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# The Role of Religiosity, Social Support, and Stress-Related Growth in Protecting Against HIV Risk among Transgender Women

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## Abstract

Transgender women completed questionnaires of religiosity, social support, stigma, stress-related growth, and sexual risk behavior. In a multivariate model, both social support and religious stress-related growth were significant negative predictors of unprotected anal sex, but religious behaviors and beliefs emerged as a significant positive predictor. The interaction between religious behaviors and beliefs and social support was also significant, and post-hoc analyses indicated that high-risk sex was least likely among individuals with high-levels of social support but low levels of religious behaviors and beliefs. These data have important implications for understanding factors that might protect against HIV risk for transgender women.

### Keywords

Transgender; HIV; sexual risk; religiosity; stress-related growth

Transgender women (also referred to as male-to-female or MTF transgender persons) are individuals who are born biologically male, but self-identify as female. Transgender women – especially transgender women of color – constitute a socially marginalized group with multiple stigmatized identities. Social stigma and marginalization are often associated with poor psychological adjustment and increased psychological distress, both critical predictors of high-risk behavior (Bockting, Robinson, & Rosser, 1998). Indeed, transgender women are at increased risk for HIV infection, with estimates of HIV seroprevalence in major urban centers in the United States ranging from 22% to 68 % (Garafalo, Deleon, Osmer, Doll & Harper, 2006; Elifson et al.,1993; Edwards, Fisher & Reynolds, 2007; Clements-Nolle, Marx, Guzman & Katz, 2001; Risser et al., 2005; Xavier, Bobbin, Singer & Budd, 2005). A recent meta-analysis of 29 studies estimated average seroprevalence among transgender women at 28% (Herbst, 2008), and some data suggest that transgender women may have HIV incidence rates higher than any other risk group (Kellogg, Clements-Nolle, Dilley, Katz, & McFarland, 2001). HIV seroprevalence estimates are even higher for transgender women of color; in studies

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conducted in San Francisco, Los Angeles, and New York, African-American and Latina transgender women were at significantly higher risk for HIV infection compared to their white counterparts (Clements-Nolle et al., 2001).

Increased HIV risk among transgender women has been linked to a variety of behavioral factors, including high prevalence of sex work (Operario, Soma & Underhill, 2008; Nemoto, Operario, Keatley, Han & Soma, 2004), increased rates of unprotected anal sex (Garofalo et al., 2005; Nemoto et al., 2004), and high rates of sex under the influence of alcohol or drugs (Bockting et al., 1998; Garofalo et al., 2005). Engagement in these high-risk behaviors has been linked to the stigma experienced by transgender women (Bockting et al., 1998). Some research has specifically linked stressful life circumstances and sexual risk-taking, finding that exposure to stressful events is associated with a variety of unhealthy behaviors, including high-risk sexual behavior and substance use (Johnsen & Harlow, 1996; Lang et al., 2003;Semple et al., 2009). In past studies of transgender women, high rates of discrimination predicted unsafe sex (Bockting, et al., 2002), as did low self-esteem and history of victimization (Garofalo et al., 2005).

At the same time, research on resilience to stress highlights several important factors that may assist stigmatized individuals in coping with discrimination and other stressful life situations. Social support has been demonstrated to act as a buffer against stress, blunting its negative effects and facilitating more effective coping (Cohen & Willis, 1984; Cohen, 2004). Supportive friendships have been demonstrated specifically to reduce the association between stressors and sexual risk-taking (Brady et al., 2009). Unfortunately, stigmatized individuals may sometimes avoid social relationships, and lower levels of social support have been found to mediate the relationship between stigma and both psychological and physical functioning (Larios, David, Gallo, Henrich, & Talavera, 2009). In one study of transgender women, lack of social support emerged as an independent predictor of high-risk sexual behavior (Garofalo et al., 2005).

Another factor that has been associated with enhanced coping in the face of difficult life events is stress-related growth, defined as perceptions of positive personal or life-changes associated with stressful events (see Calhoun & Tedeschi, 2006; Linley & Joseph, 2004, for reviews) Perceptions of stress-related growth have been associated with a host of positive psychological outcomes, including decreased depression and increased emotional well-being (Helgeson et al., 2006). In addition, stress-related growth has been associated with positive health behaviors, including decreased alcohol and substance use (Millam 2004; Millam 2006), improved medication adherence (Weaver, 2005), and increased physical activity (Littlewood et al., 2008). However, little research has been conducted on perceptions of stress related growth among transgender women, or on its potential impact of risk behavior in this population.

Religious behaviors and beliefs have also been identified as important components of resilience to stress. Using religious behaviors and beliefs as part of coping with negative life events has been associated with less depressive symptoms, higher self-esteem, improved cognitive functioning, and better life satisfaction (Pargament, Koenig, Tarakeshwar, & Hahn, 2004; Park, 2006; Yakushko, 2005). In accordance with evidence suggesting that religion can be used to counter experiences of stigma or discrimination, some lesbian, gay, bisexual, and transgender (LGBT) individuals use religious behaviors and beliefs (e.g., prayer, meditation, attending worship services), as a means to counter the oppression they feel based on their stigmatized identities (Love et al., 2005; Bockting & Cesaretti, 2001; Fullilove & Fullilove, 1999). However, religious affiliation may be a double-edged sword for some LGBT individuals. Religious institutions that stigmatize homosexual, bisexual, or gender non-conforming identities may actually increase mental health problems for LGBT individuals with strong

religious beliefs or affiliations with these institutions (Fullilove & Fullilove, 1999; Love et al., 2005).

The present study is an attempt to examine the relationships among three factors that might protect against sexual risk-taking among transgender women: social support, stress-related growth, and religious behaviors and beliefs. Often, investigations of HIV risk in this population focus on factors that *promote* risk behavior; in contrast, this analysis focuses on three factors identified in the literature as promoting resilience to stressful life events and *preventing* unhealthy behavior. Specifically, our analyses were designed to examine both bivariate and multivariate associations between each of these three factors and high-risk sexual behavior among transgender women, as well as explore the interactions among these factors in determining risk.

## Methods

### Participants

Seventy-five (75) transgender women (biological sex male; gender identity female) were recruited from New York City and Northern New Jersey. Participants were predominantly women of color, Latina (45.3%) and Black (34.7%), and ranged in age from 18 to 56 (*M*=35.37, *SD*=10.48). Participants reported low levels of education (72% had GED's or had not completed high-school), low personal income (68% reported making less than $30,000 per year), and 46.7% were unemployed. Half of participants (50.7%, *n* = 38) reported being HIV-positive. In terms of medical gender affirmation treatments, 93% of participants reported taking hormones; 35% (*n* = 26) reported silicone injections in their breasts (13.3%), face (20%) or buttocks (24%); 21.3% (*n* = 16) reported facial surgery, and 6.7% (*n* = 5) had their testicles removed. All participants reported having a penis.

### Procedure

Participants were part of a research study designed to test the effectiveness of a 4 week workshop series which addressed many life concerns of transgender woman (e.g. feelings of isolation, sex work, HIV risk, physical/hormonal bodily changes). Transgender women of color served as peer outreach workers to recruit potential participants. These women attended programs, bars, and night clubs that service transgender women. The peer outreach workers provided potential participants with a brief description of the project and a recruitment card with the study tag line "Interested in sharing about your experiences with your 'Girlfriends?' " and project contact information. Interested women then called in to screen for eligibility. Participants came in for baseline assessments in February 2008, followed by the 4 week workshop series, and then completed 3 month follow-up assessments. Participants received $40 for each assessment. Current analysis utilized the baseline assessment data only. All procedures were approved by the Institutional Review Board of Hunter College.

### Measures

Participants completed a series of validated measures using an Audio Computer Assisted Self Interview (ACASI). ACASI uses both computer and voice recordings so that the participant hears (through headphones) and sees (on the screen) each question and response choices. ACASI has been found to be an effective interview method for people of diverse educational backgrounds and decreases the effect of reading ability on internal validity (Gribble et al., 2000; Turner et al., 1998). Additionally, ACASI administration has been found to improve self-report of sensitive topics (Gribble et al., 2000; Williams et al., 2000).

**Religious Behaviors and Beliefs—**The Religious Behaviors and Beliefs Scale (*RBB*; Connors, Tonigan, & Miller, 1996 ) consists of thirteen items measuring religious activities,

both past and present. The first question ask participants to identify which best describes their religious beliefs (e.g. Atheist, Agnostic, Unsure, Spiritual, Religious). Then, six questions ask participants about religious behavior over the past year (e.g.: "*For the past year, how often have you done the following: Thought about God*?") on a 8 point Likert scale 1 (*Never*) to 8 (*More than once a day*). The last six questions ask participants about lifetime engagement in the same 6 behaviors: *Never=1, Yes, in the past but not now=2, or Yes, and I still do=3)*. Alpha coefficients reflecting internal consistency was .81 for the total scale. Higher scores indicate high levels of religious behaviors and beliefs.

**Multidimensional Scale of Perceived Social Support—**The Multidimensional Scale of Perceived Social Support (*SS*; Zimet, Dahlem, Ziment & Farley, 1988) consists of twelve questions measuring participants' perceived social support. Questions were on an 8 point Likert scale ranging from *1(very strongly disagree)* to *8(very strongly agree)*. Participants were asked questions such as "there is a special person with whom I can share my joys and sorrow". Alpha coefficients were strong, .93, for internal consistency. Responses were summed with higher scores reflecting high social support.

**Stress-Related Growth—**The Stress-Related Growth Scale (*SRG)* created by Roesch, Rowley, and Vaughn (2004) was adapted for this study. Participants were asked how much they felt they had learned about themselves from being transgender-women on three subscales (growth in mature thinking, emotional growth, and religious growth). Twenty-nine questions were asked reflecting each subscale. Questions such as "Being a trans woman: I learned to look at things in a more positive way (mature thinking), I learned better ways to express my feelings (emotional growth) and I developed/increased my faith in God (religious growth)" were measured on a 3 point Likert scale ranging from *1(not at all*) to *3 (a great deal)* with a strong internal consistency Alpha coefficient of .87. Each subscale also had strong Alpha coefficients; mature thinking =.90, emotional = .88, religious =.87. Participant scores were summed, with higher scores presenting higher levels of religious growth.

**Perceived Stigma and Stigma Concealment—**Two subscales (personalized stigma and disclosure) of the Perceived Stigma and Stigma Concealment Scale originally designed for HIV-positive persons (Berger, Ferrans & Lashley, 2001) were adapted for this study, consistent with previous adaptations of this measure for use with lesbian, gay and bisexual populations (Frost, Nani & Parsons, 2007; Grov, Parsons & Bimbi, 2009). The personalized stigma subscale asked participants 10 questions that measured perceived societal attitudes and possible consequences of being transgender (Alpha coefficient, .92). The disclosure subscale, alpha coefficient, .83, measured participants' concealment and disclosure of their transgender identity utilizing 10 questions. Participants were asked questions (e.g. "*I regret having told some people that I'm transgender")* on a 4 point Likert scale ranging from *1( Strongly Disagree)* to *4(Strongly Agree)*. Scores were summed with higher scores indicating more perceived stigma and concealment.

**Sexual Behavior—**Participants were asked to indicate their number of sexual partners, types of sexual partners (e.g., main partners, casual partners, sex work partners, trade partners), and types of sexual behaviors (e.g., oral sex, anal sex, protected, unprotected) in which they engaged in the last 3 months. To create a variable that represented the highest risk of potential HIV transmission or infection, we created a composite variable that represented the total number of unprotected anal sex act with non-main partners (including casual partners and/or partners with whom money, drugs, or other goods were exchanged for sex) in the past 3 months. Participants reported an average of 4.3 unprotected anal acts with non-main partners in the past 3 months (*SD* = 22.4), but this variable was significantly skewed (range: 0–178, median = 0, IQR: 0–2). As a result, we conducted subsequent analyses using a dichotomous variable

indicating any unprotected anal sex with a non-main partner in the past 3 months (1 = Yes; 0 = No).

### Statistical Analyses

The data were examined in a three-step process. First, because of the high prevalence of HIV in this sample, comparisons were made on all study variables by HIV-status (chi-square for dichotomous variables and t-tests for continuous variables). There were no differences in scores on any study variables by HIV status, so this factor was not included in further analyses. Second, bivariate analyses, including both zero-order and partial correlations, were run to investigate the association between psychosocial measures and unprotected sexual behavior. Third, based on the findings from bivariate analyses, hierarchical logistic regression was conducted to examine the relative predictive power of religious behaviors and beliefs, social support, and religious growth in predicting high risk sexual activity among this sample of transgender women.

## Results

### Bivariate Relationships among Study Variables

Correlational analyses were computed to examine relationships among the outcome variable (unprotected anal sex with a non-main partner in the past 90 days) and religious behavior/beliefs, social support, stigma, and stress-related growth. As shown in Table 1, there were a series of significant associations among study variables. However, social support and religious stress-related growth were the only two variables with significant associations with unprotected anal sex. Because of the high degree of intercorrelation among other study variables, partial correlations were conducted to assess the association between study variables and unprotected anal sex, controlling for social support and religious growth.

Controlling for social support and religious stress-related growth, a significant partial correlation was demonstrated between religious behaviors and beliefs and unprotected anal sex, $r = .26$, $p < .05$. No other variables demonstrated significant zero-order or partial correlations with high risk sex.

### Significant Predictors of High Risk Sexual Behavior

A logistic regression analysis was conducted to assess the relative predictive power of the three variables associated with high risk sex in bivariate analyses: religious behaviors and beliefs, religious stress-related growth, and social support. Step one of the regression analysis assessed the main effect of these three predictors as a set, and the second step included their two-way interactions. As is shown in Table 2, the three predictors as a set accounted for 24% of the variance in unprotected anal sex, and each of the three variables was a significant independent predictor. Every standard deviation increase in religious stress-related growth was associated with a 37% decrease in the odds of unprotected sex ($p < .05$) and every standard deviation increase in social support was associated with a 4% decrease in the odds of unprotected sex ($p < .05$). A standard deviation increase in religious behaviors and beliefs was associated with a 6% increase in the odds of unprotected sex. In the second step, the two-way interactions among study variables accounted for an additional 13% of the variance in the model. All three simple effects (i.e. effects associated with Step 1 predictors) were maintained, although the coefficients for stress-related growth and social support were reduced slightly and the coefficient for religious behaviors and beliefs was increased slightly. In Step 2, these simple effects indicate the impact of each predictor at mean levels of the other two (Jaccard & Turrisi, 2003). For example, at mean levels of both stress-related growth and social support, each standard deviation increase in religious behaviors and beliefs is associated with an almost 7% increase in odds of unprotected sex. In terms of interaction variables, the only significant

predictor in Step 2 was the interaction between social support and religious behavior and beliefs. In order to interpret this small but significant interaction effect, participants' scores on both social support and religious behaviors and beliefs were dichotomized based on a median split. The percentages of participants who engaged in unprotected anal sex was compared for each of the four categories: high religious behavior and belief/high social support; high religious behavior and belief/low social support; low religious behavior and belief/high social support; low religious behavior and belief/low social support. As shown in Table 3, the percentage of participants who reported unprotected anal sex was highest among participants with low levels of both religious behaviors and beliefs and social support (50% of these participants reported unprotected anal sex). However, the percentage of participants who reported unprotected sex was lowest among those who reported high levels of social support but low levels of religious belief/behavior (14%). In fact, among individuals with high levels of social support, unprotected sex was less likely among participants with low levels of religious behaviors and beliefs (14%) compared to those with high levels of religious behaviors and beliefs (35%), $\chi^2 = 4.85$, $p < .03$.

## Discussion

The purpose of this paper was to examine the role of religious behaviors and beliefs, social support, and stress-related growth in predicting high-risk sexual behavior of transgender women. In bivariate analyses, both social support and religious stress-related growth were significantly inversely related to unprotected anal sex, such that higher scores on these scales were protective against risk behavior. In contrast, there was a positive correlation between religious behaviors and beliefs in this sample, such that higher scores on this scale were associated with significantly increased odds of unprotected sex. However, these simple main effects must be interpreted in light of an interaction effect identified in the multivariate model. The interaction between religious behaviors and beliefs and social support was also a significant predictor of unprotected sex, and post-hoc analyses indicated that high-risk sex was least likely among individuals with high-levels of social support but low levels of religious behaviors and beliefs.

These data have important implications for understanding factors that might protect against HIV risk for transgender women. First, greater religious stress-related growth was associated with lower odds of unprotected sex, and this effect was not qualified by an interaction effect with the other variables. Across multiple studies, stress-related growth has been associated with decreased depression and greater positive well-being (Helgeson et al., 2006), as well as with positive health behaviors (Littlewood et al., 2008; Millam 2004; Millam 2006; Weaver, 2005). In this sample, religious stress-related growth was the only subscale of the larger stress-related growth scale to emerge as a significant predictor of sexual risk behavior. This finding is surprising, as all three stress-related growth subscales were highly intercorrelated, and as we might predict both the emotional and mature-thinking subscales to be associated with lower likelihood of risk-taking. We offer two potential explanations for this finding. First, it is possible that any impact of emotional stress-related growth and mature thinking stress-related growth on sexual risk-taking is mediated by social support. In other words, both types of stress-related growth may make social relationships easier and more likely to occur, but their independent effects are not strong enough to make them significant predictors in their own right. In contrast, religious stress-related growth is positively correlated with social support, but its effects seem independent from it. Instead, it appears that translating the stresses associated with being a transgender woman into a stronger religious identity allows these individuals to avoid sexual risk-taking as a negative coping strategy. These findings fit well with past research on religious coping, which finds that religious and spiritual beliefs provide a framework for thinking about negative experiences or stressful events that lessens distress

(Laubmeier et al., 2004). In addition, religious beliefs themselves have been found to lead to better health practices (Benjamins, 2006).

Interpretation of findings related to social support and religious behaviors and beliefs is more complex, given their interaction in the multivariate model. The importance of social support is not a surprising finding, and it underscores the extent to which social relationships promote healthful behavior for marginalized populations. In contrast, given average scores on social support and religious stress-related growth, higher scores on religious behaviors and beliefs were associated with *increased* sexual risk-taking in our sample. This finding stands in sharp contrast to the majority of literature on the positive effects of religious coping, which finds a positive association between health behaviors and religious practice and belief (Gardner et al., 1995; Koenig et al., 1997; Strawbridge et al., 1997; Wallace & Forman, 1998). Organized religion is believed to confer a sense of group identity, provide a network of individuals with similar beliefs, and provide an overall supportive environment for healthful behavior (George et al., 2002).

However, any findings related to both social support and religious behaviors and beliefs must be interpreted with caution, in light of the significant religious behaviors and beliefs by social support interaction. On the one hand, these data suggest that religious beliefs and behaviors moderate the role of social support on risk behavior. For individuals with high levels of religious behavior and beliefs, social support does not appear to significantly impact risk; rates of unprotected sex among those who are low in social support (36%) are almost identical to rates among those who are high in social support (35%). However, for those with low levels of religious behaviors and beliefs, rates of unprotected sex are significantly reduced for those with high levels of social support (14%), compared to those with low levels of social support (50%). One interpretation of these findings would be that social support becomes most important in the absence of other institutional or structural resources. When individuals lack religious behaviors and beliefs, social support can significantly reduce vulnerability to risk taking.

At the same time, it is important to consider the interaction effect in its alternative interpretation: social support moderates the impact of religious behaviors and beliefs on risk behavior. When social support is low, religious behaviors and beliefs play an important role in decreasing the risk of unprotected sex. But when social support is high, the impact of religious behaviors and beliefs appears to be reversed, with high levels of religious behaviors and belief associated with much higher rates of unprotected sex, compared to low levels. Both interpretations underscore two findings: 1) rates of unprotected sex are highest (50%) when both social support and religious behaviors and beliefs are low; and 2) rates of unprotected sex are lowest (14%) when social support is high, but religious behaviors and beliefs are low.

It is not surprising that participants who reported the highest rates of unprotected sex were those with neither high levels of social support nor strong religious behaviors and beliefs. Research suggests that some stigmatized individuals isolate themselves from social settings and relationships in an effort to avoid situations in which their stigma might be activated (Corrigan & Mathews, 2003; Lee & Craft, 2002;Miall, 1986; Link, Mirotznik, & Cullen, 1991). This pull toward social isolation is even more powerful among individuals with a concealable stigma, that is, a stigma that may not be immediately apparent to others, but is at risk of being discovered (Pachankis, 2007). For many transgender women, their gender identity may be experienced as a concealable stigma, reducing their ability to seek out and sustain relationships and institutional resources that can provide them with adequate levels of social support. Indeed, our data demonstrated a strong negative correlation between stigma and social support. Interestingly, however, stigma was not associated with unprotected sex in our sample, even after controlling for social support. Although we did not assess it in the current study, it

is possible that stigma may be more strongly associated with mental health outcomes for this population, while social support is more strongly associated with behavioral outcomes.

The finding that participants who reported the lowest rates of unprotected sex were those with high levels of social support but low levels of religious behaviors and beliefs is more difficult to understand. As noted above, most studies demonstrate a positive association between religious affiliation or practice and health behavior (Gardner et al., 1995;Koenig et al., 1997; Strawbridge et al., 1997; Wallace & Forman, 1998). When considered in light of the protective simple main effect of religious stress-related growth, these data may suggest a more complicated relationship between internal and external aspects of religion for transgender women. Internal aspects of religious beliefs, similar to those measured by the religious stress-related growth scale, appear to be protective against risk behavior. For some transgender women, however, institutionally-based religious behavior may be more difficult. As discussed above, some religious institutions are intolerant of gender non-conforming individuals, and may actively discriminate against transgender women and/or gay, lesbian, or bisexual individuals. In this context, strong religious behaviors and beliefs may conflict with a transgender identity, causing depression, anxiety, and other psychological factors associated with high-risk sexual behavior. In the absence of other forms of social support, such religious institutions may provide a modicum of protection against risk taking. But the transgender women with the lowest rates of unprotected sex (those whose social support was high, but religious behaviors and beliefs were low) may have been able to garner a social support network outside of a religious structure that might promote negative beliefs about their transgender identity. The measures collected in this study are insufficient to provide a true test of this hypothesis; future research is needed into the complex relationship between religion and risk behavior among transgender women.

Several limitations of the present study bear mention. First, these data are drawn from a larger study piloting a 4-week workshop series. Although these data were collected prior to the first workshop, it is likely that transgender women who are willing to participate in such a workshop series differ significantly from those who are more difficult to recruit or engage for this type of project. Additional research is needed into the role of these factors among a more representative sample of transgender women. Second, the small sample size in this study prevents us from conducting more complex analyses, such as path analysis or structural equations modeling, that might allow us to better tease apart the relationships among study variables. For example, the status of medical gender affirmation treatments among transgender women may be related to risk, social support, and religious behaviors and beliefs. Further research is needed to address these critical interactions. And third, our analyses do not include information regarding substance use among our participants. There was little variance in substance use among participants in our sample, and almost 40% reported no substance use in the past 3-months, preventing us from conducting complex analyses with this factor. Research suggests that substance use is an important factor in determining unprotected sex among transgender women (Sevelius et al., 2009) and may be used to cope with stigma and other stressors associated with being transgender (Hughes & Eliason, 2002; Nemoto et al., 2004;Sausa, Keatley, & Operario, 2007). This study was designed to focus on potentially protective factors, but future research should investigate the interaction between protective factors and those that might exacerbate risk-taking in this population.

Despite these limitations, findings from this study have several important implications for the development of HIV prevention interventions for transgender women. First, these data support the development of a “strengths-based approach” to risk reduction for this population, which draws on the potential for social support – most likely in the form of peer support – to reduce sexual risk behavior. Peer support, defined as support from a person who has “experiential knowledge of a specific behavior or stressor” (Dennis, 2003), has been demonstrated to

improve affect, reduce negative health behaviors, and improve disease management. In addition, peer support has equivalent or stronger positive effects on the individual providing support. Providing peer support has been associated with improved quality of life, self-esteem, self-efficacy, decreased risk of mortality, and improved health outcomes. Reciprocal peer support among individuals who share similar stressful circumstances has the unique ability to combine the benefits of providing and receiving peer support. Peer support theories both within HIV (Marino, Simoni, & Silverstein, 2007) and across other chronic illnesses (Gussow & Tracy, 1978; Whittemore, Rankin, Callahan, Leder, & Carroll, 2000) focus on the potential for peer social support to reduce stigma and increase social acceptance and emotional wellbeing.

Second, these data underscore the importance of interventions that promote spirituality and the transformation of struggles associated with stigma and other stressors into perceptions of religious stress-related growth. Interventions that focus on strengthening spiritual components of the self have been successful in the treatment of addiction, and have been demonstrated to be associated with decreased HIV risk behavior (Margolin et al., 2006). And third, these data suggest the importance of community-level interventions that educate religious institutions about the transgender community. Improving the ability of religious beliefs and behaviors to act as facilitators of risk-reduction, rather than as barriers to it, is critical to the long-term health and wellbeing of transgender women.

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**Table 1**

Bivariate Correlations Among Study Variables

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| 1. Unprotected Anal Sex | -- | .059 | −.283* | .073 | −.102 | −.155 | −.290* |
| 2. Religious Behavior and Beliefs | | -- | .342** | −.144 | .173 | .208 | .400** |
| 3. Social Support | | | -- | −.447** | .250* | .239* | .352** |
| 4. Stigma | | | | -- | −.172 | −.205 | −.154 |
| 5. SRG-Mature Thinking | | | | | | .696** | .510** |
| 6. SRG-Emotional | | | | | | | .528** |
| 7. SRG-Religious | | | | | | | -- |
| Mean | .36 | 34.20 | 60.12 | 23.28 | 49.87 | 17.79 | 7.91 |
| SD | .483 | 12.13 | 16.71 | 7.45 | 6.16 | 2.92 | 1.59 |

* $p < .05$;

** $p < .01$;

*** $p < .001$

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**Table 2**

Logistic Regression Analyses predicting Unprotected Anal Sex with Causal Partners

| | ***Unprotected Anal Sex*** | | | | | |
|---|---|---|---|---|---|---|
| | **Step 1 Statistics** | | | **Model Statistics** | | |
| | **β (SE)** | **OR** | **95% CI** | **β (SE)** | **OR** | **95% CI** |
| Step 1: Simple Main Effects | | | | | | |
| Religious Behaviors and Beliefs (RBB) | .057 (.027) | 1.059* | (1.005,1.117) | .066 (.030) | 1.068* | (1.007–1.133) |
| Stress Related Growth- Religious (SRGR) | −.467 (.198) | .627* | (.425,.924) | −.596 (.252) | .551* | (.336–.903) |
| Social Support (SS) | −.039 (.018) | .962* | (.929,.996) | −.049 (.023) | .953* | (.911–.996) |
| | | | Nagelkerke $R^2$ = .24 | | | |
| | | | $X^2_{step}$ = 14.44** | | | |
| | | | $X^2_{model}$ = 14.44** | | | |
| Step 2: 2-way Interactions | | | | | | |
| SS X RBB | | | | .006 (.002) | 1.006* | (1.001–1.010) |
| SS X SRGR | | | | −.021(.018) | .979 | (.946–1.014) |
| RBB X SRGR | | | | .002 (.020) | 1.002 | (.964–1.042) |
| | | | Δ Nagelkerke $R^2$ = .13 | | | |
| | | | $X^2_{step}$ = 9.45* | | | |
| | | | Nagelkerke $R^2$ = .37 | | | |
| | | | $X^2_{model}$ = 23.88*** | | | |

* $p < .05$;

** $p < .01$;

*** $p < .001$

## Table 3

Percentage of Participants Reporting Unprotected Sex by Levels of Religious Beliefs/Behaviors and Social Support

| | Social Support | |
|---|---|---|
| | **Low** | **High** |
| **Religious Behaviors and Beliefs** | | |
| Low | 50% | 14% |
| High | 36% | 35% |