norms report lower rates of disclosure to casual sex partners (Sheon & Crosby, 2004). On the other end, those who have lower average levels of acculturation and endorse reasons to sustain a harmonious family dynamic cite the need to protect the family from shame, stigmatization and discrimination (Mason et al., 1995; Zea, 1999). Therefore, these data suggest that individuals who differ on acculturation have different rates of disclosure to different disclosure targets. If the bidimensional assumptions hold, then it is evident that there is a need to understand how a single individual who is bicultural will be influenced by the values available to them from the majority culture and from their culture of origin.

### *1.6 Aims and Hypotheses*

*Study Aim I.* The primary goal of the study is to investigate whether disclosure of HIV+ serostatus will be predicted preferentially by attitudes for those who are highly acculturated and preferentially by norms for those who are less acculturated. Support for how attitudes and norms differentially predict behavioral intention has been documented using a similar sample of participants of Mexican descent (Lechuga & Wiebe, 2009)

*Hypothesis 1.* We hypothesize that participants who have higher levels of acculturation will have a stronger association between their overall level of disclosure and attitude toward

disclosure, and that participants who are less acculturated will have a stronger association between disclosure and perceived norms. Thus, we expect to find that depending on the level of acculturation, attitudes and norms have different strengths of associations with the overall level of disclosure – that the TRA predicts differently depending on cultural context.

*Study Aim II.* The second goal of the study is to understand how cognitive or affectively-based attitudes towards each disclosure target vary depending on the type of relationship. According to Derlega et al. (2002), friends were disclosed to most frequently for emotional support reasons, whereas Derlega et al. (2004) found that the reason for disclosure to casual sex partners was a duty or obligation to educate them about an individual's HIV serostatus. Zea et al. (2007) operationalized casual sex partners as sharing a “relationship that is sexual...no emotional intimacy.” Therefore, we expect there to be differences in cognitive and affectively-based attitudes toward disclosure depending on who the participant is disclosing to.

*Hypothesis 2.* Given the emotional bonds between close friends, we hypothesize the correlation between an affectively-based attitude toward disclosure and disclosure rates to close friends to be stronger than the correlation between cognitively-based attitude toward disclosure and disclosure rates to close friends.

*Hypothesis 3.* Derlega et al. (2002) reported mean ratings of reasons for disclosure to main partners. Relative equivalence was seen between means for “emotional/supportive relationships (affectively-based)” and “duty/education (cognitively-based).” Therefore, disclosure towards significant others may function to both educate and precipitate emotional support. This would indicate that the disclosure attitudes of highly close partners, either family or friends, vary along at least two dimensions. However, because the sample in this study is expected to be Latino, we might expect that cultural values would influence the relationship by

priming disclosure as a necessity to protect a family member from shame. As a way to explore the relative strength of cognitive and affective attitudes on disclosure to main partners, we will test for significant differences between these two correlations to determine which attitude is more strongly associated with disclosure behaviors.

*Hypothesis 4.* A majority of the literature suggests that disclosure to family (i.e., mothers, primarily) is driven by cognitively-based needs to educate or a felt duty to disclose (Derlega, 2004). However, taking into account family dynamics that are specific to Latinos (e.g., *personalismo*), there may be an emotionally-based component to disclosure that has yet to be supported. For example, Zea et al. (2004) found associations between emotional closeness factors and disclosure to mothers and fathers in a Latino sample from New York and Washington, D.C. These findings suggest differences between ethnic groups in reasons for disclosure. However, variation in reasons and rates within ethnic groups has been reported as well (Mutchler et al., 2008). According to Mutchler et al. (2008), Latinos on the U.S.-Mexico border were less likely to disclose than Latinos from other regions and countries. . As Derlega et al. (2003 & 2004) have reported, both cognitive and affectively categorized reasons for disclosure were equally endorsed when referring to partners and family members. Thus, an exploratory approach will guide our test for the differences in attitudes.

*Hypothesis 5.* According to Poppen, Reisen, Zea, Bianchi, & Echeverry (2005), disclosure is more likely to occur with main partners than with casual sex partners as a result of emotional feelings toward those individuals. On a continuum model developed by Bairan et al. (2007), the lowest rates of disclosure was found towards casual sex partners where emotional attachment is not associated with disclosure. Findings by Derlega et al. (2004) indicated that duty to educate/responsibility to disclose (cognitively-based reasons) were highest for disclosure

to casual sex partners. Furthermore, Zea et al. (2007) found emotional concerns were predictive of non-disclosure to all targets except for casual sex partners. We hypothesize that the correlation between cognitively-based attitudes toward disclosure and disclosure rates to casual sex partners will be stronger than the correlation between affectively-based attitudes and disclosure rates to casual sex partners.

Should hypotheses two through five be supported, the literature on reasons for disclosure would be supported by an attitudinal component that has yet to be investigated.

## METHOD

### *2.1 Participants*

All participants in this study were recruited from Centro de Salud Familiar La Fe CARE Center in El Paso, Texas. La Fe CARE Center is a local health-care center that offers comprehensive HIV/AIDS services to those living on the U.S.-Mexico Border.

*Inclusion Criteria.* To participate in the study, individuals must have been: (1) 18 years of age, (2) be HIV-positive, (3) identify as Latino/Hispanic, (4) speak either English or Spanish, and (5) currently be on Highly Active Antiretroviral Therapy (HAART; the concurrent study deals with adherence to medication).

### *2.2 Measures*

*Disclosure.* Our dependent variable was assessed using the HIV Disclosure Scale developed by Ron Duran (Duran, 1998). The disclosure scale was completed in a one-on-one interview format with the participant and a research assistant. The interviewer asked participants how many people make up the 11 different disclosure groups (*main partners, mother, father, children, brother, sister, aunt, uncle, cousins, close friends, and casual sex partners*). Then, participants were asked about the number of people in each group (e.g., casual sex partners) to whom they have actually disclosed their HIV status. Originally the scale did not include a group labeled *casual sex partners*. In our adaptation, we divided the category of “romantic/sexual partners” into “main partners” to represent persons with whom participants were in a steady relationships with and “casual sex partners” to represent sexual relations one may have with a non-steady partner. A disclosure rate was calculated by summing across all those to whom a participant has disclosed and dividing by the total number of disclosure targets available.

*Acculturation.* The Abbreviated Multidimensional Acculturation Scale (AMAS) was developed to incorporate the multi-dimensional process of acculturation (Zea, Asner-Self, Birman, & Buki, 2003). It has been validated in two separate Latino samples in both English and Spanish. The scale consists of 42 items, with a 4 point Likert-type response format ranging from 1 (*strongly disagree*) to 4 (*strongly agree*) for the cultural identity subscales and 1 (*not at all*) to 4 (*extremely well/like a native*) for language and cultural competence subscales. For each subscale (cultural identity, language competence and cultural competence) there exist two dimensions (acculturation to the U.S and acculturation to your culture of origin).

Internal consistency was assessed using Cronbach's alpha for the 21-item measure of acculturation to the U.S. ( $\alpha=.94$ ). The remaining 21-items assessing acculturation to one's culture of origin produced an equivalent reliability coefficient ( $\alpha=.94$ ). To assess validity of the instrument, the AMAS was compared with Phinney's (1992) Multigroup Ethnic Identity Scale (Zea, Anser-Self, Birmen & Buki, 2003). Criterion-related validity coefficients for all subscales were statistically significant, ranging from  $r=.26$  ( $p<.01$ ) to  $r=.47$  ( $p<.0001$ ). The total score for each factor (i.e., U.S. and culture of origin acculturation) is gathered by summing the averages of each of the three subscales scores for the factor.

*Norms.* Zea et al. (2007) developed a 4-item scale to assess peer norms for disclosure of HIV serostatus. The four questions reflect beliefs about the proportion of Latino men who have sex with men who have disclosed their HIV serostatus to main partners, friends, family and casual sex partners. Responses ranged from 1-*none* to 4-*all or nearly all* and produced Cronbach's reliability coefficient of .74. Two modifications have been made to the original scale. The questions now exclude the description of "men who have sex with men," and was replaced with "how many Latino men who you believe have disclosed to their HIV status

to...(e.g. main partner, etc...)” to prime for ethnic group membership. Secondly, the response format has been widened and now ranges from 1(*none*) to 7 (*all*), with five middle anchors (i.e., *a few, less than half, about half, more than half, almost all*). Increasing the response format from four to seven point anchors is said to improve reliability, be optimal for understanding the difference in meaning between each point, and allow the participant to arrive at a more accurate assessment (Krosnick, Judd and Wittenbrick, 2005). The main objective is to measure the strength of perceived norms for disclosure among other similar Latino men.

Although it has been suggested that perceived disclosure norms may shift as a function of acculturation (e.g. one may follow mainstream norms as opposed to culture of origin norms; Zea et al., 2007), this suggestion has yet to be empirically validated. Our first hypothesis is that individuals with higher levels of acculturation will use their attitudes to dictate their level of disclosure more so than descriptive norms. However, this potential shift in norms suggests that a second set of norms may be responsible for disclosure rates (i.e. mainstream norms), as opposed to our hypothesis that higher acculturated individuals will prefer follow their individual attitudes. To eliminate this threat to the validity of our hypothesis test we measured a second set of opposing norms to directly compare to our norms of interest, as suggested by Shadish, Cook and Campbell (2001). Four additional items that were identical to existing items, with the exception of the “NOT Latino” indicator were added to assess a second set of norms. For example, one question read “how many HIV+ men who are NOT Latino do you think tell their mothers that they are HIV positive?” as compared to “how many HIV+ men Latino men do you think tell their mothers that they are HIV positive?”

*Attitudes.* We used semantic differential test items to assess affectively driven attitudes and cognitively driven attitudes toward disclosure of HIV status to four specific targets (*family,*

*friends, main partners and casual sex partners*) first developed by Crites, Fabrigar, & Petty (1994). The scale is divided into two subscales to assess affectively driven attitudes (e.g. humiliating, stressful) and cognitively driven attitudes (e.g. wise, beneficial). The semantic differential response format was used to indicate the position that best describes the participant's affective or cognitive attitude toward disclosing to a specific target. For example, the instructions provided to the participant state, "please indicate your attitude toward disclosing your HIV serostatus to a casual sex partner," and are followed by two semantic anchors between which participants indicate where they fall on the continuum (*Wise* \_ \_ \_ \_ X *Foolish*). Cronbach's alphas for each of the subscales indicate high internal-consistency reliability at .94 for the 8-item affective scale, and .91 for the 7-item cognitive scale. These assessments of affectively and cognitively-based attitudes were used to predict the association with affectively or cognitively characterized reasons for disclosure to specific targets (i.e. friends are associated with emotional closeness more so than casual sex partners).

*Translation Process.* When possible, all scales that were published and validated in Spanish were used. When scales were not published or unavailable in Spanish, each one was translated by a certified translator in the Department of Languages and Linguistics at the University of Texas at El Paso. All measures were translated into Spanish by a certified translator, and then assessed for cultural relevance of terms and phrasing by the Nuevo Día research team (see section 2.3). If any changes were suggested were sent back to the certified translator and sent to a second translator for back translation. Once back translations were completed, group meetings among all staff finalized any remaining issues. Prior to the start of the survey, all measures were tested by staff members and HIV+ peer advocates at the center where the data were collected.

### *2.3 Procedure.*

This study was part of a larger randomized control trial (RCT) by Drs. Jane M. Simoni (University of Washington) and John S. Wiebe (University of Texas at El Paso) titled Nuevo Dia. Internal Review Board approval was obtained for this study at the University of Washington and the University of Texas at El Paso. Participants were recruited via posters and handouts advertising the RCT. These recruitment materials were available in the clinic waiting room, exam rooms, and at the front desk for all patients. Phase One of the RCT was advertised as a survey assessment of psychosocial issues related to living with HIV. Included in this assessment were all scales for the present study. Other clinic staff, caseworkers, or physicians could also refer patients to the study. After participants self-referred or were referred by staff, we proceeded through the informed consent process immediately if participants had time prior to or after their medical appointments, or they were scheduled to return and complete the assessment at a later date.

Participants were informed that the assessment would have two parts. They were told we would first be interviewing them to discuss sensitive issues such as sexual history and drug use, and secondly we would be giving them a questionnaire assessment to complete. A research assistant conducted the initial interview with the participants and together assessed their Norms for Disclosure, Affective, Cognitive and Overall Attitudes Toward Disclosure, and overall rates of disclosure via the Total Disclosure Scale. After the interview, participants were given the assessment packet that included the Abbreviated Multi-dimensional Acculturation Scale to complete on their own. Once the assessment was completed, participants were thanked and compensated with twenty dollars cash.

## 2.4 Statistical Analyses

*Fisher's z' transformation and Steiger's Z-test.* Hypotheses  $H_2$ ,  $H_3$ ,  $H_4$ , and  $H_5$  were constructed to assess the differences in strength between two correlated correlations (i.e., "is the difference between  $r_{xz}$  and  $r_{yz}$  statistically significant?"). It is important to note that  $r_{xz}$  is the correlation between participant X's affective attitude score and disclosure rate to a specific target, and  $r_{yz}$  is equal to the correlation of that same participant's cognitive attitude score and the same disclosure rate to the same target for comparison, thus the correlations share a common variable (disclosure rate). It is standard practice to assess this difference by transforming these correlations using Fisher's  $z'$  transformation of  $r$  in order to obtain a  $Z$  statistic that is normally distributed and whose standard error is known in two independent samples (e.g.,  $r_{xy}$  in males and  $r_{xy}$  in females). However, we did not have independent samples to compare, and thus the correlations are said to be correlated correlations and any significance testing would not yield accurate results. Alternative statistical methods for significance testing between correlated correlations include Hotelling t-test (1940) and more recently Steiger's Z-test (1980). Hotelling's t-test is limited by the fact that the mathematical formula includes correlational values that have not been standardized and thus violates distributional assumptions. Secondly, Steiger (1980) provides evidence to suggest Hotelling's t-test tends to overestimate the resulting t-value and thus increases the probability of a type-I error. Steiger's Z-test remedies this problem of distributional assumption and non-independence of samples by transforming  $r$  to  $z$  and utilizing these  $z$ -scores in his test formula along with an additional mathematical constant (See Figure 1). The final Z-score was then obtained and evaluated to assess whether it exceeds the 1.96 critical value.

*Moderated Multiple Regression.* Moderated multiple regression (MMR) analysis was used to analyze a three-way interaction necessary to support  $H_1$ . The level of disclosure (Y) will be regressed on a collapsed attitudes scored (X; i.e., cognitive and affective attitudes summed together) and perceived Latino norms for disclosure (Z) at various levels of acculturation to the U.S. (W;  $Y = b_0 + b_1X + b_2Z + b_3W + b_4XZ + b_5XW + b_6ZW + b_7XZW + e$ ). Each of the main variables were standardized first, and then multiplied to create our interaction terms as suggested by Dawson and Richter (2006). After standardization, the main effects were entered into the equation first, followed by two-way interactions terms (attitudes X norms, norms X acculturation, and attitudes X acculturation), and third by the three-way interaction terms (attitudes X norms X acculturation). Dawson & Richter (2006) detailed a statistical method for interpreting three-way interactions in a regression analysis by using significance testing for slope differences. We also investigated any problems that arose due to heteroscedasticity by plotting the residuals by their x values and evaluating for any relationships that suggest that as x increases so do their residuals, and utilize the variance inflation factor heuristic of  $VIF < 10$  to assess for multicollinearity.

### *2.5 Power Analysis*

A power analysis was conducted for hypotheses two through five. Detecting a medium effect ( $q=.30$ ) for differences between two correlations at  $\alpha = .05$ , with power of .80, requires a sample size of 177 (Cohen, 1992). Our first hypothesis will utilize a moderating multiple regression three-way interaction test. A power analysis was conducted for this regression test with a medium effect ( $q=.30$ ),  $\alpha = .05$ , and with the standard power estimate of .80. However, Dawson and Richter (2006) suggest that finding and subsequently interpreting a three-way interaction effect requires additional steps. Of primary concern is variable distribution (i.e.,

range restriction of our predictor variables). Taking into account this issue along with the other standard power parameters requires a sample size of 200.

## Results

### 3.1 *Description of Sample and Subsamples*

A total of 247 HIV+ individuals completed self-report measures for their attitudes toward disclosure and overall disclosure rates (English  $n=118$ , Spanish  $n=129$ ). Seventy-nine percent identified as male, 19.4% identified as female, and 1.6% identified as transgender (including male to female and female to male). Our total sample had an average age of 46.4 years ( $SD=10.11$ ; English  $M=45.9$ ,  $SD=9.96$ ; Spanish  $M=46.78$ ,  $SD=10.26$ ) and had been living with HIV an average of 10.4 years ( $SD=7.12$ ; English  $M=11.6$ ,  $SD=7.88$ , Spanish  $M=9.4$ ,  $SD=6.20$ ). Participant characteristics for the full sample as well as by language can be seen in Tables 1 and 2. It is important to note that each of the five hypotheses yielded five separate sub-samples that were assessed on analysis-by-analysis basis. For example, Hypothesis Five involved the correlation between attitudes and disclosure to casual sex partners; however only 95 of the 247 total participants self-reported having had casual sex partners since being diagnosed with HIV.

For Hypothesis One, a three-way interaction was predicted among attitudes, norms for disclosure and acculturation. In order to complete the Abbreviated Multidimensional Acculturation Scale, participants had to identify as Hispanic/Latino. Also, the Norms for Disclosure Scale was developed and adapted for Latino gay men only. Thus, listwise deletion among the three predictors (i.e., attitudes, norms and acculturation) yielded a sample size of 105. The remaining four hypotheses were testing for significant differences between two correlations. Hypothesis Two (disclosure to friends) yielded a sample of 171. Hypothesis Three (disclosure to main partners) yielded a sample size of 130. Hypothesis Four (disclosure to family members) yielded a sample size of 188. Hypothesis Five (disclosure to casual sex partners) yielded a sample size of 95.

### 3.2 Scale Reliability

Internal consistency estimates were derived utilizing Cronbach's alpha for our three predictor variables. First, our 24 item Attitudes Toward Disclosure measure (i.e., total score represents a global attitude toward disclosure) yielded a moderately high internal consistency coefficient ( $\alpha=.89$ ). For Hypotheses Two to Four, we analyzed our data using the cognitive and affective subscales. For our 12-item affective attitude subscale, Cronbach's alpha was also moderately high (.86). For our remaining 12 items that assessed cognitive attitudes toward disclosure, Cronbach's alpha was .81.

We assessed *norms for disclosure* for two norm groups. The first four items specified the perceived frequency (descriptive norms) of disclosure for one's Latino in-group, and the other four items specified norms for "non-Latino" individuals. Together, the 8-item measure yielded a moderate Cronbach alpha coefficient (.79). The "Latino" subscale yielded a less internally consistent estimate ( $\alpha=.59$ ), while the "non-Latino" subscale showed greater internal consistency ( $\alpha=.81$ ). Our three-way interaction prediction (Hypothesis One) utilized the subscale score for norms for Latino in-group membership.

The 42-item Abbreviated Multidimensional Acculturation Scale yielded a moderately high internal consistency estimate ( $\alpha=.91$ ). For our three-way interaction prediction, we only utilized the 21-item subscale measuring the dimension of acculturation to the United States. The remaining 21 items assessed the level of acculturation to one's culture of origin. The U.S. subscale yielded the highest internal consistency estimate ( $\alpha=.97$ ). Reliability coefficients for all scales can be found in Table 3.

### 3.3 Disclosure Scores

We examined disclosure to specific targets (e.g., close friends) by dividing the number of individuals that make up the target group (e.g., self-report of four close friends) into the number of individuals in that group to whom one has actually disclosed (e.g., disclosed HIV status to two of listed four close friends) to arrive at a total percentage of individuals to whom one has disclosed (i.e., total disclosure to close friend rate equal to .50). Our Total Disclosure Scale specifies 11 possible targets for disclosure: Main partner, children, mother, father, brother, sister, cousin, aunt, uncle, close friends, and casual sex partners. An overall disclosure percentages was calculated by summing up the number of individuals from all 11 target groups and dividing that into the total number of individuals in all 11 groups to whom the participant had actually disclosed. Our sample yielded an overall disclosure percentages of 35% of all listed targets. That is, on average only 35% of individuals that make up our sample's social network were disclosed to. For our five hypotheses, we are specifically interested in an overall disclosure rate, as well as individual rates of disclosure to main partners, family members, close friends, and casual sex partners.

Not all participants had main partners to whom to disclose and thus the number of cases for this analysis was reduced depending on the number of self-reported targets. For those who did have main partners, we found the highest percentage of disclosure (85%,  $n=130$ ). Next, we operationalized disclosure to family members by only including immediate family-of-origin members (mother, father, brother, and sister) in our calculation (Serovich, Esbensen, & Mason, 2005). For family members, our sample had an average disclosure percentage of 56% ( $n=193$ ). To assess disclosure to friends, we asked participants specifically about the number of "close friends" they considered to be a part of their social network. Our sample indicated having

disclosed to 60% of their close friends ( $n=171$ ). Finally, we assessed disclosure to casual sex partners. Casual sex partners were operationally defined as someone with whom you have had a sexual but non-emotional relationship (Zea et al., 2007) to ensure that all friends with whom one may have had sexual relationships are excluded from this category. As described earlier, only 95 of the total 247 participants who completed this survey self-reported having casual sex partners. Of those who have had casual sex, only 61% of those partners had been disclosed to. A list of all disclosure rates for our total sample and across language can be seen in Tables 4 and 5.

### *3.4 Comparisons between Languages*

Independent samples t-tests were used to test for any statistically significant differences between those participants who completed the survey in English and those who completed it in Spanish. We tested for mean differences on demographic (age and years living with HIV) and predictor (scores on measures of attitudes, norms, acculturation and disclosure rates) variables. We did find statistically significant differences between English and Spanish-speakers in acculturation to the U.S,  $t(107) = 7.88, p < .001$ ; cognitive attitudes toward disclosure,  $t(107) = 2.86, p < .01$ , and disclosure percentages to immediate family  $t(107) = 2.23, p < .05$  but not overall to all 11 applicable targets. Across these differences, English speakers scored higher on acculturation, reported greater cognitive attitudes, and disclosed to a larger percentage of their immediate family targets than their Spanish-speaking counterparts (see Table 6). All other mean scores differences were not statistically different across language.

### *3.5 Acculturation Moderating the Theory of Reasoned Action.*

A total of 107 cases were eligible for analyzing our first hypothesis. We predicted that acculturation to the U.S. would moderate the effects of attitudes toward disclosure and norms for disclosure in predicting an overall disclosure rate. For the computation of the dependent variable

(disclosure) we only included seven possible targets: main partners, mother, fathers, brothers, sisters, close friends and casual sex partners. The preceding grouping of targets was used due the nature of our attitude measure that explicitly ask participants to rate their attitude toward disclosure to the groups listed above. Secondly, the Norms for Disclosure Scale is designed for use by Latino gay men only. This reduced the number of eligible cases for analysis and our subsequent statistical power. To achieve a power level of (.80) for our three-way interaction, a sample size of 200 cases was needed. Due to our inclusion criteria and the demographic make-up of our sample, the power to detect our predicted effect was significantly attenuated.

Each of the three predictor variables: global attitude score (affective and cognitive attitude scores combined;  $M=31.59$ ,  $SD=29.71$ ), norms for disclosure amongst other Latino in-group members total score ( $M=10.37$ ,  $SD=2.51$ ) and acculturation to the U.S. total score ( $M=62.22$ ,  $SD=17.00$ ) were standardized prior to computing interaction terms as suggested by Dawson and Richter (2006). When variables have been standardized prior to entering them into a regression equation, raw betas ( $b$ ) are used to represent standardized regression weights in place of standardized betas ( $\beta$ ). However, for convenience, we will use  $\beta$  as the standard notations. In the first step, our disclosure rate ( $M=54\%$ ,  $SD=35\%$ ) was regressed on each of our three main effects, resulting in a statistically significant amount of variance explained  $R^2=.15$ ,  $F(3,103)=6.11$ ,  $p=.001$ . Attitudes and norms were significant predictors in this step:  $\beta_{attitudes}=.13$ ,  $p=.000$ , 95% CI [.06, .19],  $\beta_{norms}=.07$ ,  $p=.04$ , 95% CI [.01, .14]. The main effect of acculturation was non-significant ( $\beta=.01$ ). In the second step, the three standardized interaction terms were entered ( $XY=attitudes \times norms$ ,  $XZ=attitudes \times acculturation$ , and  $YZ=norms \times acculturation$ ). The change in variance explained in our second step was non-significant ( $R^2\Delta=.04$ ). Each of the three interaction terms was also non-significant ( $\beta$ s for  $XY$ ,

XZ, and YZ =-.03, .04, and .07). Finally, a fourth interaction term was entered in the third step (attitudes X norms X acculturation). This final step yielded a non-significant change in the variance explained ( $R^2\Delta=.02$ ,  $p= .20$ ,  $b =.06$ ,  $10 p= .$ ; see Table 7). Correlations among all predictors can be found in Table 8.

A follow-up analysis was done to test the possible threat to the validity of our first hypothesis test as suggested by Shadish, Cook and Campbell (2001). It was hypothesized that norms for Latino in-group membership would significantly interact with acculturation in predicting disclosure. However, others have noted (Zea et al., 2007) that norms may shift depending on how one self-identifies (e.g., identifies more as an American than Mexican or Mexican-American). To test this threat, we analyzed our three-way interaction substituting the total score on the norms scale for in-group membership with norms for out-group membership (e.g., I think Non-Latino men disclose to their close friends...most of the time). In the first step, attitudes as a main effect was the only significant predictor,  $\beta=.13$ ,  $p=.000$  and the variance explained was statistically significant:  $R^2= .12$ ,  $F(3, 103) = 4.4$ ,  $p=.005$ . The subsequent “other” norm group score was non-significant ( $\beta= -.04$ ). Each of the next two steps did not result in any significant change in variance ( $R^2\Delta=.03$ ,  $01$ ); see footnote in Table 7.

### *3.6 Test For The Differences Between Dependent Correlations*

To evaluate which attitude dimension (affective or cognitive) was more strongly related to disclosure to a specific target (e.g., family members), one set of correlations and Steiger’s Z-test statistic were run (see Figure 1), corresponding to each of the four hypothesis. Due to the continuous scale of measurement, Pearson product-moment correlations were used for attitude scores and disclosure to close friends, family members and casual sex partners. For disclosure to main partners, a point-biserial correlation was used due to the binary nature of scoring this

disclosure rate. That is, participants were given a score of 1 (yes) if they had a main partner and they had disclosed to that partner, and given a score of 0 (no) if they had a main partner to whom they had NOT disclosed. These values (0 or 1) were then correlated with the continuous scores on the attitude scale. We also ran paired-samples t-test for mean differences in attitude scores for each disclosure target. While no predictions were made for mean score differences, our resulting t values provide some further descriptive information supporting our hypothesis testing (see Table 10).

*H2: Disclosure to Close Friends.* Total scores from the 171 participants who completed our measure of affective attitudes ( $X$ ;  $M=2.49$ ,  $SD=6.80$ ) and cognitive attitudes ( $Y$ ;  $M=2.75$ ,  $SD=8.80$ ) toward disclosure to close friends ( $Z$ ; *Mean close friends disclosure rate = 60%*,  $SD = 43%$ ) were analyzed. The Pearson correlation between affective attitudes and disclosure to family members was .34 ( $p<.01$ ). The correlation between cognitive attitudes and disclosure to family members was .40 ( $p<.01$ ). Transformation of these correlations to z-scores via Fisher's  $r$ -to- $z$  formula ( $r_{xz}$  to  $Z=.35$  and  $r_{yz}$  to  $Z=.42$ ) were then used in Steiger's  $Z$ -test. The resulting  $Z$  score is then referenced to a standard normal probability table and tested against the 95% cutoff criterion (1.96) to test for statistical significance. We predicted that affective attitudes would be more strongly associated with disclosure to close friends than cognitive attitudes, however, our resulting  $Z$ -score did not exceed the necessary cutoff criteria (1.96), Steiger's  $Z = .11$ ,  $p>.05$ . The results suggest no differential association between affective and cognitive attitudes toward disclosure to close friends and actual disclosure (see Table 9).

*H3: Disclosure to Main Partners.* One hundred thirty participants self-reported having a main partner to whom they had or had not disclosed. Overall, the highest percentages of disclosure were found to this target group (i.e., 85% of participants had disclosed to their main

partners). Affective attitude scores ( $X$ ;  $M=4.87$ ,  $SD=6.16$ ) and cognitive attitude scores ( $Y$ ;  $M=7.36$ ,  $SD=4.34$ ) were correlated with their corresponding disclosure scores ( $Z$ ; i.e., 0 or 1). The resulting point-biserial correlation between affective attitudes and disclosure to main partner ( $r_{xz}=.12$ ,  $p>.05$ ) was tested against the point-biserial correlation between cognitive attitudes and disclosure to main partners ( $r_{yz}=.17$ ,  $p<.05$ ). These correlations were transformed via Fisher's  $r$ -to  $z$  transformation ( $r_{xz}$  to  $Z=.12$  and  $r_{yz}$  to  $Z=.18$ ). The resulting Steiger  $Z$  score ( $Z=.65$ ) did not exceed the cutoff criterion and thus we failed to reject the null hypothesis (see Table 9). Specifically, we hypothesized a greater relationship between disclosure to main partners and affective attitudes than between disclosure and cognitive attitudes; however, our results suggest there may be no difference between these two correlations.

*H4: Disclosure to Family Members.* Total scores from the 185 participants who completed our measure of affective attitudes ( $X$ ;  $M=2.29$ ,  $SD=6.03$ ) and cognitive attitudes ( $Y$ ;  $M=4.67$ ,  $SD=5.74$ ) toward disclosure to family members ( $Z$ ; *Family member disclosure rate* = 56%,  $SD = 42\%$ ) were analyzed. The correlation between affective attitudes and disclosure percentages to family member was .28 ( $p<.01$ ). The correlation between cognitive attitudes and disclosure to family members was .56 ( $p<.01$ ). Transformation of these correlations to  $z$ -scores via Fisher's  $r$ -to- $z$  formula ( $r_{xz}$  to  $Z=.28$  and  $r_{yz}$  to  $Z=.63$ ) were used to test the hypothesis that cognitive attitudes would be more strongly associated with disclosure to family members than affective attitudes. As predicted, we found a stronger association between cognitive attitudes and disclosure than for affective attitudes and disclosure: Steiger's  $Z = 3.73$ ,  $p<.05$ , 95% CI [3.58, 3.88]; see Table 9.

*H5: Disclosure To Casual Sex Partners.* Ninety-five participants self-reported having casual sex since being diagnosed with HIV, yielding a mean disclosure percentage of 61%

( $SD=44\%$ ). Their corresponding disclosure rate ( $Z$ ) was correlated with affective attitude ( $X$ ;  $M=.81$ ,  $SD=6.6$ ) and cognitive attitude scores ( $Y$ ;  $M=3.34$ ,  $SD=6.40$ ). The correlation between affective attitude scores and disclosure to casual sex partners was  $.34$  ( $p<.01$ ). The correlation between affective attitudes and disclosure was  $.59$  ( $p<.01$ ). After transforming the corresponding correlations to  $Z$  scores ( $r_{xz}$  to  $Z=.35$ ,  $r_{yz}$  to  $Z=.67$ ), Steiger's  $Z$ -test detected a statistically significant difference: Steiger's  $Z = 2.38$ ,  $p<.05$ , 95% CI [2.17, 2.60]. As predicted, cognitive attitudes were more strongly associated with disclosure to casual sex partners than affective attitudes (see Table 9).

## Discussion

### *4.1 Culture and the Theory of Reasoned Action*

The first aim of the study was to examine the effect that culture may have on the predictive power of the Theory of Reasoned Action (TRA). We expected a moderating effect of acculturation to the U.S. to determine which component in the TRA model (i.e., attitudes or norms) was preferentially used in guiding disclosure behaviors amongst HIV+ individuals. Others have also attempted to demonstrate the way in which culture affects attitudes and norms toward eating behaviors with minority groups and foreigners (Bagozzi, Wong, Abe, & Bergami, 2000) and intention to use condoms among a Latino sample (Lechuga, & Wiebe, 2009). Our regression models suggest that acculturation to the U.S. does not moderate the components in the TRA and the subsequent ability to predict disclosure rates. Therefore, we failed to find a significant three-way interaction between acculturation, attitudes and norms for disclosure. However, attitudes and norms as main effects entered in the first step were statistically significant in predicting disclosure levels. Although there were statistical limitations due the range of scores found on our attitude measure (see limitations section), our findings suggest that attitudes toward disclosure do predict the level of disclosure. However, the demographic make-up of our sample did not meet our expectations (i.e. more self-identified gay men were expected to enroll) and our estimated statistical power being significantly attenuated may have contributed to our null finding.

Despite our non-significant effect we feel the further testing of disclosure models to be warranted. On average, our participants had disclosed to little over half of their immediate family members (55%), while slightly higher percentages of disclosure were found for participants' close friends (60%). When compared on the average number of years living with

HIV to our sample of participants ( $M=10.44$  yrs), Serovich, Esben, and Mason (2005 & 2007) found higher percentages of disclosure to immediate family members, ranging from 60-82%, and even higher levels of disclosure to “longest” friends (~86%) than our sample reported. While a majority of the patients in the aforementioned study self-identified as Caucasian, these findings are consistent with those from a seminal study by Marks et al. (1995) which that found significantly lower disclosure percentages among Latino men when compared to White men. Of even greater concern is our finding that participants disclosed to only 61% of all casual sex partners prior to engaging in a sexual relationship, while 85% of our participants' main partners were aware of their diagnosis. Our disclosure percentages to main partners is comparable to those reported by Latino men in the study by Marks et al. (1995) but less than the rates reported by White men (96.4%). Zea et al. (2007) found that on average Latino men had disclosed to about half or fewer of their casual partners, with similar findings reported by Hart et al. (2005; range 26% to 84% with a mean of 41%). Our findings suggest that our sample of participants may have higher percentages of disclosure to casual sex partners but lower rates for every other group than what has been previously reported. However, we feel it necessary to issue a caveat with regards to interpreting disclosure rates from our sample and comparing to rates previously reported in other studies. Aside from matching on the number of years living with HIV, our sample was not matched on sociodemographic or other relevant variables that might influence disclosure percentages. While the general pattern of disclosure appears consistent with what has been published previously, any further interpretations should proceed with caution.

Empirical evidence suggests that greater HIV disclosure is associated with overall psychological well-being (Simoni et al., 2000; Zea, Reisen, Poppen, Bianchi, & Echeverry, 2005). As suggested by Strachan et al. (2007), examining the strongest predictors of disclosure

may have implications for intervention strategies encouraging those who are HIV+ to disclose to people in their network who may provide instrumental or emotional support. In line with the aim of predicting the likelihood for one to engage in disclosure behaviors, the Theory of Reasoned Action provided one way to do so (Albarracin, Johnson, Fishbein, & Muellerleile, 2001). Over the years, the TRA has amassed strong support to demonstrate its ability to predict behavioral intent from attitudes and perceived norms (Albarracin et al., 2001; Azjen, 1991). Surprisingly, almost no research has examined the role of attitudes in the disclosure process. Up to this point, research on disclosure of HIV status has focused on the “reasons for disclosure,” which are conceptually different from attitudes (i.e., evaluations of a behavior) toward disclosure (Derlega et al., 2004; Mason et al., 1995; Sherman & Fazio, 1983).

Several meta-analyses have found medium to large associations between attitudes and behaviors in both applied and laboratory settings, and thus it seems likely that attitudes would play a role in the disclosure process (Albarracin et al., 2001 & 2006). In addition to the use of attitudes as a predictor, we also evaluated the influence of descriptive norms on disclosure. Zea et al. (2007) found individuals who perceived disclosure to be more pervasive among other Latinos (salient high norms) were more likely to have disclosed their HIV status. There is evidence to suggest that descriptive norms (i.e., what one thinks most people do) are an efficient heuristic that usually result in an adaptive behavioral response (Cialdini, Kallgreen, & Reno, 1991). Although our predicted interaction between norms and acculturation was non-significant, Kallgreen, Reno, & Cialdini (2009) suggest that the effectiveness of norms depends on the saliency of those norms, which may have implications for the way participants responded to the items in the norm scale.

Aside from disclosure research, descriptive norms have been predictive of intent to consume alcohol (Rimal, 2008), reduce littering behaviors (Kallgreen, Reno, & Cialdini, 2000) and increased cancer screening behaviors (Smith-McLallen, & Fishbein, 2008). In a similar vein, others have found that those who subscribe to Latino cultural values such as *familismo* (i.e., maintaining harmony within the family) may be less likely to disclose for the sake of keeping the family dynamic stable (Mason et al., 1995; Zea, et al., 2004;). Conceptually individuals who subscribe to traditional cultural values (e.g., *familismo*, *machismo*) may then be considered as following group norms that thus inhibit disclosure. If this is the case, then acculturation may also interact with group norms and attitudes toward disclosure. Theoretically, higher levels of acculturation have been predicted to be associated with greater disclosure (Derlega et al., 2004; Mason et al., 1995; Mutchler et al., 2008; Zea et al., 2004, 2005 & 2007). However, our findings, as well as those reported by Zea et al. (2007), failed to find a main effect for acculturation or an interaction with attitudes and norms (see Table 7 . In the previous studies that have found significant relationships between acculturation and disclosure (Marks et al., 1995), as well as other health behaviors and risks (Newcomb et al., 1998; Rojas-Guyler, Ellis, & Sanders, 2005), single-item or shorter proxy measures have been used (e.g., language preference, income, generational status). As discussed in previous sections, we conceptualized acculturation in a bidimensional manner. Therefore, we utilized a bidimensional scale that gauges a comprehensive level of acculturation through the integration of both cultures (i.e., mainstream and native), through subscales of language, cultural competence, and values (Berry, 1990; Zea et al., 2003).

Despite this attempt to measure acculturation in a thorough way, we failed to find any effect on disclosure. Others have also noted mixed findings between unidimensional and

bidimensional approaches in predicting behavior (Torres and Rollock, 2007). One explanation for this may be the unique homogeneity of Latinos that reside on the U.S.-Mexico Border. Being that Latinos are numerically a majority group makes it less likely that acculturated minorities would experience the same amount of acculturative stress as in other more diverse settings. The cultural difference between a *traditional Latino* and a *mainstream Latino* on the U.S.-Mexico Border may not be as obvious as for a recently immigrated Latino into a predominately non-Hispanic white community. Therefore, future assessments of acculturation may need to explore other mechanisms that uniquely impact national minority groups living in cities where they are the majority.

#### *4.2 Affective And Cognitive Attitudes As “Reasons” for Disclosure*

The second aim of the study was to categorize reasons for disclosure as either cognitively driven attitudes (e.g., responsibility to disclose) or affectively driven attitudes (e.g., catharsis/seeking help) and test for the difference between these two attitudinal components and the association with disclosure to specific targets. Data suggest that the disclosure decision-making process is essentially a cost-benefit analysis, yet what comprises the “rewards” and “consequences” is still undetermined (Serovich, 2001). In line with this suggestion, research has categorized reasons for disclosure as either self-focused (e.g., catharsis) or other-focused (e.g., desire to educate family) and demonstrated that the reasons one chooses to disclose (i.e., rewards and consequences) vary depending on the disclosure target (Derlega, Winston, & Folk-Barron, 2000; Derlega et al., 2004; Mason et al., 1995). That is, being in a close supportive relationship would make it more likely that one would disclose one's HIV status as a way to relieve emotion and/or feel a duty to educate a partner (Derlega et al., 2004). Separately, others have demonstrated that disclosure of HIV status to casual sex partners may occur specifically for the

reason of having a responsibility to inform others before having sexual relationships (Zea et al., 2007). While there is evidence to suggest that some reasons for disclosure are reported to be more important than others, we attempted to test this idea in the form of an individual evaluative process (i.e., one's attitude) that may be a more stable guide in directing behavior than reasons for disclosure (Fazio, 2007). Support for this approach is provided by a meta-analysis by Glasman and Albarracin (2006), which found the highest correlation between attitudes and subsequent behavior when matched on either the affective or cognitive dimensions. The present study aimed to test whether these “rewards and consequences” of disclosure could be categorized as affective or cognitive attitudes, and thus shed light on which of the expected consequences, “release of emotion” or “peace of mind,” would be more strongly associated with disclosure to specific people.

Across the four sets of correlations, each disclosure target was associated with higher levels of cognitive attitudes than with affective attitudes. When tested to evaluate whether these differences were statistically significant, we found support for two of our four hypotheses. We failed to find support for our prediction that affective attitudes (comforting-humiliating, stressful-relieving) would be more strongly associated with disclosure to close friends than cognitive attitudes (wise-foolish, safe-harmful). In our remaining hypotheses, we expected a stronger relationship between disclosure to main partners, family members, and casual sex partners with cognitive attitudes than with affective attitudes. As predicted, significant differences between the two correlations were found for family members and casual sex partners, but not main partners (see Table 8). In the context of a cost-benefit analysis for disclosure to family members and casual sex partners, HIV+ individuals may evaluate their decision to disclose primarily based on cognitive reasons (i.e. protecting others, desire to educate, responsibility to tell and the right

thing to do) rather than emotional reason (i.e. social support, catharsis, being in a close relationship; Bairan et al., 2007). For correlations between our attitudinal dimensions and disclosure to main partners and close friends, no statistically significant differences were found. However, the evidence may counter other research findings that suggest being in a close supportive stable relationship with a main partner or a close friend is more strongly associated with the affectively driven “reasons” for disclosure (Derlega et al., 2004; Poppen et al., 2005). Our data suggest that HIV+ individuals may actually disclose based on both a sense of emotional intimacy as well as a felt duty to tell a significant other or close friend.

#### *4.3 Limitations.*

Three issues may have contributed to the lack of statistical power needed to detect our three-way interaction. First, because recruitment for the larger study began in October of 2009, before this thesis had been proposed, the first 55 completed surveys were missing attitudes scales. Ensuring adequate translation for development and proper translation of the attitudes scale meant that it was not introduced until January 2010. Therefore, for no systematic reasons related to the variables of interest (Rubin, 1976), the first 55 participants who completed the survey were missing the attitude measure. Second, we expected a larger proportion of gay men to participate in our study. Our sample comprised 73.1% individuals who self-identified as not heterosexual, where we expected approximately 85% based on previous data collection at the same clinic. Thirdly, a surprisingly large percentage of participants were female (19.4%), whereas the participants of interest were solely gay men. Our estimated sample size of 200 was reduced to nearly half of what was needed ( $n=107$ ) to detect our interaction if it did indeed exist.

A review of the distribution of attitude scores suggests that participants tended to respond using the most extreme end points. The attitude scale was comprised of 24-items that involved a

7-point semantic difference response format. That is, anchors ranged from -3 (e.g., Foolish) to +3 (e.g., Wise) with a neutral or ambivalent attitude indicated by selection of a middle point (e.g., score of 0). In each of our 8 subscales, a majority of respondents used extreme ends of the scale (i.e., -3 or +3). For example, our scale of cognitive attitudes toward disclosure to main partners comprises three semantic differential items (i.e., disclosing would be...wise-foolish, inappropriate-appropriate, harmful-safe). Eighty-two percent of participants responded by selecting the most extreme anchor, resulting in a total score of either 9 (i.e., indicating the highest score on the cognitive attitude scale) or -9 (indicating the lowest score on the cognitive attitude scale). This resulted in a reduction in variance that is necessary to detect a three-way interaction (Dawson & Richter, 2006). Others have commented on the use of semantic differential question formats in lower educated samples, or with those that are unfamiliar with survey responding (Krosnick et al, 2005; Sekaquaptewa, Vargas, & von Hippel, 2010). While the level of education was not collected, a proxy estimate of education via household income was collected. In our sample of 247 HIV+ individuals, the median annual household income was less than \$10,000. Therefore, it may be that the socioeconomic status of our sample of participants was associated with lower education, and thus made our semantic differential scale less than appropriate for this population. Another issue is that our participants may have never before responded to survey items designed in this format, or have never been asked to respond to abstract questions that required them to evaluate the contrasting anchors (e.g., humiliating or comforting). We expected this to be a potential risk prior to administration of the survey and attempted to alleviate this by having all instructions and one example read to the participants. However, participants might have failed to grasp the concept of freely choosing any one of the

seven points in between the anchors, or truly felt that only the ends of the scale represented their attitudes accurately.

A caveat should also be issued with regards to differences found between attitude and disclosure correlations. Our results suggest that across all targets cognitive attitudes were more strongly associated with disclosure than were affective attitudes. However, our cognitive attitude scale may simply have captured disclosure evaluations more accurately than our affective attitude scale. If this is the case, then our correlational differences may be an artifact of the scale properties. We should also note that we did find general patterns of significant differences for mean scores across attitude by disclosure target (See Table 10). For each target except for close friends, cognitive attitudes were rated higher than affective attitude scores (i.e., indicating a more positive attitude). Also, within the four sets of correlations between attitudes and disclosure, we found the highest correlation between cognitive attitudes and disclosure to casual sex partners. This finding was in line with our hypothesis. Specifically, we expected evaluations toward casual sex partners to be the most cognitively driven.

We were also limited by not quantifying the differences in closeness between disclosure targets. A measure of closeness (i.e., how close a relationship each target has with the participant) would allow us to fully explore the relationship between attitudes and disclosure, as well as differences in magnitude due to relationship closeness. Future research on disclosure should look to evaluate the qualitative differences in relationships between the discloser and the disclosure target.

We were also limited by the *norms for disclosure* scale. Our data yielded low reliability ( $\alpha=.59$ ) compared to what the original published study reported ( $\alpha=.74$ ; Zea et al., 2007). Dawson and Richter (2006) demonstrated that the relative power to detect a three-way

interaction is affected by reliability of measurement. Also, despite the fact that others have used a similar composite score from the four-item measure of norms (Zea et al., 2007), composite scoring of these four items may not be a best estimate of norms. For example, each of the item stems were identical (How many HIV+ Latino men do you think disclose their HIV status to their...) but were anchored by different disclosure targets (e.g., family members, casual sex partners). In some cases, it might be reasonable to expect norms for family members to be low, but disclosure norms for casual sex partners to be high; thus internal consistency would be attenuated by differential responding based on the disclosure target in question. For future purposes it may be more viable to create more items based on one specific disclosure target (e.g., multiple items assessing norms for disclosing to casual sex partners) or treat each item as a single index of norms for disclosure (see footnote in Table 7). However, there are potential advantages and disadvantages to both strategies, one being that a scale would need to be increased in length to cancel error variance and improve reliability, and the other being that single-item proxy measures cannot be tested for internal reliability.

With regards to our measure of acculturation, our mean scores were similar to those found in the original study's community sample (Zea et al., 2003). Our acculturation results did not have any significant correlation with our attitudes and norm for disclosure variables as well. It seems likely that biased responses in our attitude measure, and low reliability in our norms measure may have contributed to these null relationships more so than scores on our scale of acculturation.

#### *4.4 Conclusion*

Overall, our study made several contributions to the literature on HIV disclosure. First, disclosure levels were able to be predicted from attitudes and norms for disclosure. Second, we

reconceptualized the reasons why HIV+ individuals choose to disclose and mapped them onto an evaluative process (i.e. dimensions of attitudes). Contrary to other research findings, across all disclosure targets we found cognitive attitudes to be more strongly associated with disclosure than affective attitudes. This is the first study to our knowledge that attempted to test for differences between the emotional and cognitive qualities in the decision-making process. These findings may also have implications for future research on the cost-benefit analysis model of disclosure. That is, appraising rewards for disclosure may be conceptualized as being more emotionally driven for some people, and for others rewards might include the cognitive consonance of achieved by letting someone know their HIV status. Third, we found support for the latter for disclosure to family members and casual sex partners. Our results may have public health implications as well. Disclosure is seen as one of the most effective methods of preventing the transmission of HIV. In gay male populations, where the frequency of casual sex is higher than in the general public, disclosing to new partners is one of the surest ways to prevent the spread of HIV and other sexually transmitted infections. We hope that our study provides some evidence for those interested in further investigating the way disclosure can be guided by emotion and cognitions, and future inventions take into account these findings.

Finally, while others have theorized acculturation to influence the frequency and reasons for disclosure, we failed to find support for this effect. The U.S.-Mexico Border has a unique demographic makeup that enables us to test and contrast research findings on a host of health-related variables. The findings that are reported from research with minority groups in other parts of the country may not always replicate in our unique setting where our national minority group is in fact the majority. Further exploration for the way this unique setting influences acculturation, attitudes and group norms is needed.

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TABLES AND FIGURES

Table 1.  
*Sample Characteristics (N=247)*

<b>Demographics</b>	Mean (SD)	%
Age (Years)	46.4 (10.1)	
Years living with HIV	10.4 (7.1)	
Gender		
Male		79.0 %
Female		19.4 %
Transgender Male to Female		1.2 %
Transgender Female to Male		0.4 %
Employment Status		
Full-time		12.1 %
Part-time		11.7 %
Odd jobs		16.2 %
Not currently working		59.9 %
Sexual Orientation		
Heterosexual only		37.1 %
Heterosexual mostly		4.9 %
Heterosexual somewhat more		2.9 %
Heterosexual/Gay Lesbian equally		9.8 %
Gay/Lesbian somewhat more		2.9 %
Gay/Lesbian mostly		5.3 %
Gay/Lesbian only		37.1 %

Table 2.  
*Sample Characteristics Across Language*

<b>Demographics</b>	English ( <i>n</i> =118)		Spanish ( <i>n</i> =129)	
	Mean ( <i>SD</i> )	%	Mean ( <i>SD</i> )	%
Age (Years)	45.9 (9.9)		46.8 (10.3)	
Years living with HIV	11.7 (7.8)		9.4 (6.2)	
Gender				
Male		79.7		78.8
Female		18.6		20.2
Transgender Male to Female		0.8		1.6
Transgender Female to Male		0.8		0
Employment Status				
Full-time		8.5		15.5
Part-time		13.6		10.1
Odd jobs		13.6		18.6
Not currently working		64.4		55.8
Sexual Orientation				
Heterosexual only		32.5		41.4
Heterosexual mostly		4.3		5.5
Heterosexual somewhat more		3.4		2.3
Heterosexual/Gay Lesbian equally		12.0		7.8
Gay/Lesbian somewhat more		2.6		3.1
Gay/Lesbian mostly		6.8		3.9
Gay/Lesbian only		38.5		35.9

Table 3.  
*Internal Consistency Reliability*

Scale Name	Cronbach's Alpha
Total Attitudes Toward Disclosure (24 items)	.89
-Cognitive Attitudes Subscale (12 items)	.81
-Affective Attitudes Subscale (12 items)	.86
Norms For Disclosure (8 items)	.79
-Latino Subscale (4 items)	.59
-Non-Latino Subscale (4 items)	.81
Acculturation to the U.S (21 items)	.97

Table 4.

*Percent of Disclosure to Applicable Targets in Total Sample*

Disclosure Target	Average Percent of Disclosure	Average # of Targets Disclosed to / Average # of Available Targets
	% ( <i>SD</i> )	M ( <i>SD</i> ) / M ( <i>SD</i> )
1. Main Partner	85 (35)	0.8 (1.3) / 1.3 <sup>a</sup> (1.3)
2. Mother	64 (48)	0.7 (.43) / 1 <sup>a</sup>
3. Father	43 (50)	0.6 (.49) / 1 <sup>a</sup>
4. Brother	54 (47)	1.3 (1.8) / 2.4 (2.1)
5. Sister	60 (46)	1.4 (1.9) / 2.5 (2.0)
6. Children	44 (46)	2.89 (1.9) / 1.1 (1.8)
7. Aunt	26 (42)	1.1(3.3) / 4.1 (5.2)
8. Uncle	20 (37)	5.9 (3.7) / 1.3 (4.2)
9. Cousins	18 (36)	3.23 (9.2) / 21.2 (25.1)
10. Close Friends	62 (43)	4.1 (7.0) / 6.7 (8.0)
11. Casual Sex Partners	64 (42)	2.5 (9.2) / 5.0 (15.7)
Total (11 targets)	35 (31)	12.9 (22.3) / 46.9 (31.9)

*Note:* Average percent of disclosure was calculated by summing the number of applicable targets to whom the participant disclosed and dividing by the number of all applicable targets.

<sup>a</sup> Participants may have reported more than one main partner. For mothers and fathers, participants only self-reported having one each.

Table 5.  
*Percent of Disclosure to Applicable Targets by Language*

Disclosure Target	English		Spanish	
	Average percent of disclosure	Mean # of Targets Disclosed to / Mean # of Available Targets	Average percent of disclosure	Mean # of Targets Disclosed to / Mean # of Available Targets
	% (SD)	M(SD) / M (SD)	% (SD)	M (SD) / M (SD)
12. Main Partner	86 (34)	1.4 (1.9) / 1.5 (1.9)	84 (40)	0.9 (0.6) / 1.1 (0.4)
13. Mother	76 (43)	0.7 (0.4) / 1	53 (50)	0.5 (0.5) / 1
14. Father	51 (50)	0.5 (0.5) / 1	35 (48)	0.4 (0.4) / 1
15. Brother	56 (47)	2.3 (2.1) / 1.2 (1.9)	52 (47)	1.2 (1.7) / 2.6 (2.1)
16. Sister	67 (44)	1.5 (1.7) / 2.3 (2.1)	54 (47)	1.4 (1.9) / 2.6 (2.0)
17. Children	52 (48)	1.9 (2.7) / 2.9 (2.4)	38 (45)	1.4 (1.4) / 2.8 (1.4)
18. Aunt	35 (35)	1.9 (4.4) / 5.6 (6.6)	19 (37)	0.9 (2.5) / 4.68 (3.9)
19. Uncle	25 (41)	1.4 (4.8) / 4.5 (6.1)	15 (33)	0.5 (2.2) / 4.1 (5.3)
20. Cousins	27 (38)	4.5 (10) / 23.9 (32.3)	11 (27)	2.1 (7.3) / 20.2 (16)
21. Close Friends	66 (42)	5 (8.2) / 7.8 (9.4)	58 (44)	4.1 (10.2) / 7.2 (12.5)
22. Casual Sex Partners	79 (32)	4.1 (11.9) / 6.9 (19.5)	48 (46)	1 (4.6) / 3.2 (10.9)
Total (11 targets)	42 (32)	20.1 (26.8) / 51.5(44.2)	28 (27)	12.9 (22.8) / 46.9 (31.9)

*Note:* Average percent of disclosure was calculated by summing the number of applicable targets to whom the participant disclosed and dividing by the number of all applicable targets.<sup>a</sup> Participants may have reported more than one main partner. For mothers and fathers, participants only self-reported having one each.

Table 6.

*Independent Samples t-test for Means Across Demographic and Predictor Variables*

	<u>Language</u>		<i>t</i>
	<b>English</b> Mean ( <i>SD</i> )	<b>Spanish</b> Mean ( <i>SD</i> )	
Age	43.5 (12.5)	44.5 (9.8)	.44
Years Living with HIV	8.4 (6.1)	8.8 (6.7)	.32
Total Disclosure %	35 (29)	25 (25)	1.97
Immediate Family Member Disclosure %	65 (36)	47 (43)	2.23*
Acculturation To The U.S. Subscale	76.8 (7.7)	55.0 (15.6)	7.88**
Acculturation To Culture of Origin Subscale	64.4 (13.8)	71.5 (11.6)	-2.74**
Total Attitudes (Cognitive and Affective Collapsed)	37 (23.9)	30.3 (31.3)	1.15
Affective Attitudes Subscale	12.1 (16.7)	13.7 (17.2)	-.48
Cognitive Attitudes Subscale	24.8 (10.9)	16.5 (16.1)	2.86**
Latino Norms Subscale	10.5 (3.8)	10.2 (3.6)	.42
Non-Latino Norms Subscale	12.0 (5.9)	12.0 (4.8)	0.00

*Note:* \*  $p < .05$ , \*\*  $p < .01$

Table 7.  
*Moderated Multiple Regression for Predicting Disclosure*

	$\beta$	SE $\beta$	<i>t</i>	<i>p</i>
Step 1				
Constant	.54	.03		
Attitudes	.13	.03	.13	.000
Norms <sup>b</sup>	.07	.04	.07	.004
Acculturation	.01	.03	.01	.66
Step 2				
Constant	.53	.03		
Attitudes	.12	.03	3.6	.001
Norms	.05	.04	1.4	.16
Acculturation	.02	.03	.68	.50
Attitudes X Norms	-.03	.03	-.94	.35
Attitudes X Acculturation	.04	.04	1.1	.28
Norms X Acculturation	.07	.04	1.9	.07
Step 3				
Constant	.52	.03		
Attitudes	.11	.03	3.3	.002
Norms	.06	.04	1.6	.10
Acculturation	.03	.03	.41	.41
Attitudes X Norms	-.04	.03	-1.2	.24
Attitudes X Acculturation	.06	.04	1.5	.14
Norms X Acculturation	.07	.04	1.8	.07
Attitudes X Norms X Acculturation	.06	.04	1.4	.18

*Note:*  $R^2 = .15, p < .001$  for Step 1;  $\Delta R^2 = .04, p = .20$  for Step 2;  $\Delta R^2 = .02, p = .19$  for Step 3. All variables were standardized prior to calculating interaction terms. An overall attitudes score was calculated by collapsing across affective and cognitive attitude subscales. Norms in the regression model refer to the 4-item perceived Latino norms subscale. We calculated an overall disclosure ratio using targets that match our attitude objects (i.e. main partners, immediate family members, close friends, and casual sex partners).

<sup>b</sup>The norms variable was a composite score of four items assessing perceived norms for disclosure amongst other Latinos. We also ran a post-hoc regression to test whether an eight-item norm scale (Latino and Non-Latino items collapsed) would produce an interaction with acculturation, as well as a three-way interaction with each predictor variable. This regression analysis with the full norms scale yielded a smaller adjusted  $R^2$  (.12) and non-significant regression weights for the two and three-way interactions.

Table 8.

*Correlations Among Predictor Variables Used in Moderated Multiple Regression Analysis.*

<b>Variable Name</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
1. Attitudes Toward Disclosure		-.05	.01	.33**
2. Norms For Disclosure			.15	.08
3. Acculturation to the U.S.				.07
4. Disclosure (DV)				

*Note: \* $p < .05$ , \*\* $p < .01$*

Table 9.

*Correlations Between Disclosure Attitudes and Disclosure to Four Targets and Test Statistics for the Difference Between Two Correlations.*

	Main Partner  ( <i>n</i> =130)	Family Member  ( <i>n</i> =185)	Close Friends  ( <i>n</i> =171)	Casual Sex Partners  ( <i>n</i> =95)
Cognitive Attitudes Towards Disclosing to...	.17**	.56**	.40**	.59**
Affective Attitudes Towards Disclosing to...	.12	.28**	.34**	.34**
Steiger's Z-Statistic	.65	3.73**	.11	2.38*

Note: Our list of targets (e.g. brother, casual sex partners) was not applicable to all participants and therefore each target yielded a different sample size for analysis. Cognitive and affective attitudes were correlated with the ratio of disclosure to each of the listed targets. A point-biserial correlation was calculated for attitudes and disclosure to main partners (measured dichotomously). The remaining three targets utilized Pearson correlations. Each resulting pair of correlations was subjected to Steiger's Z-test formula, producing a Z-statistic which indicates significant differences when it exceeds the 95% Z-critical value (1.96). See Figure 1 for a working definition of Steiger's Z-test for dependent correlations.

Table 10.

*Paired-Samples t-test for Mean Differences across Attitudes Scores by Target*

<b>Attitudes Toward Disclosure to...</b>	<b>Cognitive Mean Score (SD) Affective Mean Score (SD)</b>	<b>df</b>	<b>t</b>
Family Members	4.67 (5.74) 2.29 (6.03)	184	5.36***
Close Friends	2.75 (8.80) 2.49 (6.80)	170	.52, <i>n.s</i>
Main Partners	7.36 (4.34) 4.87 (6.16)	130	4.62***
<b>Casual Sex Partners</b>	<b>3.34 (6.4) .81 (6.6)</b>	<b>94</b>	<b>3.74***</b>

*Note: \*\*\*p<.001*

Table 11.

*Correlations Between All Attitude Subscales in the Attitudes Toward Disclosure Measure*

Variable Name	Total Affective Attitudes	Affective Attitudes (MP)	Affective Attitudes (FAM)	Affective Attitudes (FRI)	Affective Attitudes (CSP)
Total Cognitive Attitudes	.64**				
Cognitive Attitudes (MP)		.50**			
Cognitive Attitudes (FAM)			.51**		
Cognitive Attitudes (FRI)				.64**	
Cognitive Attitudes (CSP)					.27*

*Note:* \* $p < .05$ , \*\* $p < .01$ . MP = Main Partner, FAM = Family, FRI = Friends, CSP = Casual Sex Partners. Attitudes Toward Disclosure comprises all 24 scale items. Total Cognitive and Affective Attitudes subscales comprise 12 scale items each. Each attitude-object (i.e. MP, FAM, FRI, and CSP) comprises 3 Cognitive Attitude items and 3 Affective Attitude items.

Figure 1.

*Steiger's Z-test Formula for Significance Testing Between Dependent Correlations*

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$$Z = Z_{12} - Z_{13} \times \frac{\sqrt{N-3}}{\sqrt{2} \times [1 - r_{23}] \times h}$$

$$\text{Where } h = \frac{1 - [f \times rm^2]}{1 - rm^2}; f = \frac{1 - r_{12}}{2 \times [1 - rm^2]}; rm^2 = \frac{r_{12}^2 + r_{13}^2}{2}$$

---

*Note.*  $Z_{12}$  and  $Z_{13}$  are Fisher's Z transformations of  $r_{12}$  and  $r_{13}$ ; (h) is a mathematical constant (Steiger, 1980).

APPENDICES

Appendix A

**Attitudes Toward Disclosure Scale**

Instructions: There are a lot of reasons why people **DO NOT** or **DO** decide to disclose their HIV status. I would like to ask about your attitude toward disclosing to four specific types of people. Think about how your attitude toward disclosing your HIV status may be **Different** or the **Same** for **Each** person. I am going to show you two options and then you mark a specific point between those two that best describes your attitude.

1A. I think disclosing my HIV status to my **family members** would be:

Wise: \_\_\_\_\_: Foolish

Appropriate: \_\_\_\_\_: Inappropriate

Safe: \_\_\_\_\_: Harmful

1B. Disclosing my HIV status to my **family members** would feel:

Humiliating: \_\_\_\_\_: Comforting

Relieving: \_\_\_\_\_: Stressful

Satisfying: \_\_\_\_\_: Frustrating

2A. I think disclosing my HIV status to my **close friends** would be:

Wise: \_\_\_\_\_: Foolish

Appropriate: \_\_\_\_\_: Inappropriate

Safe: \_\_\_\_\_: Harmful

2B. Disclosing my HIV status to my **close friends** would feel

Humiliating: \_\_\_\_\_: Comforting

Relieving: \_\_\_\_\_: Stressful

Satisfying: \_\_\_\_\_: Frustrating

3A. I think disclosing my HIV status to my **main partner** would be:

Wise: \_\_\_\_\_: Foolish

Appropriate: \_\_\_\_\_: Inappropriate

Safe: \_\_\_\_\_: Harmful

3B. Disclosing my HIV status to my **main partner** would feel:

Humiliating: \_\_\_\_\_: Comforting

Relieving: \_\_\_\_\_: Stressful

Satisfying: \_\_\_\_\_: Frustrating

4A. I think disclosing my HIV status to a **casual sex partner** would be:

Wise: \_\_\_\_\_: Foolish

Appropriate: \_\_\_\_\_: Inappropriate

Safe: \_\_\_\_\_: Harmful

4B. Disclosing my HIV status to a **casual sex partner** would feel:

Humiliating: \_\_\_\_\_: Comforting

Relieving: \_\_\_\_\_: Stressful

Satisfying: \_\_\_\_\_: Frustrating

Appendix B  
**Attitudes Toward Disclosure Scale (Spanish Version)**

Instrucciones: Hay varias razones por las cuales las personas **DECIDEN** o **NO DECIDEN** revelar su estado de VIH. Me gustaría preguntarle acerca de su actitud hacia la divulgación de su estado de VIH a cuatro tipos de personas. Piense en cómo su actitud hacia la revelación de su estado de VIH puede ser **DIFERENTE** o **IGUAL** para **CADA** persona. Voy a mostrarle dos opciones y pedirle que marque un punto específico entre las dos opciones que mejor describe su actitud.

1A. Creo que revelar mi estado de VIH a los **miembros de mi familia** sería:

Algo sabio: \_\_\_\_:Algo ingenuo

Apropiado: \_\_\_\_:Inapropiado

Seguro: \_\_\_\_:Dañino

1B. Revelar mi estado de VIH a los **miembros de mi familia** se sentiría:

Humillante: \_\_\_\_:Reconfortante

Como un alivio: \_\_\_\_:Estresante

Como una satisfacción: \_\_\_\_:Frustrante

2A. Creo que revelar mi estado de VIH a mis **amigos más cercanos** sería:

Algo sabio: \_\_\_\_:Algo ingenuo

Apropiado: \_\_\_\_:Inapropiado

Seguro: \_\_\_\_:Dañino

2B. Revelar mi estado de VIH a mis **amigos más cercanos** se sentiría:

Humillante: \_\_\_\_:Reconfortante

Como un alivio: \_\_\_\_:Estresante

Como una satisfacción: \_\_\_\_:Frustrante

3A. Creo que revelar mi estado de VIH a mi **pareja principal** sería:

Algo sabio: \_\_\_\_:Algo ingenuo

Apropiado: \_\_\_\_:Inapropiado

Seguro: \_\_\_\_:Dañino

3B. Revelar mi estado de VIH a mi **pareja principal** se sentiría:

Humillante: \_\_\_\_\_:Reconfortante

Como un alivio: \_\_\_\_\_:Estresante

Como una satisfacción: \_\_\_\_\_:Frustrante

4A. Creo que revelar mi estado de VIH a una **pareja sexual ocasional** sería:

Algo sabio: \_\_\_\_\_:Algo ingenuo

Apropiado: \_\_\_\_\_:Inapropiado

Seguro: \_\_\_\_\_:Dañino

4B. Revelar mi estado de VIH a una **pareja sexual ocasional** se sentiría:

Humillante: \_\_\_\_\_:Reconfortante

Como un alivio: \_\_\_\_\_:Estresante

Como una satisfacción: \_\_\_\_\_:Frustrante

Appendix C  
**Norms for Disclosure Scale**

We would like to know how many people with HIV you believe tell others that they are HIV positive. Please indicate to what extent you believe that HIV-positive people tell their family, friends, main partners, and casual partners that they are HIV positive. Please listen to each question carefully. **Think about HIV-positive men who are Latino. How many do you think disclose their HIV status to...**

1. Family members (mother or father, brother, sister, cousins).

- None
- A few
- Less than half
- About half
- More than half
- Nearly all
- All

2. Friends (relationships that are emotionally intimate, but not sexual).

- None
- A few
- Less than half
- About half
- More than half
- Nearly all
- All

3. Main sexual partner (with whom they are in an established relationship).

- None
- A few
- Less than half
- About half
- More than half
- Nearly all
- All

4. Casual sex partners (someone with whom they have had sex once, occasionally or regularly but not an intimate emotional relationship).

- None
- A few
- Less than half
- About half
- More than half
- Nearly all
- All

Think about HIV-positive men who are NOT Latino. How many do you think disclose their HIV status to...

5. Family members (mother or father, brother, sister, cousins)

- None
- A few
- Less than half
- About half
- More than half
- Nearly all
- All

6. Friends (relationships that are emotionally intimate, but not sexual)

- None
- A few
- Less than half
- About half
- More than half
- Nearly all
- All

7. Main sexual partner (with whom they are in an established relationship)

- None
- A few
- Less than half
- About half
- More than half
- Nearly all
- All

8. Casual sex partners (someone with whom they have had sex once, occasionally or regularly but not an intimate emotional relationship)

- None
- A few
- Less than half
- About half
- More than half
- Nearly all
- All

Appendix D  
**Norms for Disclosure Scale (Spanish Version)**

Nos gustaría saber cuántas personas con VIH cree usted que les dicen a otros que son VIH positivo. Por favor indique hasta que grado cree usted que las personas VIH positivo les dicen a su familia, amigos, parejas principales o casuales que son VIH positivo. Por favor lea cuidadosamente cada pregunta. **Piense en hombres Latinos quienes son VIH+. Cuantos cree que les dicen que son VIH+ a...**

1. Los miembros de la familia (madre o padre, hermano(a), primos)

- Ninguno
- Algunos
- Menos de la mitad
- Más o menos de la mitad
- Más de la mitad
- Casi todos
- Todos

2. Amigos (relaciones que son emocionalmente intimas pero no sexuales)

- Ninguno
- Algunos
- Menos de la mitad
- Más o menos de la mitad
- Más de la mitad
- Casi todos
- Todos

3. Principal pareja sexual (con quien se encuentran en un relación estable)

- Ninguno
- Algunos
- Menos de la mitad
- Más o menos de la mitad
- Más de la mitad
- Casi todos
- Todos

4. Parejas sexuales casuales (con quienes han tenido sexo alguna vez, de manera ocasional o regular, pero no tienen una relación emocional intima)

- Ninguno
- Algunos
- Menos de la mitad
- Más o menos de la mitad
- Más de la mitad
- Casi todos
- Todos

Piense en hombres que **no son Latinos** quienes son VIH+. Cuantos cree que les dicen que son VIH+ a...

5. Los miembros de la familia (madre o padre, hermano(a), primos)

- Ninguno
- Algunos
- Menos de la mitad
- Más o menos de la mitad
- Más de la mitad
- Casi todos
- Todos

6. Amigos (relaciones que son emocionalmente íntimas pero no sexuales)

- Ninguno
- Algunos
- Menos de la mitad
- Más o menos de la mitad
- Más de la mitad
- Casi todos
- Todos

7. Principal pareja sexual (con quien se encuentran en una relación estable)

- Ninguno
- Algunos
- Menos de la mitad
- Más o menos de la mitad
- Más de la mitad
- Casi todos
- Todos

8. Parejas sexuales casuales (con quienes han tenido sexo alguna vez, de manera ocasional o regular, pero no tienen una relación emocional íntima)

- Ninguno
- Algunos
- Menos de la mitad
- Más o menos de la mitad
- Más de la mitad
- Casi todos
- Todos

Appendix E

**Abbreviated Multidimensional Acculturation Scale**

The following section contains questions about your **culture of origin** and your **native language**. By **culture of origin** we are referring to the culture of the country either you or your parents came from (e.g., Mexico, Puerto Rico, Cuba). By **native language** we refer to the language of that country, spoken by you or your parents in that country (e.g., Spanish, Quechua, Mandarin). If you come from a multicultural family, please choose the culture you relate to the most.

**Instructions:** Please mark the response from the scale that best corresponds to your answer.

1. I think of myself as being U.S.-American.

Strongly disagree

Disagree somewhat

Agree somewhat

Strongly agree

2. I feel good about being U.S.-American.

Strongly disagree

Disagree somewhat

Agree somewhat

Strongly agree

3. Being U.S.-American plays an important part in my life.

Strongly disagree

Disagree somewhat

Agree somewhat

Strongly agree

4. I feel that I am part of U.S.-American culture.

Strongly disagree

Disagree somewhat

Agree somewhat

Strongly agree

5. I have a strong sense of being U.S.-American.

Strongly disagree

Disagree somewhat

Agree somewhat

Strongly agree

6. I am proud of being U.S.-American.

Strongly disagree

Disagree somewhat

Agree somewhat

Strongly agree

7. I think of myself as being \_\_\_\_\_ (*a member of my culture of origin*).

Strongly disagree

Disagree somewhat

Agree somewhat

Strongly agree

8. I feel good about being \_\_\_\_\_ (*a member of my culture of origin*).

Strongly disagree

Disagree somewhat

Agree somewhat

Strongly agree

9. Being \_\_\_\_\_ (*a member of my culture of origin*) plays an important part in my life.

Strongly disagree

Disagree somewhat

Agree somewhat

Strongly agree

10. I feel that I am part of \_\_\_\_\_ culture (*culture of origin*).

Strongly disagree

Disagree somewhat

Agree somewhat

Strongly agree

11. I have a strong sense of being \_\_\_\_\_ (*culture of origin*).

Strongly disagree

Disagree somewhat

Agree somewhat

Strongly agree

12. I am proud of being \_\_\_\_\_ (*culture of origin*).

Strongly disagree

Disagree somewhat

Agree somewhat

Strongly agree

**Instructions:** Please mark the response from the scale that best corresponds to your answer.

### HOW WELL DO YOU SPEAK ENGLISH

13. at school or work

Not at all

A little

Pretty Well

Extremely Well

14. with American friends

Not at all

A little

Pretty Well

Extremely Well

15. on the phone

Not at all

A little

Pretty Well

Extremely Well

16. with strangers

Not at all

A little

Pretty Well

Extremely Well

17. in general

Not at all

A little

Pretty Well

Extremely Well

**HOW WELL DO YOU UNDERSTAND ENGLISH**

18. on television or in movies

Not at all

A little

Pretty Well

Extremely Well

19. in newspapers and magazines

Not at all

A little

Pretty Well

Extremely Well

20. words in songs

Not at all

A little

Pretty Well

Extremely Well

21. in general

Not at all

A little

Pretty Well

Extremely Well

**HOW WELL DO YOU SPEAK YOUR NATIVE LANGUAGE**

22. with family

Not at all	A little	Pretty Well	Extremely Well
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

23. with friends from the same country as you

Not at all	A little	Pretty Well	Extremely Well
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

24. on the phone

Not at all	A little	Pretty Well	Extremely Well
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

25. with strangers

Not at all	A little	Pretty Well	Extremely Well
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

26. in general

Not at all	A little	Pretty Well	Extremely Well
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**HOW WELL DO YOU UNDERSTAND YOUR NATIVE LANGUAGE**

27. on television or in movies

Not at all	A little	Pretty Well	Extremely Well
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

28. in newspapers and magazines

Not at all	A little	Pretty Well	Extremely Well
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**HOW WELL DO YOU UNDERSTAND YOUR NATIVE LANGUAGE**

29. words in songs

Not at all	A little	Pretty Well	Extremely Well
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

30. in general

Not at all

A little

Pretty Well

Extremely Well

**HOW WELL DO YOU KNOW:**

31. American national heroes

Not at all

A little

Pretty Well

Extremely Well

32. popular American television shows

Not at all

A little

Pretty Well

Extremely Well

33. popular American newspapers and magazines

Not at all

A little

Pretty Well

Extremely Well

34. popular American actors and actresses

Not at all

A little

Pretty Well

Extremely Well

35. American history

Not at all

A little

Pretty Well

Extremely Well

36. American political leaders

Not at all

A little

Pretty Well

Extremely Well

**HOW WELL DO YOU KNOW:**

37. national heroes from your native culture

Not at all

A little

Pretty Well

Extremely Well

38. popular television shows in your native language

Not at all

A little

Pretty Well

Extremely Well

**HOW WELL DO YOU KNOW:**

39. popular newspapers and magazines in your native language

Not at all

A little

Pretty Well

Extremely Well

40. popular actors and actresses from your native culture

Not at all

A little

Pretty Well

Extremely Well

41. history of your native culture

Not at all

A little

Pretty Well

Extremely Well

42. political leaders from your native culture

Not at all

A little

Pretty Well

Extremely Well

Appendix F

**Abbreviated Multidimensional Acculturation Scale (Spanish Version)**

La siguiente sección contiene preguntas sobre su *cultura de origen* y su *lengua nativa*. Al usar el término *cultura de origen*, nos referimos a la cultura del país del cual usted o sus padres vienen (por ejemplo México, Puerto Rico, Cuba). *Lengua nativa* se refiere al idioma que usted o sus padres hablaban en ese país (por ejemplo, español, quechua, mandarín). Si viene de una familia multicultural, por favor escoja la cultura hacia la cual siente más apego.

**Instrucciones:** Por favor señale la opción que mejor corresponda a su respuesta.

1. Me considero estadounidense.

Totalmente en desacuerdo	Mas o menos en desacuerdo	Mas o menos de acuerdo	Totalmente de acuerdo
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2. Me siento bien de ser estadounidense.

Totalmente en desacuerdo	Mas o menos en desacuerdo	Mas o menos de acuerdo	Totalmente de acuerdo
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. Ser estadounidense juega un papel importante en mi vida.

Totalmente en desacuerdo	Mas o menos en desacuerdo	Mas o menos de acuerdo	Totalmente de acuerdo
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4. Yo siento que formo parte de la cultura estadounidense.

Totalmente en desacuerdo	Mas o menos en desacuerdo	Mas o menos de acuerdo	Totalmente de acuerdo
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

5. Tengo un fuerte sentido de ser estadounidense.

Totalmente en desacuerdo	Mas o menos en desacuerdo	Mas o menos de acuerdo	Totalmente de acuerdo
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

6. Me siento orgulloso de ser estadounidense.

Totalmente en desacuerdo	Mas o menos en desacuerdo	Mas o menos de acuerdo	Totalmente de acuerdo
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7. Pienso que soy \_\_\_\_\_ (*miembro de mi cultura de origen*).

Totalmente en desacuerdo	Mas o menos en desacuerdo	Mas o menos de acuerdo	Totalmente de acuerdo
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

8. Me siento bien de ser \_\_\_\_\_ (*miembro de mi cultura de origen*).

Totalmente en desacuerdo	Mas o menos en desacuerdo	Mas o menos de acuerdo	Totalmente de acuerdo
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

9. Ser \_\_\_\_\_ (*miembro de mi cultura de origen*) juega un papel importante en mi vida.

Totalmente en desacuerdo	Mas o menos en desacuerdo	Mas o menos de acuerdo	Totalmente de acuerdo
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

10. Siento que formo parte de la cultura \_\_\_\_\_ (*mi cultura de origen*).

Totalmente en desacuerdo	Mas o menos en desacuerdo	Mas o menos de acuerdo	Totalmente de acuerdo
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

11. Tengo un fuerte sentido de ser \_\_\_\_\_ (*mi cultura de origen*).

Totalmente en desacuerdo	Mas o menos en desacuerdo	Mas o menos de acuerdo	Totalmente de acuerdo
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

12. Me siento orgulloso de ser \_\_\_\_\_ (*Mi cultura de origen*).

Totalmente en desacuerdo	Mas o menos en desacuerdo	Mas o menos de acuerdo	Totalmente de acuerdo
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Instrucciones: Por favor señale la opción que mejor corresponda a su respuesta.

### **CUÁN BIEN HABLA INGLÉS?**

13. en el colegio o trabajo

Nada	Un poco	Bastante bien	Perfectamente bien
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

14. con amigos norteamericanos

Nada

Un poco

Bastante bien

Perfectamente bien

15. en el teléfono

Nada

Un poco

Bastante bien

Perfectamente bien

16. con desconocidos

Nada

Un poco

Bastante bien

Perfectamente bien

17. en general

Nada

Un poco

Bastante bien

Perfectamente bien

### **CUÁN BIEN ENTIENDE INGLÉS?**

18. en la televisión o en el cine

Nada

Un poco

Bastante bien

Perfectamente bien

19. en periódicos y revistas

Nada

Un poco

Bastante bien

Perfectamente bien

20. en la letra de las canciones

Nada

Un poco

Bastante bien

Perfectamente bien

21. en general

Nada

Un poco

Bastante bien

Perfectamente bien

## CUÁN BIEN HABLA ESPAÑOL?

22. con la familia

Nada	Un poco	Bastante bien	Perfectamente bien
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

23. con amistades de su mismo país

Nada	Un poco	Bastante bien	Perfectamente bien
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

24. por teléfono

Nada	Un poco	Bastante bien	Perfectamente bien
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

25. con desconocidos

Nada	Un poco	Bastante bien	Perfectamente bien
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

26. en general

Nada	Un poco	Bastante bien	Perfectamente bien
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## CUÁN BIEN ENTIENDE ESPAÑOL

27. en la televisión o en el cine

Nada	Un poco	Bastante bien	Perfectamente bien
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

28. en periódicos y revistas

Nada	Un poco	Bastante bien	Perfectamente bien
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## CUÁN BIEN ENTIENDE ESPAÑOL

29. en la letra de las canciones

Nada	Un poco	Bastante bien	Perfectamente bien
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

30. en general

Nada	Un poco	Bastante bien	Perfectamente bien
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**CUÁN BIEN CONOCE...**

31. Los héroes nacionales de Estados Unidos.

Nada	Un poco	Bastante bien	Perfectamente bien
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

32. Los shows populares de la televisión de Estados Unidos.

Nada	Un poco	Bastante bien	Perfectamente bien
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

33. Los periódicos y revistas populares de Estados Unidos.

Nada	Un poco	Bastante bien	Perfectamente bien
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

34. Los actores y actrices populares de Estados Unidos.

Nada	Un poco	Bastante bien	Perfectamente bien
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

35. La historia de Estados Unidos.

Nada	Un poco	Bastante bien	Perfectamente bien
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

36. Los líderes políticos de Estados Unidos.

Nada	Un poco	Bastante bien	Perfectamente bien
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**CUÁN BIEN CONOCE...**

37. Los héroes nacionales de su cultura nativa.

Nada	Un poco	Bastante bien	Perfectamente bien
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

38. Los shows populares de la televisión en su cultura nativa.

Nada

Un poco

Bastante bien

Perfectamente bien

**CUÁN BIEN CONOCE...**

39. Los periódicos y revistas populares en su lengua nativa.

Nada

Un poco

Bastante bien

Perfectamente bien

40. Los actores y actrices populares de su cultura nativa.

Nada

Un poco

Bastante bien

Perfectamente bien

41. La historia de su cultura nativa.

Nada

Un poco

Bastante bien

Perfectamente bien

42. Los líderes políticos de su cultura nativa.

Nada

Un poco

Bastante bien

Perfectamente bien

Appendix G  
**Total Disclosure Scale**

Now I am going to ask you about the people who know you are HIV positive. **How many people have you directly told (face to face or by telephone) your HIV status? (Please give me your best estimate.)** \_\_\_\_\_ (*# of people you have directly told your HIV status to*).

People in relation to you	Number of people in group (i.e # of children you have, # of sisters)	Number of people who you have directly told HIV status
1. Your spouse or main partner		
2. Your children		
3. Your mother		
4. Your father		
5. Your brother		
6. Your sister		
7. You uncle		
8. Your aunt		
9. Your cousins		
10. Your close friend or friends		
11. Casual sex partners		

Appendix H

**Total Disclosure Scale (Spanish Version)**

Piense en todas las personas que saben de su estado VIH positivo(a). **¿A cuántas personas le ha dicho directamente (cara a cara o por teléfono) de su estado VIH? (por favor, haga su mejor cálculo)\_\_\_\_\_.** (# de personas a las que les he dicho directamente de mi estado VIH).

Personas relacionadas con usted	Número de personas en el grupo (por ejemplo: # de hijos que tiene, # de hermanas)	Número de personas a cuales le dijo su estado de VIH
1. Su esposo(a) o pareja principal		
2. Su hijo(s) o hija(s)		
3. Su madre		
4. Su padre		
5. Su hermano(s)		
6. Su hermana(s)		
7. Su tío		
8. Su tía		
9. Su primo(s) o prima(s)		
10. Amigo(s) cercano(s)		
11. Parejas(s) sexuales casuales		

