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The roles of spirituality in the relationship between traumatic life events, mental health, and drug use among African American women

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Abstract

This study examines the role of spirituality as a moderator of the relationship between traumatic life experiences, mental health, and drug use in a sample of African American women. It was hypothesized that there would be an inverse relationship overall between spirituality and mental health and drug use among this sample of African American women. Secondly, was expected that spirituality would moderate the relationship between traumatic life events and mental health and drug use. African American women (n=206) were recruited from the community and from probation officers in three urban areas of a southern state, and face-to-face interviews were completed. Findings indicated that there was a main effect for spirituality (as measured by existential well-being on the Spiritual Well-Being Scale) and traumatic life events, mental health, and alcohol use. In addition, spirituality was a significant moderator of the relationship between traumatic life events and cocaine use. Discussion and implications for African American women are included.

Keywords

spirituality; religiosity; drug use; mental health; trauma; African American women

Introduction

Spirituality has received attention in the health and mental health research literature in the past few years as a protective construct. While difficult to define in empirical or quantitative terms, spirituality is often expressed as a private, individual-level concept that is characterized by perceptions, beliefs, and feelings about a sacred or divine higher power, universal spirit, or ultimate purpose (e.g., Chida, Steptoe, & Powell, 2009; Green, Fullilove, & Fullilove, 1998; Watkins, 1997) or even more broadly as a sense of existential well-being which has been referred to as an understanding or belief in the meaningfulness of one's own life (Arnette, Mascaro, Santana, Davis, & Kaslow, 2007). A related construct of religious well-being, on the other hand, is often defined through adherence to behaviors such as attending religious services or affiliation with a particular religious group (e.g., Gorsuch,

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1995; Taylor, Chatter, & Joe, 2011). Although slightly different nuances in definition, both constructs have been shown to be strongly related to positive mental health functioning (Dalmida, et al., 2009; Rippentrop, et al., 2005; Taylor, et al., 2011; Visser, Garssen, & Vingerhoets, 2010).

While spirituality and religious well-being have been identified as important and protective constructs related to mental health in the general research literature, they have been found to be uniquely important for African Americans. A high percentage of African Americans identify with a particular church affiliation or other religious denomination or organization (Taylor et al., 2000), and the church is uniquely viewed in high esteem as a core of the community with positive role models and sense of belonging (Giger, et al., 2008). With religion and spirituality holding such high importance to the community as a whole, it comes as no surprise that research documents these as primary mechanisms of coping with mental health issues such as depression and PTSD (Watlington & Murphy, 2006) and suicidal ideation (Taylor, et al., 2011). However, despite the relationship between these constructs and mental health in general, research has not focused on the extent to which spiritualty may influence mental health in the face of more extenuating circumstances – such as the presence or experience of traumatic events. The purpose of this study is to examine the role of spirituality as a moderator of the relationship between traumatic life experiences (defined by the Traumatic Life Events scale for negative experiences in relationships, employment, financial, legal problems, etc.), mental health (specifically depression and anxiety), and drug use in a sample of African American women.

Spirituality and mental health

Spirituality is a concept that has been intricately woven into the African American cultural fabric with churches forming the spiritual foundation and core of communities. The experience of living a spiritual life among African American women includes “divine reciprocity, heightened interpersonal interconnectedness, emotional equilibrium, and empowering change” (Newlin, Knafl, & Melkus, 2002). Among African American women, spirituality has been characterized as a “relational phenomenon” and “internalization and expression of key values” including understanding, acceptance, guidance, centeredness, purpose, coping, and managing adversity (Mattis, 2000;114–115). Mattis (2000) described religiosity among African American women, on the other hand, as a vehicle by which to achieve spirituality.

Given the importance of spirituality to African American women in general, it is not surprising that research has demonstrated consistently that it may be important for coping in light of health and psychological challenges. Research in the last two decades has consistently shown that adherence to a religion and church attendance are associated with positive health and mental health outcomes among African Americans – despite well documented health disparities and challenges associated with health service utilization (Giger, Appel, Davidhizar, & Davis, 2008). As an example, Watlington and Murphy (2006) found among a sample of African American women survivors of domestic violence that higher levels of spirituality and religious involvement were associated with fewer depressive symptoms and PTSD symptoms. In a separate study, Paranjape and Kaslow (2010) found that among older African American women (recruited through convenience sample from health care clinic), spirituality was significantly related to better physical health and mental health despite controlling for history of family violence. These findings suggest that spirituality and religious well-being are important for African American women, and there is evidence to suggest that they are protective for experiencing mental health issues.

Spirituality and drug use

The current study among African American women targets another defining characteristic of the population also considered to be protected by spirituality -- drug use. The existing literature in this area consistently documents an inverse relationship between spirituality and use of substances (e.g., Geppert, Bogenschutz, & Miller, 2007). For example, studies have shown that church involvement and spiritual beliefs are protective for drug use (Gorsuch, 1995), that spiritual engagement is strongly and positively correlated with recovery (Miller, 1998). Even among drug users, findings showed that those who adhered to stronger spiritual/ religious beliefs reported less use or less risky use (e.g., Staton-Tindall, et al., 2008; Staton, et al., 2003).

Despite consistent findings in the general research literature on drug use and spirituality, within the African American community, this relationship is less understood. While the aforementioned review discussed the importance of the church and spiritual foundation to the African American community, substance use, abuse, and illegal trafficking continue to ravage many African American communities throughout the U.S. Literature on peer behavior dating back two decades tells us that involvement in the church makes social conformity more likely (Bahr, Hawks, & Wang, 1993; Cochran, Beeghley, & Boch, 1998; Gorsuch, 1995), which would suggest increased likelihood of not using drugs within communities with a strong spiritual connection or church affiliation. The extent to which adherence to spiritual beliefs and religious well-being as protective for substance use behaviors among African American women –particularly those with a history of experiencing trauma and violence - has not been examined and will be a focus of the current paper.

Mental health, drug use, and traumatic life events

The protective nature of spirituality for mental health issues that may be related to abuse or violence among drug users has also not been examined. The literature has consistently shown that a history of victimization and abuse results in long-term health (McCauley et al., 1998; Romito, Turan, & De Marchi, 2005) and mental health (McCauley et al., 1998) consequences. Findings have also shown that the extent of health and mental health consequences and distress may vary for women based on the extent of violence severity experienced (McCauley, et al., 1998) and the timing of the violent experience (past vs. current) (Romito, Turan, & De Marchi, 2005).

Findings focused on African American samples of women indicate that there are cultural consistencies in the psychological and emotional distress associated with physical (Russo, et al., 1997), sexual (Bryant-Davis et al., 2010), and non-physical (Teitelman, et la., 2011) victimization. Russo and colleagues (1997) reported similar findings as noted above for an African American sample of women in that abuse history – both childhood and adult partner situations – were strongly and positively related to increased depression. Among African American youth, a separate study found that girls are more likely than boys to demonstrate internalizing symptoms when exposed to violence (either as victims or witnesses) – suggesting that mental health issues such as depression or post-traumatic stress disorder are more of a risk for girls than for boys following a traumatic event (McGee, et al., 2001). One factor that was noted as a unique contributor to mental health outcomes of depression, post-traumatic stress disorder, and drug use among African American women who had experienced a sexual assault was poverty (Bryant-Davis, et al., 2010).

This finding related to poverty is important, and may provide a cultural context for understanding mental health outcomes following exposure to a traumatic event if means for accessing or attaining mental health treatment are not available. Studies have shown that

African Americans are consistently less likely than other racial and ethnic groups to utilize mental health services (William et al., 2007; Conner, et al., 2010), and among those who use services, to attend fewer sessions and to drop out earlier (Miranda & Cooper, 2004). In the absence of using formal treatment services, however, African Americans, particularly women, are more likely to use informal sources of coping with mental health issues such as social support networks and the religious community (Ward, Clark, & Heidrich, 2009). Therefore, it is plausible that African American women who have experienced a traumatic event who adhere to a strong sense of religious commitment or spiritual beliefs may in some way experience fewer mental health issues – even if they are engaging in at-risk drug use behavior that may increase their vulnerability.

Focus of the current study

The purpose of this study is to examine the role of spirituality as a moderator of the relationship between traumatic life experiences and mental health and drug use in a sample of African American women. The following research objectives will guide the study: (1) to profile spirituality, prevalence of traumatic life experiences, drug use, and mental health issues among African American women; (2) to examine the bivariate relationships between spiritualty, traumatic life experiences, drug use, and mental health issues; (3) to examine the extent to which spirituality moderate the relationship between traumatic life experiences and mental health; and (4) to examine the extent to which spirituality moderates the relationship between traumatic life experiences and drug use. It is hypothesized that there will be an inverse relationship overall between spirituality and mental health and drug use among this sample of African American women. Secondly, it is expected that spirituality will moderate the relationship between traumatic life events and mental health and drug use.

Method

Participants

Participants in this study included 206 African American urban women living in a southern state. The women were about 36.6 years old, and the majority were unmarried (91%) with children (78%). About two-thirds of study participants (62%) reported graduation from high school or GED equivalent, and they had an overall average of 12.8 years of education. Approximately (40%) of participants reporting working either full or part-time during the time of the baseline interview, the majority of participants (90%) reported making less than $20,000 in the past year.

Procedure

Data collected in this study is part of a larger NIDA funded trial to examine differences in health problems and service utilization among African American women with differing criminal justice histories and degrees of substance use involvement (Oser, PI, NIDA R01DA022967). Therefore, participants were recruited in two ways. In general, recruitment was targeted in the zip codes with the highest percentage of African Americans in the targeted urban area. First, in order to attain a community sample of African American women, study recruitment procedures included posting advertisements describing a women's health study in woman-specific local magazines well as at various shops and public transportation access points throughout the targeted urban area. Interested women were asked to call the research study office using a toll free contact number. Research staff conducted a phone screening with potential participants for eligibility (i.e., over 18 years of age, racially self-identified as African American woman, self-report use of an illegal drug in the past year, and no current/ongoing criminal justice involvement). Secondly, in order to attain a sample of African American women on community probation supervision, research staff visited six probation offices during report days and contacted potentially eligible

participants following their contacts with their probation officers. Research staff approached an African American woman on probation, asked her for a few minutes to overview the study, and conducted screening for eligibility. Eligibility criteria for the probation sample included being over the age of 18, self-identifying as an African American woman, self-reported use of an illegal drug in the past year, and currently being on probation. In both recruitment scenarios, eligible participants were scheduled with study research staff within a short time period to conduct a structured, private interview.

All study procedures were approved by the University of Kentucky Institutional Review Board (IRB). Training for research interviewers included both data quality assurance for interview measures as well as human subjects protections. Prior to the baseline interview, study staff reviewed the IRB approved informed consent, parameters of confidentiality, voluntary nature of the study, and incentives. Due to the sensitive nature of the material to be discussed in the interview, participants were assured that their responses would be kept confidential and protected by a Certificate of Confidentiality from the Department of Health and Human Services. Interviews were conducted using Computer Assisted Personal Interview (CAPI) software by trained female African American interviewers. Information covered in the interviews included socio-demographic characteristics, physical and mental health status, service utilization, patterns of illicit substance use, and attitudes/behaviors regarding sexual relationships. Respondents who completed the 2 hour interview were compensated $20 for their time.

Measures of Independent Variables

Demographic characteristics—Six variables were included. Participants' marital and employment status were indicated dichotomously (0=no, 1= yes). Income in the past year was measured using nine categories ranging from "*$0 – $5000"* to "*$75,000 and above*." Age, years of education, and number of children were each measured continuously.

Spirituality—A modified version (Staton, Webster, Hiller, Rotosky, & Leukefeld, 2003) of the Spiritual Well-Being Scale (SWBS) (Paloutzian, & Ellison, 1982) was used to measure spirituality. Spirituality, as defined by the SWBS, has been defined as both one's sense of meaning in life and one's relationship with God and has encompassed both religious well-being and existential well-being (Ellison, 1983). For the purposes of this study, subscales indicating existential well-being (i.e., sense of overall life purpose) and religious well-being (i.e., belief in God) were examined separately. A sample item for the existential well-being subscale is "I believe there is some real purpose for my life," and a sample item for the religious well-being subscale is "I believe there is a higher power." Responses were made on a six-point continuum ranging from "*Strongly Disagree"* to "*Strongly Agree*." Items from each subscale were summed to create composite scores for religious and existential well-being. In each case, negatively worded items were reverse scored so that lower values indicated less well-being. Reliability of each subscale was high (α_{Exi} = .85; α_{Rel} = .87. Previous studies have found the SWBS to be valid measure of spirituality in both community and offender populations (e.g., Paloutzian & Ellison, 1982; Fernander, Wilson, Staton, & Leukefeld, 2004; Staton, Webster, Hiller, Rotosky, & Leukefeld, 2003).

Trauma exposure—A modified version of the Traumatic Life Events Questionnaire (TLEQ; Kubany, Haynes, Leisen, Owens, Kaplan, Watson, & Burns, 2000) was used to indicate participants' trauma history over the course of the previous year. The version of the TLEQ used in this study deviated from the original in that it omitted questions regarding natural disasters and combat experience. In addition, 3 items measuring unwanted sexual contact in childhood were combined into a single item indicator. Questions were added regarding relationship, employment, financial, and legal problems. Sample items are "A

close friend or loved one died unexpectedly," and "You broke off a steady relationship or got divorced." Responses to this modified version of the TLEQ were made using a seven-point continuum (0–6) ranging from "*Never"* to "*More than 5 times.*" Twenty-three items were summed to create an overall indicator of lifetime trauma history. Higher values indicate a greater/more frequent lifetime trauma. Reliability of the modified TLEQ was high (α = .81. Previous studies have found the original version of the TLEQ to be valid measure for indicating individuals' experiences of trauma (e.g., Peirce, Burke, Stoller, Neufeld, & Brooner, 2009).

Measures of Dependent Variables

Mental health—Two items from the Addiction Severity Index (ASI; McLellan, Luborsky, Woody & O'Brien, 1980) were used to indicate whether participants had a significant period in which they experienced serious depression or serious anxiety in the past 30 days. Responses were indicated dichotomously (0 = no, 1 = yes). Previous studies have shown the ASI to provide a reliable and valid measure of mental health, particularly in populations of substance users (i.e., McLellan, Luborsky, Woody & O'Brien, 1980).

Substance use—Five items were adapted from the Addiction Severity Index (ASI; McLellan, Luborsky, Woody & O'Brien, 1980) to indicate the number of days in the last 30 participants used alcohol use to intoxication, tobacco, marijuana, crack cocaine, and powder cocaine. For all analyses, items measuring crack and powder cocaine use were averaged to provide an overall measure of cocaine use. Previous studies have shown the ASI to provide a reliable and valid measure of substance use frequency (McLellan, Luborsky, Woody & O'Brien, 1980).

Analytic Strategy

To meet the objectives for this study, a series of descriptive, bi-variate, and multivariate analyses were performed. For objective 1, descriptive statistics are used to profile participants' levels of spirituality, trauma exposure, mental health, and substance use. For objective 2, bivariate correlations are used to explore relationships between spirituality, trauma exposure, mental health, and substance use. Finally, for study objective 3, logistic and negative binomial regression models were used to examine the extent to which the two indicators of spirituality moderated relationships between trauma exposure and either mental health or substance use. The negative binomial method was used because examination of non-dichotomous count outcomes such as number of days used drugs in the last 30 days can result in biased estimates using linear regression techniques (Long & Freese, 2005).

In order to control for the known influence of socio-demographic characteristics on traumatic life events, mental health, and substance use, variables such as age, criminal justice status (community vs. probation), marital status, number of children, years of education, employment status, and income were also included as main effects in each of the models.

Analyses were conducted using SPSS 20.0 and STATA version 12 (College Station, Texas). For models using binary logistic regression, results are displayed in terms of odds ratios, standard errors, and confidence intervals. For models using negative binomial regression, results are displayed as β coefficients, standard errors, and incident rate ratios (IRRs). IRRs index the change in units in the outcome variable (e.g., days used marijuana in the past 30) associated with a one unit increase in a predictor variable (Oser, Leukefeld, Staton-Tindall, Garrity, Carlson, Falck, Wang, & Booth, 2011).

Results

Descriptive Profile

Descriptive statistics profiling participants' levels of spirituality, trauma exposure, mental health, and substance use are displayed in Table 2. The mean score on the SWBS subscale was 116.0, which is consistent with normed scores for the scale provided by Scott and colleagues (1998) for the original scale. As shown in Table 2, the most commonly reported lifetime traumatic event experienced was losing a job (86%), followed by death of a close friend (83%). A small percentage of women in this sample reported mental health symptoms in the past 30 days with only 17.5% reporting depression and 16.5% reporting anxiety. Drug use was also less commonly reported with marijuana use on 5 days and cocaine use on 2 days in the last 30.

Bivariate relationships

As displayed in Table 3, a series of correlations were computed to examine basic relationships between spirituality, trauma exposure, mental health, and substance use. Results of these analyses showed that participant's scores on the existential subscale of the Spiritual Well-

Being Scale was negatively associated with traumatic life events ($r = -.32$, $p < .01$), serious depression ($r = -.32$, $p < .01$), serious anxiety ($r = -.31$, $p < .01$), days of alcohol use ($r = -.24$, $p < .01$), days of tobacco use ($r = -.14$, $p < .01$), and days of cocaine use ($r = -.22$, $p < .01$).

Participant's scores on the religiosity subscale of the Spiritual Well-Being Scale was negatively associated with alcohol use ($r = -.16$, $p < .05$), tobacco use ($r = -.19$, $p < .01$), and marijuana use ($r = -.15$, $p < .05$). The experience of traumatic life events was positively associated with reports of serious depression ($r = .31$, $p < .01$), serious anxiety ($r = .37$, $p < .01$), and days of cocaine use ($r = .19$, $p < .01$). Although mental health variables were highly correlated with each other, significant associations with substance use were only found between reports of serious anxiety, and days of cocaine use ($r = .15$, $p < .05$; $r = .18$, $p < .05$). Days of alcohol use to intoxication was associated with more days of cocaine use ($r = .30$, $p < .05$).

Multivariate Moderation Analysis

A series of binary logistic and negative binomial regression analyses were conducted to test whether measures of spirituality moderated relationships between exposure to trauma and mental health or substance use outcomes. In each of the models, relevant socio-demographic characteristics (i.e., age, marital status, number of children, years of education, employment status, income, and criminal justice status) were entered in the first step. Terms involving trauma exposure and spirituality were entered in step 2. A multiplicative term representing the interaction effect of trauma exposure and the relevant measure of spirituality was entered in step 3. For models utilizing negative binomial regression, it should be noted that measures of trauma exposure and spirituality were dummy coded before being multiplied to create each of the interaction terms. This was done to aid in the estimation/convergence of the models.

Existential well-being—Existential well-being emerged as a significant predictor of depression, anxiety, alcohol use, and cocaine use. More specifically, as displayed in Table 4, single unit increases on the existential subscale of the SWBS were associated with a decreased likelihood that participants had experienced serious depression (46%) and serious anxiety (47%) in the past 30 days. As displayed in Table 5, unit increases in existential well-

being were also associated with a reduction in the number of days individuals reported using alcohol (42%) and a reduction in the number of days individuals reported using cocaine (74%) in the past 30. There was also a significant interaction indicating a moderation effect for existential well-being in the relationship between trauma exposure and cocaine use (see Table 5). Specifically, as the number of traumatic life events reported by participants' increases, the protective effect of existential well-being on combined crack/powder cocaine use was significantly reduced.

Religious well-being—As before, trauma exposure emerged as a significant predictor of mental health outcomes in this model with participants being more likely to have experienced serious depression (3%) and serious anxiety (4%) for each unit of increase in their scores on the Traumatic Life Events Questionnaire (see Table 6). Also, Table 7 indicates that a unit increase in religious well-being is also associated with a 30% reduction in the number of days individuals reported using cocaine in the past 30. However, no significant interactions or associations emerged between trauma exposure and any of the substance use outcomes.

Discussion

The current study is the first to examine the relationship between spirituality, traumatic exposure, mental health, and drug use among African American women. This study hypothesized that there would be an inverse relationship overall between spirituality and mental health and drug use among this sample of African American women. These findings were supported, particularly for the relationship between existential well-being, mental health, and drug use. Our findings revealed existential well-being as a protective factor against anxiety, depression, and cocaine use – which is consistent with the literature on spirituality serving as a protective construct with our sample of largely low-income African American women. In addition, our findings are consistent with previous research suggests that high levels of existential well-being are associated with decreased risk for alcohol, drug, and tobacco dependence, as well as a number of other physical and mental health outcomes (Tsuang, Simpson, Koenen, Kremen et al., 2007).

Religious well-being was not a significant correlate for drug use and mental health in this analysis. Although religiosity has largely served as a protective function, findings have been mixed among African American drug-using women. For example, in an ethnographic study of rural African American women drug users, Brown (2006) found that attendance at religious services and social integration into a religious community were not effective protections against substance use because of the stigma faced by women who were already using drugs. Specifically, the women in the study reported being uncomfortable attending church due to fears of what others would think of them, which would be reflective of religiosity as opposed to spirituality. It may be likely that drug-using African American women rely more on their personal relationship with God and spirituality through teachings of support groups such as Alcoholics Anonymous (AA) or Narcotics Anonymous (NA), as opposed to engaging in formal religious practices risking exposure to other within the church community.

This study also hypothesized that spirituality would moderate the relationship between traumatic life events and mental health and drug use. The test of moderation was only partially supported with findings significant only in the cocaine model. There was an interaction for existential well-being, traumatic life events, and cocaine use. Specifically, as the number of traumatic life events reported by participants increased, the effect of existential well-being on combined crack/powder cocaine use was significantly reduced. While there was no significant interaction for the mental health model or other drugs of

abuse, existential well-being remained a significant main effect on traumatic life events when other variables were loaded in the model. These findings are consistent with other studies which have examined spirituality as a factor which might influence the relationship between trauma and mental health among African American women. Watlington and Murphy (2006) also found significant bivariate relationships between spirituality, religious involvement, and depression, and between religious involvement and PTSD symptoms. Bradley, Schwartz, and Kaslow (2005) examined religious coping (among other factors) as a mediator between child maltreatment and intimate partner violence and PTSD symptoms among low-income African American women. Their study also found a reciprocal relationship between a history of child abuse, PTSD symptoms, decreased self-esteem, and negative religious coping.

Despite this relationship between existential well-being, trauma, and mental health, other studies have shown that African American women may cope with traumatic and stressful events by engaging in “self-silencing”; thus denying the existence of psychological distress (Beauboeuf-Lafontant, 2007). Drug use and mental illness have been stigmatized in the African American community, particularly for women. The African American cultural has historically relied on the woman to carry the burdens of the family leaving little room for her to process the experience of traumatic life events. It is possible, therefore, in our study of African American women that the trauma experienced has resulted in an increased risk for anxiety and depression, and coping with the trauma involves possible drug-use and denial as opposed to reliance upon religious or spiritual coping mechanisms for support. This should be examined in future research.

Conceptualizing mental health and drug use within African American culture involves understanding the worldview, or a system of thoughts and beliefs, for African American women. Belief in a divine force that impacts one’s life is consistent with an external control belief that events occur independently of one’s personal actions, which is often held by many African Americans (Sue & Sue, 2008; Mattis, 2004). The external control belief may serve to provide an avenue to cope with stressful situations, and traumatic life events and is consistent with previous literature on the role of spirituality and religiosity as protective factors against substance use and mental illness among African Americans. The concept of existential well-being has not been specifically studied as it relates to mental health, trauma, and drug use among African Americans, but these study findings suggest that it may play a more significant role than traditional religious beliefs or behaviors. Therefore the current study adds to the literature on African American women’s mental health.

An aspect of spirituality consistent with the construct of existentialism that should also be considered and is characterized as central in understanding health behavior from an African American cultural worldview is fatalism (Franklin et al., 2007). Fatalism is the belief that circumstances and individual health outcomes are predetermined or purposed by a higher power and dependent on God (Powe & Finne, 2003) and has largely been studied as it relates to physical health outcomes. Furthermore, although fatalism has been contributed to overall negative health outcomes it has been determined that its function when considered in a cultural context can result in positive outcomes (Keely, Wright, & Condit, 2009). Research demonstrates that low income populations and African Americans are more likely to endorse religious fatalism compared to Whites (Franklin et al., 2007). Fatalistic beliefs are related to existentialism among African American women with the attribution of the meaning of their lives being determined by a higher power. These beliefs have historically functioned as an adaptive coping mechanism for African Americans contributing to overall resiliency (Oakley, Song, & DeBose-McQuirter, 2004; Younge, Salem & Bybee, 2010) particularly when individuals perceive a limited access to resources. Thus, the idea of fatalism should be

further explored in future research for its relationship to spirituality among African American women.

Study's limitations

The present study has some limitations. First, findings must be interpreted with the understanding that data are self-reported. While confidentiality was assured at the time of consent, approximately half of the women in the study were on community supervision (probation) at the time of enrollment and may have felt that disclosure of drug use or other illegal behaviors may have placed them at increased risk compared to the community sample of African American women. While this analysis used criminal justice status as a control variable and not the primary variable of interest, additional studies from this dataset will focus on these groups separately to examine possible differences in these variables based on level of criminal involvement. Another limitation is that this study design does not currently allow for temporal analysis of spirituality, mental health, and traumatic events over time. Because the study focuses on any behaviors that may have occurred during the lifetime, future studies should include incorporate a longitudinal perspective on the development of mental health issues, substance use behaviors, traumatic events as they might be influenced by changes in a person's spiritual or religious well-being.

Conclusions

Despite these limitations, this is the first study to examine the relationship between spirituality, traumatic events, mental health, and drug use among African American women. The research literature has consistently shown that spiritualty is an important construct among African Americans in general, but the exploration of these constructs as protective factors in the relationship between traumatic life events, mental health, and drug use is a unique contribution to the literature. These study findings indicate that existential well-being is particularly important for African American women, and future research should examine how to integrate this into assessment and treatment of mental health and/or substance use issues.

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Biographies

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Carrie Oser, Ph.D. is an Associate Professor in the Department of Sociology with an appointment in the Center on Drug and Alcohol Research and the College of Medicine's Department of Behavioral Science at the University of Kentucky. Dr. Oser is the Principal Investigator or Co-Principal Investigator on four National Institute on Drug Abuse (NIDA) supported research projects and serves as a mentor on three NIDA training grants. Dr. Oser has published over 60 articles in peer-reviewed journals on topics including health services,

health disparities, HIV risk behaviors/interventions, as well as substance abuse among either rural, minority, and/or criminal justice populations.

Glossary

Existential well-being	a dimension of spiritual well-being that includes one's beliefs about one's place and purpose in the world
Mental health	the experience of serious depression or anxiety in the past 30 days
Moderator	a variable that significantly affects the direction and/or strength of the relationship between an IV and a DV; an interaction term
Religious well-being	a dimension of spiritual well-being that includes a person's belief in and relationship with a higher being and adherence to religious affiliations
Trauma exposure	experiencing any number of events which have been deemed to evoke a response which can have long term emotional and mental consequences

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Table 1

Measures of Study Variables

Demographics		
	Marital status	Ever married – yes/no
	Employment status	Working – yes/no
	Income in past year	Categorical ranging from “$0 – $5000” to “$75,000 and above.”
	Age	Interval
	Years of education	Interval
	Number of children	Interval
Independent Variables		
Spirituality	Existential Well-Being	Spiritual Well-Being Scale (Paloutzian & Ellison, 1982)
	Religious Well-Being	Spiritual Well-Being Scale (Paloutzian & Ellison, 1982)
Trauma exposure	Exposure to traumatic events	Traumatic Life Events Questionnaire (Kubany, Haynes, Leisen, Owens, Kaplan, Watson, & Burns, 2000)
Dependent Variables		
Mental health	Depression past 30 days – yes/no	Addiction Severity Index (Mclellan, Luborsky, Woody & O’Brien, 1980)
	Anxiety past 30 days – yes/no	Addiction Severity Index (Mclellan, Luborsky, Woody & O’Brien, 1980)
Substance use	Alcohol use to intoxication past 30 days	Addiction Severity Index (Mclellan, Luborsky, Woody & O’Brien, 1980)
	Tobacco use past 30 days	Addiction Severity Index (Mclellan, Luborsky, Woody & O’Brien, 1980)
	Marijuana use past 30 days	Addiction Severity Index (Mclellan, Luborsky, Woody & O’Brien, 1980)
	crack cocaine use past 30 days	Addiction Severity Index (Mclellan, Luborsky, Woody & O’Brien, 1980)
	Powder cocaine use past 30 days	Addiction Severity Index (Mclellan, Luborsky, Woody & O’Brien, 1980)

Table 2

Descriptive Profile of Spirituality, Traumatic Life Events, Mental Health, and Substance Use (N=204)

Variable Name	Mean/%	SD	Range
Spirituality			
Spiritual Well-Being Scale (SWBS total)	116.0	15.3	64.0 – 144.0
SWBS Existential Well-Being	52.9	9.9	22.0 – 72.0
SWBS Religious Well-Being	63.2	7.9	31.0 – 72.0
Trauma Exposure (Lifetime)			
Traumatic Life Events Scale	30.1	18.2	1.00–87.0
You became unemployed or were seeking work unsuccessfully.	86.9	2.20	0.00–6.00
A close friend or loved one died unexpectedly.	83.5	1.85	0.00–6.00
You broke off a steady relationship or got divorced.	72.8	1.74	0.00–6.00
You were laid off or fired from your job.	68.9	1.64	0.00–6.00
You had a major financial crisis.	67.9	2.34	0.00–6.00
You were physically abused by a significant other.	64.6	2.46	0.00–6.00
You had problems with the police and a court appearance.	64.6	2.47	0.00–6.00
A close friend or loved one had a life-threatening/disabling illness.	61.2	1.44	0.00–6.00
While growing up, you witnessed physical violence between family members.	53.3	2.75	0.00–6.00
You were severely assaulted by an acquaintance or stranger	48.1	2.13	0.00–6.00
Mental Health (Past 30 Days)			
% Serious Depression	17.5	N/A	0.00–1.00
% Serious Anxiety	16.5	N/A	0.00–1.00
Substance Use (Past 30 Days)			
Alcohol	1.99	5.37	0.00–30.0
Tobacco	21.4	13.0	0.00–30.0
Marijuana	5.15	9.48	0.00–30.0
Cocaine	2.04	6.02	0.00–30.0

Note: Individual items from the Traumatic Life Events Scale displayed in the table represent only the ten most frequently endorsed by participants as having occurred throughout their lifetimes.

Table 3

Bivariate relationship among variables (N=204)

Variable Name	1	2	3	4	5	6	7	8	9
1. Spiritual Well-Being (Existential)	1.0								
2. Spiritual Well-Being (Religious)	.47**	1.0							
3. Traumatic Life Events Scale	−.32**	−.04	1.0						
4. Serious Depression†	−.32**	−.11	.31**	1.0					
5. Serious Anxiety†	−.31**	−.05	.37**	.66**	1.0				
6. Alcohol	−.24**	−.16*	.12	.25**	.19**	1.0			
7. Tobacco	−.14*	−.19**	.05	.05	.03	.08	1.0		
8. Marijuana	−.11	−.15*	.02	.04	−.02	.05	.05	1.0	
9. Cocaine	−.22**	−.05	.19*	.07	.15*	.30**	.03	.13	1.0

Note:

* $p < .05$,

** $p < .01$.

† Point Bi-serial (Phi) correlations were computed for associations involving variables scored dichotomously (i.e., 0 = no, 1 = yes). Inhalant, hallucinogen, amphetamine, heroin, other opiate, and sedative use were not included in this analysis due to extremely low frequencies of reported use.

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Table 4

Summary of logistic regression models examining the existential subscale of the SWBS and mental health (N=204)

Variable Name	Depression Exp(B) (95% CI)	Anxiety Exp(B) (95% CI)
Step 1: Demographics		
Age	1.00(0.96–1.05)	1.00(0.95–1.04)
Marital Status	0.57(0.17–1.93)	1.17(0.30–4.59)
Number of Children	1.23(0.98–1.56)	1.31(1.02–1.70)*
Years of Education	0.95(0.76–1.17)	0.08(0.70–1.09)
Employment Status	0.82(0.32–2.09)	1.83(0.66–5.08)
Income	0.82(0.57–1.18)	1.16(0.82–1.65)
Step 2: Main Effects		
Traumatic Life Events	1.03(1.01–1.06)**	1.04(1.02–1.09)**
SWBS Existential	0.46(0.29–0.76)**	0.47(0.28–0.79)**
Step 3: Interaction		
SWBS Existential X Traumatic Life Events	0.98(0.96–1.01)	1.00(0.98–1.03)
−2 Log Likelihood= Nagelkerke R^2=	154.15 0.27	144.48 0.30

Note:

* $p < .05$,

** $p < .01$.

Odds ratios and 95% confidence intervals are displayed for each outcome.

Table 5

Summary of negative binomial regression models examining the existential subscale of the SWBS and drug use (N=204)

Variable Name	Alcohol Use (B, SE) IRR	Tobacco Use (B, SE) IRR	Marijuana Use (B, SE) IRR	Cocaine Use (B, SE) IRR
Demographics				
Age	(0.00, 0.01) 1.00	(0.00, 0.00) 1.00	(−0.06, 0.02) 0.94**	(0.09, 0.03) 1.09**
Marital Status	(−0.23, 0.47) 0.79	(−0.47, 0.30) 0.63	(−0.54, 0.59) 0.58	(−0.94, 0.94) 0.39
Number of Children	(0.05, 0.07) 1.05	(0.06, 0.05) 1.06	(0.18, 0.09) 1.20*	(0.49, 0.17) 1.63**
Years of Education	(0.04, 0.08) 1.04	(−0.12, 0.05) 0.89*	(−0.10, 0.09) 0.90	(0.04, 0.15) 1.04
Employment Status	(0.22, 0.28) 1.25	(0.13, 0.19) 1.14	(−0.39, 0.36) 0.68	(−0.48, 0.60) 0.62
Income	(0.11, 0.09) 1.12	(0.01, 0.07) 1.01	(−0.06, 0.13) 0.94	(0.21, 0.18) 1.23
Criminal Justice Status	(−0.27, 0.13) 0.76*	(0.09, 0.09) 1.09	(−0.70, 0.17) 0.50**	(−0.42, 0.25) 0.66
Main Effects				
Traumatic Life Events	(0.00, 0.01) 1.00	(0.00, 0.00) 1.00	(0.01, 0.01) 1.01	(0.00, 0.02) 1.00
SWB Existential	(−0.54, 0.21) 0.58*	(−0.17, 0.13) 0.84	(−0.42, 0.26) 0.66	(−1.32, 0.43) 0.27**
Interaction				
SWB Existential X Traumatic Life Events	(−0.18, 0.40) 0.84	(0.17, 0.27) 1.19	(0.50, 0.49) 1.65	(1.86, 0.81) 6.42*
Model χ^2 Pseudo R^2	20.72* 0.02	13.24 0.00	27.87** 0.03	36.84** 0.07

Note: IRR = incident rate ratio.

* $p < .05$,

** $p < .01$.

Table 6

Summary of logistic regression models examining the religious subscale of the SWBS and mental health (N=204)

Variable Name	Depression Exp(B) (95% CI)	Anxiety Exp(B) (95% CI)
Demographics		
Age	1.01(0.96–1.04)	0.99(0.95–1.04)
Marital Status	0.55(0.16–1.88)	1.12(0.27–4.59)
Number of Children	1.24(0.98–1.56)	1.29(0.99–1.67)
Years of Education	0.91(0.73–1.14)	0.85(0.67–1.06)
Employment Status	0.78(0.30–2.02)	1.65(0.59–4.64)
Income	0.81(0.56–1.18)	1.12(0.77–1.61)
Criminal Justice Status	0.78(0.50–1.20)	0.92(0.58–1.45)
Main Effects		
Traumatic Life Events	1.04(1.02–1.07)**	1.06(1.03–1.09)**
SWBS Religious	0.60(0.33–1.10)	0.72(0.37–1.37)
Interaction		
SWBS Religious X Traumatic Life Events	0.37(0.08–1.71)	0.18(0.03–1.06)
−2 Log Likelihood= Nagelkerke R^2=	150.26 0.29	135.69 0.35

Note:

* $p < .05$,

** $p < .01$.

Table 7

Summary of negative binomial regression models examining the religious subscale of the SWBS and drug use (N=204)

Variable Name	Alcohol Use (B, SE) IRR	Tobacco Use (B, SE) IRR	Marijuana Use (B, SE) IRR	Cocaine Use (B, SE) IRR
Demographics				
Age	(0.00-, 0.01) 1.00	(0.01, 0.01) 1.01	(−0.06, 0.02) 0.94**	(0.09, 0.03) 1.09**
Marital Status	(−0.48, 0.46) 0.62	(−0.39, 0.30) 0.68	(−0.43, 0.60) 0.65	(0.04, 1.06) 1.04
Number of Children	(0.06, 0.07) 1.06	(0.05, 0.05) 1.05	(0.20, 0.09) 1.22*	(0.26, 0.17) 1.30
Years of Education	(−0.02, 0.08) 0.98	(−0.13, 0.05) 0.88*	(−0.09, 0.10) 0.91	(0.01, 0.16) 1.01
Employment Status	(0.34, 0.28) 1.40	(0.17, 0.19) 1.19	(−0.34, 0.36) 0.71	(−0.16, 0.58) 0.85
Income	(0.11, 0.10) 1.12	(0.02, 0.07) 1.02	(−0.01, 0.14) 0.99	(0.09, 0.21) 1.09
Criminal Justice Status	(−0.31, 0.13) 0.73*	(0.11, 0.09) 1.12	(−0.68, 0.17) 0.51**	(−0.47, 0.27) 0.63*
Main Effects				
Traumatic Life Events	(0.01, 0.01) 1.01	(0.00, 0.01) 1.00	(0.02, 0.01) 1.02	(0.04, 0.02) 1.04
SWBS Religious	(−0.43, 0.24) 0.65	(−0.25, 0.16) 0.79	(−0.58, 0.36) 0.56	(−0.35, 0.61) 0.70*
Interaction				
SWBS Religious X Traumatic Life Events	(−0.16, 0.36) 0.85	(0.07, 0.24) 1.07	(0.17, 0.45) 1.19	(0.15, 0.82) 1.16
Model χ^2 Pseudo R^2	15.29 0.02	14.52 0.01	28.15** 0.03	26.94** 0.05

Note: IRR = incident rate ratio.

* $p < .05$,

** $p < .01$.