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Dimensions of Religion, Depression Symptomatology, and Substance Use Among Rural African American Cocaine Users

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Abstract

Research has shown a relationship between depression, substance use, and religiosity but, few have investigated this relationship in a community sample of drug-using African Americans. This study examined the relationship between dimensions of religion (positive and negative religious coping, private and public religious participation, religious preference, and God-based, clergy-based, and congregation-based religious support), depression symptomatology, and substance use among 223 African American cocaine users. After controlling for gender, employment, and age, greater congregation-based support and greater clergy-based support were associated with fewer reported depressive symptoms. Additionally, greater congregation-based support was associated with less alcohol use.

INTRODUCTION

Drug use is a major public health problem due to the morbidity and mortality associated with use and abuse, as well as the social costs for those who use drugs and those affected by the drug use of others (National Institute on Drug Abuse, 2008). The estimated annual cost of drug use and abuse in the U.S. is approximately \$500 billion dollars as a result of the productivity losses, health care utilization, violence, vehicular accidents, and crime (National Institute on Drug Abuse & National Institute on Alcohol Abuse and Alcoholism, 2005). The drugs of choice in the U.S. have differed over the years based on geographical area and race. In the past, rural communities have been known for alcohol and marijuana use. However, recent trends have shown an increase in stimulant drug use within rural communities with Caucasians increasing their use of methamphetamines and African Americans using cocaine (Booth, Leukefeld, Falck, Wang, & Carlson, 2006).

Among the many reasons an individual may use illicit drugs, one is to self-medicate an underlying mental illness or cognitive disorder (Leshner, 1999). Individuals with disorders

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such as major depressive disorder (MDD) are at higher risk for drug and alcohol abuse (NIH Publication Number 08-5771, 2008). The self-medication of MDD is particularly concerning because it is estimated that nearly 14.8 million American adults (approximately 6.7% of the U.S. population) are living with MDD (Kessler, Chiu, Demler, & Walters, 2005).

Furthermore, it has been suggested that nearly one-third of persons with MDD also have a substance abuse disorder (Davis, L. L. et al., 2006). Understanding MDD among those with substance abuse disorders is critical because they have poorer treatment responses and higher rates of relapse (Davis, L., Uezato, Newell, & Frazier, 2008).

Vulnerability to drug use and abuse is influenced by several risk factors (National Institute on Drug Abuse, 2003a, 2003b). One major risk factor is environment. Living in impoverished neighborhoods is an environmental risk factor because it increases risk of drug addiction due to greater drug availability, fewer economic and educational opportunities, and higher rates of violent crime, incarceration, and prostitution (Laurencin, Christensen, & Taylor, 2008; National Institute on Drug Abuse, 2003b). Additional environmental risk factors in impoverished rural communities include a lack of social services and public transportation and limited specialty services such as drug abuse treatment facilities and mental health services (Dempsey, Bird, & Hartley, 1999). In addition, rural residents are more likely to have financial barriers to healthcare such as lower household incomes and less medical insurance coverage (DeNavas-Walt, Proctor, & Smith, 2011; Fortney & Booth, 2001). Finally, social stigma around mental illness and drug use may be especially challenging for rural residents (Boyd, 1998).

In 2010, 25.8% of African Americans lived below or at the poverty line and approximately one out of five did not have health insurance (Castro, Proescholdbell, Abeita, & Rodriguez, 1999; DeNavas-Walt, et al., 2011). In addition, the Southern region of the U.S. has the highest regional poverty rate, which has increased in recent years (DeNavas-Walt, et al., 2011). As a result, African Americans living in the rural South are more likely to live in impoverished environments and therefore, experience the environmental risk factors associated with drug use. Some investigators have hypothesized that living in impoverished environments increases chronic stress and negative affect, which leads to less behavioral control and greater impulsivity. This in turn is associated with maladaptive behaviors such as drug use to cope with harmful social factors, which can result in negative emotional states and possibly depression (Resnicow, Soler, Braithwaite, Ahluwalia, & Butler, 2000; Sinha, 2008). Furthermore, witnessing violence and experiencing major negative life events have been associated with lower socioeconomic status and African Americans are more likely to report stressful experiences than other racial and ethnic groups (Turner & Lloyd, 2003).

Though risk factors for drug use and MDD exist for African Americans, there are also protective factors that differentially reduce their risk. One such protective factor is religion. Religion is a multidimensional construct that includes specific dimensions such as religious coping, religious participation, religious preference, and religious support (Hall, Koenig, & Meador, 2004). Some dimensions of religion have been associated with decreased drug use, less drug abuse, and better drug addiction treatment rates (Avants, Warburton, & Margolin, 2001; Chitwood, Weiss, & Leukefeld, 2008; Coyle, Crum, & Ford, 2006; Kendler et al., 2003). However, few studies have been conducted with African American adults who are

currently using drugs and not in any form of drug treatment, rehabilitation, or counseling. This is a critical gap in the literature because these relationships may differ among active drug users.

Additionally, the relationship between religion and depression seems to be particularly salient among African Americans. Empirical evidence suggests that African Americans that ascribe stronger religious beliefs and behaviors experience a greater sense of control and support than less religious African Americans (Holt & McClure, 2006; Jang & Johnson, 2004). Furthermore, among African Americans, faith and religious belief influence the perceived causes, subsequent diagnoses, and treatment of MDD (Wittink, Joo, Lewis, & Barg, 2009). Although African American drug users share the strong religious beliefs of their non-drug-using African American counterparts and seek local faith-based institutions for tangible and intangible support (Brown, 2006; Sexton, Carlson, Siegal, Leukefeld, & Booth, 2006), few have examined the relationship between specific dimensions of religion and MDD in a community sample of drug-using African Americans. In this study, we examined the relationship between distinct dimensions of religion, depression symptomatology, and drug and alcohol use among African American drug users living in the rural South. We hypothesized that dimensions of religion would be negatively associated with depression symptoms as well as drug and alcohol use.

METHODS

Participants

The baseline assessments of participants of a longitudinal sexual risk reduction intervention for rural African American cocaine users were used to examine the relationship between dimensions of religion, depression symptoms, and drug and alcohol use. All study participants were from two impoverished, predominantly African American, rural counties in the Arkansas Mississippi Delta region. All participants met the following eligibility criteria: (1) at least 18 years old; (2) self-identified as African American, Black, or of mixed racial descent with a significant portion from African American ancestry; (3) self-reported using either powder or crack cocaine at least once in the previous thirty days; (4) self-reported engaging in oral, vaginal, or anal sex at least once in the previous thirty days; and (5) currently residing in one of two study counties in the rural Arkansas Delta. Participants who could not provide contact information, were incarcerated, or did not otherwise meet the inclusion criteria were not allowed to participate in the study. The recruitment was stratified by county and gender. Additional attempts were made to recruit a sample that was diverse in age since previous studies within this population suggest that age is associated with type of cocaine used (Wright et al., 2007).

Procedures

Respondent-Driven Sampling (RDS) was employed to sample the population (Heckathorn, Semaan, Broadhead, & Hughes, 2002). Members of the study's Community Advisory Board (CAB) and community liaisons identified five individuals who served as the initial study participants or "seeds." Those who were eligible completed the baseline survey instrument and were given three coupons to pass on to other individuals that they referred to the study.

These “seeds” began the RDS recruitment process. Each coupon had a distinct code that linked the coupon to the referring participant, contact information for the study staff, and instructions for making an appointment to check their eligibility for the study. The referent received \$10 for each eligible referral. They were allowed up to five referrals due to the rural setting and small study population. However, participants were only reimbursed for their first three eligible referrals to ensure that numerous social networks in the study population were represented in the sample and to minimize potential bias towards a particular social network in the sample (Heckathorn, et al., 2002). In addition to reimbursement for recruitment, participants received \$20 for their time and travel at the completion of the assessment. Other incentives such as condoms, personal care items, and t-shirts were also given upon completion of the assessment.

Data was collected using Computer-Assisted Personal Interviewing (CAPI) to reduce interviewer and interviewee burden (de Leeuw & Nicholls II, 1996; Schroder, Carey, & Vanable, 2003). Local interviewers received extensive training to enhance the quality of the data. Interviews were carried out at the study offices, which were located in convenient, safe, and trusted locations in the study counties. Sodas, water, and snacks were provided to ensure participants’ comfort. All procedures were approved by the University of Arkansas for Medical Sciences Institutional Review Board.

Measures

Demographics—Though our sample was relatively homogenous in regards to race, income, geographic region, and education, past research supports the influence of gender and age on religious behavior, drug use, and depression. Therefore, participant’s age (range from 18 to 65) gender (male = 1; female = 0), and employment status (employed or self-employed = 1; other = 2) were controlled for during analyses. A priori, our investigative team decided that transgender participants would be categorized as either male or female based on their responses to sexual activity items not analyzed in this manuscript. Consequently, one transgender individual was included in the male category.

Depression—The Patient Health Questionnaire (PHQ-9) was used to assess symptoms of depression in the past two weeks. The PHQ-9 is a 9-item depression screening module based on the symptoms of MDD described in the DSM-IV and is used in the diagnosis and management of MDD (Kroenke, Spitzer, & Williams, 2001). Participants were asked “Over the last 2 weeks, how often have you been bothered by” each of the DSM-IV symptoms of MDD. Responses were measured on a four-point Likert scale (0 = not at all to 3 = nearly every day). Scores from each of the nine items were summed to create a severity score with a range from 0 to 27. Kroenke, Spitzer, and Williams (2001) found that persons with severity scores less than 5 were almost always free of depressive disorders; scores of 5 to 9 represented patients with either no depression or mild depression; scores 10 to 14 included a wide spectrum of patients described as having moderate depression, scores 15 to 19 represented patients with moderately severe depression, and scores 20 to 27 represented patients with severe depression. The PHQ-9 instrument has shown acceptable validity and reliability in various settings and with diverse populations (Adewuya, Ola, & Afolabi, 2006;

Kroenke, et al., 2001; Martin, Rief, Klaiberg, & Braehler, 2006; Pinto-Meza, Serrano-Blanco, Peñarrubia, Blanco, & Haro, 2005).

Substance use—Items from the Addiction Severity Index (ASI) were used to assess frequency of alcohol, marijuana, cocaine, and multiple substance use in the past 30 days (McLellan, Cacciola, Alterman, Rikoon, & Carise, 2006). Crack cocaine and powder cocaine use were assessed separately (i.e., “On how many days in the past 30 days did you use [type of cocaine]?”). The number of days of reported crack and powder cocaine use were summed and truncated at 30 for the purposes of this analysis. Marijuana and alcohol use were assessed with a similar question item. To assess multiple substance use, participants were asked “On how many days in the past 30 days have you used more than one substance per day, including alcohol?” Although the ASI is widely used, the stability and accuracy of the ASI has been the topic of debate in addiction research (Leonhard, Mulvey, Gastfriend, & Schwartz, 2000; Mäkelä, 2004; McLellan, et al., 2006). Most often, the reliability and validity scores of the ASI are described as acceptable (McClellan et al., 1992) but psychometric scores have varied widely depending on the population and the assessment strategy (Mäkelä, 2004). Moreover, scores tend to improve when administered by a well-trained interviewer or by computer-administration (Mäkelä, 2004).

Religion—The Brief RCOPE is a shorter version of the RCOPE, a comprehensive and validated religious coping scale. The Brief RCOPE includes fourteen items and was used to assess positive and negative forms of religious coping measured on a four-point Likert scale (1 = not at all to 4 = a great deal) (Pargament, K. I., Koenig, & Perez, 2000; Pargament, K.I., Smith, Koenig, & Perez, 1998b). Positive religious coping items included asking for forgiveness and benevolent religious reappraisal. Negative items included spiritual discontent, punishing God reappraisal, and demonic reappraisal. The directions for the Brief RCOPE were revised so that participants were instructed to reference how they coped with negative life events rather than how they coped with a specific negative event. Similar alterations have been made to the Brief RCOPE in other studies with Cronbach alpha levels remaining stable (Bjorck & Thurman, 2007). The Brief RCOPE has shown evidence of good internal consistency (Connors, Whiteside-Mansell, & Sherman, 2006; Pargament, K.I., et al., 1998b).

The Religious Support Scale (RSS) was used to measure perceived support from sources that are relevant to a religious context. Participants were asked to “rate the following items for the degree to which you feel each one applies to you in general.” Twenty-one items measured the participant’s perception of support from three distinct religious sources; God, congregation, and church leaders using a five-point Likert scale (1 = strongly disagree to 5 = strongly agree) (Fiala, Bjorck, & Gorsuch, 2002). Psychometric investigation with a racially-diverse study population found strong internal consistency as well as convergent and criterion validity across the three subscales (Willoughby, Cadigan, Burchinal, & Skinner, 2008). In the current study, the wording of some items was altered after pretesting with a separate pilot study sample revealed that several scale items were unclear or inappropriate. These changes are similar to the changes made in previous studies (Lazar & Bjorck, 2008; Willoughby, et al., 2008).

The Multidimensional Measurement of Religiousness and Spirituality (MMRS) is one of the most accepted and well-distributed measurement tools in religion-health research (Abeles et al., 1999). Eight MMRS items were used to assess three dimensions of religion (i.e., religious preference, private religious participation, and public religious participation). One MMRS open-response item was used to measure religious preference. Four items created the variable public religious participation: church membership (yes, no), perceived “fit” with other church congregants (1 = fit extremely well to 5 = do not fit at all), frequency of attendance at religious services, and frequency of attendance at other activities held at a place of worship (1 = more than once a week to 6 = never). Private religious participation was measured using three items: frequency of prayer outside of church, frequency of Scripture reading, and frequency of watching or listening to religious programming. All three of the private participation items had the same response option (1 = Several times a day to 8 = never). Items with unequal ranges were standardized into a common metric then added together to create the public or private religious participation variables. The psychometric properties of some of the MMRS items used in this study have been tested in a nationally-representative sample and in a sample of female substance abusers. Tested items had strong to moderate reliability and validity (Conners, et al., 2006; Idler et al., 2003).

Analysis

Data from 223 participants were analyzed using SAS version 9.2 (SAS Institute Inc., 2008). The sample was characterized by calculating variable frequencies, means, and percentages. The subscales of each of the measures of religion were used to assess individual heterogeneous dimensions of religion. Spearman’s correlation analysis with respective approximated 95% confidence intervals (CIs) based on Fisher’s z-transformation was performed to measure the influence of negative and positive religious coping, God-based, congregation-based, and church leader-based religious support, religious preference, and private and public religious participation on depression symptoms and drug and alcohol use. In addition, Spearman’s partial correlation analysis was used to examine the relationship between dimensions of religion, depression symptoms, and drug and alcohol use controlling for the effect of gender, age, and employment status. All results were based on two-sided test with p-values < 0.05 considered statistically significant.

RESULTS

In brief, the gender composition of the study sample was evenly split with approximately 48% being female. The average age of participants was 37 years old (SD=12.85). The vast majority (70%) of participants were Baptist. As a result, the categories in the religious preference variable were collapsed into three categories; Baptist, non-Baptist Christian, and other or no religious affiliation. Though both forms of religious coping were frequently utilized, positive religious coping was reported more often than negative religious coping. Responses to the PHQ-9 indicated that 31% of participants had experienced moderate to severe depressive symptoms in the past two weeks. All participants reported cocaine use in the past thirty days, since this was one of the inclusion criteria, but most participants had used multiple substances during that same time period specifically alcohol and marijuana use.

Based on the Spearman's correlation, both congregation-based support and clergy-based support were negatively correlated with PHQ-9 scores ($r = -0.154$ and $r = -0.194$, respectively). Furthermore, negative religious coping was positively correlated with PHQ-9 scores ($r = 0.362$). The association between these religion measures and PHQ-9 scores persisted after adjustment for age, gender, and employment status using Spearman's partial correlation (see Figure 1). No other religion measure was associated with depression symptoms using either the unadjusted or partial correlation.

Prior to adjustment, only positive religious coping was negatively correlated with alcohol use ($r = -0.165$). However, based on Spearman's partial correlation, both positive religious coping and congregation-based support were negatively associated with alcohol use ($r = -0.198$ and $r = -0.194$, respectively). See Figure 2 for details. In this population, none of the religion subscales were associated with cocaine use or multiple drug use. Interestingly, positive religious coping and private religious participation were negatively correlated with marijuana use ($r = -0.161$ and $r = -0.193$, respectively). Additionally, participants who were Baptist tended to use marijuana less frequently than participants with other religious preferences. However after adjustment, the Spearman's partial correlation showed no significant associations between religion subscales and marijuana use.

DISCUSSION

Religion, particularly Protestant Christianity, has greatly influenced most Americans and generally has protective health effects (Koenig, H.G., McCullough, & Larson, 2001). Previous research has found that certain religious behaviors are associated with better mental health status, improved coping skills, and lower rates of depression (Bierman, 2006; Koenig, H.G., et al., 2001; Larson & Larson, 2003; Smith, McCullough, & Poll, 2003). Faith-based and church-based behavior change interventions have been shown to be quite effective (DeHaven, Hunter, Wilder, Walton, & Berry, 2004; Hester, 2002), especially among African Americans (Campbell et al., 2007; Holt & McClure, 2006). However, far less religion-health research has been conducted with African Americans who use drugs. Addressing this literature gap is critical because faith-based drug treatment programs form a critical subset of drug treatment that may be particularly attractive to individuals who view themselves as having a strong faith but feel somewhat ostracized from formal churches (Hester, 2002; Neff, Shorkey, & Windsor, 2006). Additionally, the research that has been conducted with drug-using populations commonly uses global measures of religion, which are poor measures of this multidimensional construct. The strength and direction of the association between religion, drug use, and depression symptoms varies widely depending on the dimensions of religion being assessed, the mechanism examined, the outcome measured, and the population targeted (Pargament, K. I., 2002). This study contributes to the current literature by exploring a few of these hypothesized associations in a rural drug-using African American population.

There are several hypothesized pathways between religion and MDD, including healthier coping skills, positive appraisal of negative life events, increased social support, healthier lifestyle including less drug use, positive social norms, greater personal efficacy and control, and enhanced sense of meaning (Koenig, H.G., et al., 2001; Moreira-Almeida, Neto, &

Koenig, 2006; Sherkat & Ellison, 1999; Smith, et al., 2003). Consistent with non-drug-using (Braam et al., 2004; Koenig, H. G., 2001; Smith, et al., 2003; Strawbridge, Shema, Cohen, & Kaplan, 2001) and in-treatment drug-using populations (Conners, et al., 2006; Pardini, Plante, Sherman, & Stump, 2000), our study found that specific dimensions of religion were associated with depression symptoms. Specifically, after adjustment for age, gender, and employment, negative religious coping was associated with higher PHQ-9 scores. In addition, positive religious coping was associated with less alcohol use and less marijuana use but this relationship did not remain after adjustment.

The importance of religious coping skills may be explained from a theoretical perspective. Social Cognitive Theory posits that too much emotional stimulus like fear, stress, and hostility, can impair behavior and without proper coping skills one will regress to more defensive and risky behaviors like drug and alcohol use (Bandura, 1986). Emotional coping responses such as religious coping are strategies used to deal with highly emotional stimuli. Proper use of positive coping skills can help manage one's response to emotional arousal, alleviate negative emotions, and promote healthy behaviors even in challenging situations. Religion can equip adherents with positive religious coping skills, which helps to reduce the perceived threat posed by difficulties, buffer the deleterious effects of stressors such as living in an impoverished rural environment, and promote the positive reinterpretation of negative events (Ano & Vasconcelles, 2005; Bjorck & Thurman, 2007; Harrison, Koenig, Hays, Eme-Akarianedi, & Pargament, 2001). Consequently, positive religious coping skills may enhance mental health and reduce participation in less healthy coping strategies such as drug use (Wiggins, Uphold, Shehan, & Reid, 2008).

Conversely, negative religious coping skills can be health-damaging and used to promote condemning and disempowering thoughts that contribute to a negative affective state (Pargament, Smith, Koenig, & Perez, 1998a). The use of negative religious coping skills has been associated with poorer mental health and more depressive symptoms (Conners, et al., 2006; Fallot & Heckman, 2005; Harrison, et al., 2001; Nooney & Woodrum, 2002; Smith, et al., 2003). Negative religious coping may be particularly important to explore among at-risk groups that live in conservative religious settings. They may feel ostracized by religious communities, which could lead to increased stress, isolation, self-destructive behaviors, and poorer mental health status. Furthermore, internalized religious beliefs about behavioral norms may exacerbate feelings of guilt, shame, and disappointment, which can lead to negative feelings of self-worth, reduce feelings of personal efficacy, and promote indulgence in unhealthy behaviors (Pargament, K. I., 2002). This is an important finding because researchers rarely explore the negative effects of religion that may increase drug use and depression especially in religious drug-using populations who may feel stigmatized by local churches (Arnold, Avants, Margolin, & Marcotte, 2002; Avants, et al., 2001; Koenig, H.G., et al., 2001).

Religious support from church leadership and congregation members was also associated with depression symptoms and alcohol use. Specifically, both greater perceived congregational support and church leadership support were associated with fewer reported depressive symptoms. In addition, greater perceived congregation-based support was associated with less alcohol use. These relationships also have theoretical support. Social

Cognitive Theory defines the construct of “environment” as factors that are physically external to a person but could have influence on that person’s behavior. Two such factors are the size of and support derived from one’s social network. It is theoretically- and empirically-supported that individuals with larger and physically-healthier social networks are more likely to have helpful others who will assist them in changing unhealthy behaviors and provide reinforcement to encourage continued performance of healthy behaviors (Bandura, 2001). Having greater social support from members of a religious community may increase access to tangible and intangible support and thereby, may improve perceived environment and promote less alcohol use and depressive symptoms. Furthermore, individuals who are more invested in their religious community due to greater access to religious support, greater participation in religious activities, or stronger social bonds with religious community members may be more motivated to comply with behaviors they believe others in their religious community are doing. In fact, they may be more willing to comply with behaviors that are promoted by or practiced by influential members of their religious community, such as religious leaders and individuals who are sources of support. In this way, peer norms, may mediate the relationship between religious support and depression and alcohol use.

Additionally, due to the influential role of religious leaders in their communities and their potential influence on depression symptoms, these findings also support efforts to provide religious leaders with training to recognize depression and refer parishioners for depression treatment, especially among African American cocaine users (Allen, Davey, & Davey, 2010; Kramer et al., 2007; Molock, Matlin, Barksdale, Puri, & Lyles, 2008). Previous qualitative research supports this assertion and has found that religious leaders were interested in receiving additional training in mental health care (Kramer, et al., 2007). Since religious leaders often serve as the “gatekeepers” or referral sources for persons in need of mental health services (Farris, 2006) or as an alternative to mental health services for some persons (Blank, Mahmood, Fox, & Guterbock, 2002), providing this training to religious leaders through substance abuse agencies might be a particularly effective means by which religious-minded substance users can be introduced to formal mental health care. Future research should explore training options for religious leaders willing to address depression and mental health care.

Lastly, although fundamentalist Protestant denominations like Baptists typically encourage a more literal interpretation of the Scriptures and promote a stricter adherence to behaviors that are supported by the Scriptures (Sherkat & Ellison, 1999; Steensland et al., 2000), no significant relationships with religious preference were maintained after adjustment. Similarly, previous research on differences across religious affiliations has found that participation in unhealthy behaviors is comparable across denominations other than denominations such as Mormons that make explicit behavioral demands on members (George, Ellison, & Larson, 2002). However, some research has found that affiliation with more conservative denominations is related to greater depressive symptoms (Nooney & Woodrum, 2002).

In summary, although the influence of dimensions of religion on depression symptoms and alcohol use were similar to relationships found in non-drug-using populations, the

associations and hypothesized pathways investigated may differ. One reason for potential differences in pathways may be that drug users feel ostracized from their religious community due to their failure to comply with the behavioral norms and therefore, may not fully participate in public religious activities. As a result, these individuals may be unable to fully access all the health-promoting benefits of involvement in a religious community and may be at greater risk for the health-damaging aspects of religion. Future research should continue to examine these relationships.

Limitations

The findings from this study should be interpreted with caution due to its cross-sectional design, risk of social desirability bias, and unique study population. In addition, participants were not formally assessed and diagnosed with MDD. Therefore, the depressive symptoms they were experiencing may have been caused by other illnesses such as Bipolar Disorder, Generalized Anxiety Disorder, or drug abuse. However, it is undeniable that additional empirical evidence is needed to elucidate the pathways between religion, drug and alcohol use, and depression symptoms among African American drug users. Few researchers have examined the social-cognitive nature of religion (Marks, 2005; Maton, Dodgen, Domingo, & Larson, 2005) and even fewer have examined these relationships in a population of active drug users. Additionally, faith-based programs are frequently handicapped by their atheoretical structure (Campbell, et al., 2007). Further investigation is needed to determine the specific role that dimensions of religion play in theory-based approaches to examining MDD and drug use within vulnerable understudied populations.

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Figure 1.
Forest plot of religion variables and depression

Figure 2.
Forest plot of religion variables and alcohol use

Table 1

Demographics, Religion, Depression, and Substance Use

Measurement	Mean/Percent (Count)	Standard Deviation	Range
Demographics			
Age	37.17	12.85	18.00 – 65.00
Female	48% (107)		
Employed	23% (51)		
Religious Preference			
Baptist	70% (157)		
Non-Baptist Protestant	14% (30)		
Other	16% (36)		
Religion			
Positive Religious Coping	20.95	4.99	4.00 – 28.00
Negative Religious Coping	13.41	4.85	4.00 – 28.00
Private Religious Participation	1.76	0.60	0.38 – 3.00
Public Religious Participation	1.65	1.13	0.38 – 3.73
Congregational Support	3.45	0.71	1.57 – 5.00
Church Leadership Support	3.53	0.74	1.00 – 5.00
God Support	4.18	0.46	2.00 – 5.00
Severity of Depression			
No depressive symptoms (0–4)	93 (42%)		
Minimal symptoms (5–9)	61 (27%)		
Mild symptoms (10–14)	32 (14%)		
Moderate symptoms (15–19)	28 (13%)		
Severe symptoms (20–27)	9 (4%)		
	Median	25 th , 75 th Percentiles	Range
PDQ9	6.00	2.00 – 11.00	0.00 – 27.00
Drug use in the Past 30 days			
Alcohol	15.00	4.00 – 30.00	0.00 – 30.00
Marijuana	13.00	2.00 – 30.00	0.00 – 30.00
Cocaine	10.00	3.00 – 20.00	0.00 – 30.00
Multiple Substance Use	12.00	3.00 – 30.00	0.00 – 30.00