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Understanding African American's Religious Beliefs and Organ Donation Intentions

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INTRODUCTION

Organ and tissue transplantation has contributed to marked improvements in the ability to extend and save lives. In particular, transplantation contributes to an improved quality of life and an overall decrease in mortality from certain diseases that would otherwise be debilitating and potentially fatal. Transplantation has become a preferred therapy for individuals suffering from acute and chronic diseases alike, thereby resulting in an exponentially increased demand for donated organs and tissue (UNOS, 2012). However, the greatest challenge for transplantation is the significant disparity in the number of organs available relative to the demand. As of May 2013, nearly 118,000 individuals are waiting for a donor organ in the United States, but the number of transplant procedures performed in a calendar year has never exceeded 30,000 (UNOS, 2012).

Particularly concerning are the effects of the donor shortage among ethnic minorities, who comprise over half of the waiting list candidates (UNOS, 2012). The disparate representation on the transplant waiting list exists partially because minority groups, specifically African Americans, are disproportionately impacted by chronic conditions such as diabetes, heart disease, and hypertension, which often create the need for life-saving transplant (Durand, Decker, & Bruder, 2002; Institute of Medicine, 1999). As a result there is increasing focus on the need for greater commitment to organ and tissue donation among African Americans. For example, in 2011, African Americans represented nearly 30% of all transplantation candidates, while comprising less than 14% of all organ donors, both living and deceased (HRSA, 2011). One of the many reasons for this disparity relates to the significant challenges African American individuals face with regard to organ

histocompatibility (i.e. human leukocyte antigen polymorphism and presence of antibodies) in finding well-matched donors compared to other racial/ethnic groups (Churak, 2005; Institute of Medicine, 1999; Malek, Keys, Kumar, Milford, & Tullius, 2010; Young & Kew, 2005).

Barriers to Donation

Callender and Miles (2010) have identified several barriers that affect rates of deceased organ and tissue donation among African Americans: (1) lack of transplantation awareness, (2) distrust of the medical community, (3) fear of premature declaration of death after signing a donor card, (4) fear of racism, and (5) religious beliefs and misperceptions. Attitudinal barriers based on religious beliefs and fears have been discussed as a key influence on donation behaviors, but have received far less attention in empirical research studies when compared to previously identified barriers (Callendar, Bayton, & Yeager, 1982; Durand et al., 2002). Several studies have indicated that some African Americans oppose organ donation based on their perception that the practice is contrary to their religion's beliefs. Specifically, concerns about maintaining bodily integrity (i.e. wanting to be whole upon entrance to heaven) and fear of disfigurement (e.g. mutilation of the body may prevent the proper burial or funeral) stem from religious-based apprehensions, which have been associated with negative attitudes towards deceased donation (Boulware et al., 2002; Callendar & Miles, 2001) and implicated as barriers to obtaining organ donation commitments (McNamara et al., 1999; Morgan & Cannon, 2003).

Measuring religiosity: unidimensional measures

Findings are inconsistent regarding the relationship between religious involvement/religious beliefs and organ and tissue donation behavior (Chatters, Levin, & Taylor, 1992; Davis & Randhawa, 2006; Gillman, 1999; Levin, Taylor, & Chatters, 1995; Lynch, 2005; Morgan, 2006; Rumsey, Hurford, & Cole, 2003; Wakefield, Reid, & Homewood, 2011). Some studies find no relationship between religious beliefs and deceased donation (Alvaro, Jones, Robles, & Siegel, 2006; Haustein & Sellers, 2004; Yuen, Burton, & P Chiraseveenuprapund, 1998), while others report a negative association (Boulware et al., 2002; Bretkopf, 2006; Rumsey et al., 2003). The difficulty in determining the relationship between these variables has been complicated by a lack of consistency in the measurement of religion. Religious beliefs have most frequently been measured using a one-dimensional construct. For example, Alvaro et al. (2006) used the frequency of religious service attendance as a measure of religiosity and found non-significant findings with respect to pro-donation beliefs. This particular measure of religious service attendance has been used in other studies resulting in similar non-significant findings with the outcome willingness to donate (Haustein & Sellers, 2004; Yuen et al., 1998). In another study, using a sample of university students, religiosity was measured using the item, "How important is religion in your life?" (Bretkopf, 2006). This measure was not significantly associated with donation intentions and was negatively correlated with sharing these intentions with family (Bretkopf, 2006). A similarly worded item assessing, "The importance of religion/spirituality in one's life" was used by Boulware et al. (2002) to explore the relationship between religious/spiritual salience and willingness to donate organs. This study reported a significant negative association between the importance of religion/spirituality and willingness to be a deceased

donor, supporting the idea that religious beliefs are barriers to organ donation. Boulware et al. (2002) continued to suggest that religious-based concerns may be one of the most important barriers influencing African American deceased donation intentions and behaviors. Lastly, Rumsey et al. (2003), using a ten-point religiosity scale in which “1” represented “not religious” and “10” represented “religious,” also found a negative correlation such that higher scores of religiousness coincided with less acceptance of organ donation (Rumsey et al., 2003). These studies illustrate the regularity in which authors use single-item measures that are often one-dimensional as a proxy for the fairly complicated construct of religious beliefs and subjective religiosity. It is plausible that each of these measures may be addressing a different aspect of religiosity and, subsequently, result in inconsistent findings among varying populations.

Measuring religiosity: comprehensive measures

The primary concern with these single-dimension variables is that they are being used as the sole measure to determine a relationship between religion and deceased organ donation beliefs, intentions, and written commitment. When used individually, they lack the depth to adequately address the many nuances of religion, religiosity, and religious beliefs. Thus, in an attempt to be more comprehensive, researchers have proposed broader measures (Chatters et al., 1992; Rohrbaugh & Jessor, 1975; Ryckman, Thornton, Van Den Borne, & Gold, 2004). Levin, Taylor, and Chatters (1995) have proposed a multidimensional model that posits three dimensions of religiosity – subjective (largely focused on behavioral and ideational concepts), organizational (e.g., church attendance), and non-organizational (such as prayer and watching religious programs). This scale has been used with some frequency to assess relationships among religion and multiple health behaviors (Ellison & Taylor, 1996; Frazier, Mintz, & Mobley, 2005); however, it has not been widely studied in the realm of organ donation. A portion of this multidimensional scale, subjective religiosity, was used in a comparative analysis of Caucasian and African American donation attitudes and was found to play no role in the prediction of donation intentions for either ethnic group (Siminoff, Burant, & Ibrahim, 2006). In another attempt to look at a more complex relationship between religion and organ donation, Ryckman et al. (2004) developed two scales inclusive of 8 intrinsic religiosity items (belief that religion is a way of life to which a religious individual ascribes) and 12 extrinsic religiosity items (church attendance and the use of religion for individual/egocentric means). With this measure, Ryckman and colleagues found that intrinsic religiosity was not correlated and extrinsic religiosity was positively correlated with willingness to donate. While findings were intriguing, the study sample lacked diversity in that all 230 participants were Caucasian, predominantly female (77%) undergraduate students (Ryckman et al., 2004).

Few examples exist incorporating the use of more robust religiosity measures among a predominantly African American sample. Morgan and colleagues (2006) are one of the exceptions and have attempted to gain a greater understanding of the intricacies of religious involvement and commitment among African Americans. They created a measure adapted from the work of Rohrbaugh and Jessor (1975) that has been used widely throughout health research (Bjarnason, 2010; Boon, 2004; Morse et al., 2009). This scale operationalized religious beliefs by differentiating religious involvement/commitment into four domains:

ritual (frequency of church attendance and prayer), consequential (how religion influences daily activities), experiential (religious reverence), and ideological (beliefs about God; Rohrbaugh & Jessor, 1975). In a sample of 310 African American adults, Morgan et al. (2006) found significant negative relationships between religiosity, religious subjective norms (perceived view of family and religious leaders), and concerns for bodily integrity (removal of organs), with respect to willingness to sign a donor card among African American adults. Stephenson et al. (2008) attempted to replicate this work with a much broader and ethnically diverse sample; however, findings were contradictory, such that both religiosity and religious norms were not found to be predictors of donation intentions. These differential findings point to the complexity of religious beliefs and concerns, and suggest that different aspects of religion may be more salient and therefore differentially related to organ donation commitment among different populations.

Study purpose

Religion and religious institutions maintain a prominent role in the lives of many African Americans and tend to be a central part of their identity (Arriola, Perryman, Doldren, Warren, & Robinson, 2007; Foster & Smith, 2003). Thus, it is conceivable that important decisions such as making a commitment to deceased organ donation are made under religious influence. While multiple studies have investigated this association, many have used a narrow definition of religiosity and have focused on predominantly Caucasian samples. Thus, this study aims to fill this gap in the literature by describing the complex association of religious beliefs and religious involvement with donation intentions among African Americans. Similar to the work of Morgan et al. (2006), our proposed model will discern the intricacies of religiosity--subjective religiosity, service attendance, religious norms (anti-donation religious stance), spirituality, and two aspects of donation intentions. We assess willingness to serve as an organ donor independently of interest in providing written documentation of donation intentions. Differentiating these outcomes will allow for the possibility that willingness to engage in donation may not translate into written expression due to complex historical, cultural, and social considerations (Russell, Robinson, Thompson, Perryman, & Arriola, 2011). The study is guided by the following research hypotheses:

1. Religious service attendance will be negatively associated with willingness to serve as an organ donor and written expression of donation intentions.
2. Subjective religiosity will be negatively associated with willingness to serve as an organ donor and written expression of donation intentions.
3. Religious norms will be positively associated with willingness to serve as an organ donor and written donation intentions.

METHODS

The present study is part of a larger study, Project ACTS “About Choices in Transplantation and Sharing”, which tested the effectiveness of a culturally-sensitive organ and tissue donation intervention for African American adults. The parent study used a randomized

longitudinal, pre-post design with a control group; data from the current study were collected during the baseline assessment only (March–December 2009).

Sample and Procedure

Using a cross-sectional research design, the current study combined data from both intervention and control groups. To assist in recruitment and delivery of the intervention, a diverse group of 19 community health advocates (CHAs) were hired. The CHAs were selected based on their demographic similarity to the target population and their relatively large social networks (van Olphen et al., 2003). All CHAs participated in a mandatory one-day training that gave a detailed overview of the topic of deceased organ donation/transplantation and the need specific to African Americans, described the project, the research design, participant recruitment, and how to facilitate a group discussion.

Each CHA was tasked with individually recruiting a total of 32 participants from members of their social and professional networks (e.g., churches, professional or community affiliations, family, friends, and associates). For participant recruitment, CHAs were provided with the necessary recruitment materials, including talking points, personalized fliers, and tailored form letters that detailed the study. They were each asked to schedule four data collection group sessions with 5–12 participants in attendance.

Participants were considered eligible if they resided in the metropolitan Atlanta area, self-identified as Black or African American (for the purpose of this study, the term “Black” includes people of African descent, regardless of cultural identification) and were 18 years of age or older. Participants were recruited with the understanding that they were participating in a two-hour, group, health-related discussion and would be compensated \$15 in appreciation for their time. Data collection sessions were held in convenient private locations such as churches, local businesses, community centers, and personal residences of CHAs and participants. At each session, project staff explained what participation entailed and distributed consent forms that detailed the longitudinal nature of the study and adherence to confidentiality with respect to the information that was being collected. Prospective participants read and signed the consent form and independently completed the self-administered baseline questionnaire. This study was conducted with University Institutional Review Board approval.

Measures

The baseline instrument included measures of religious service attendance, subjective religiosity, spirituality, religious norms, donation intentions, and demographic characteristics (e.g., age, gender, race/ethnicity, educational attainment, income, employment status and marital status). Descriptions of each individual scale are provided below.

Religious Service Attendance was measured using a single-item, “How often do you attend religious services during the average month”, originating from the organized religiosity scale of Levin et al. (1995). Response options ranged from 1 (never) to 6 (nearly every day) with higher scores indicating greater frequency of church attendance ($M=4.32$, $SD=1.12$).

Subjective Religiosity was measured using the single item “How religious would you say you are,” originating from the subjective religiosity scale of Levin et al. (1995). Response options ranged from 1 (not religious at all) to 4 (very religious) with higher scores indicating greater religiosity ($M=3.17$, $SD=0.81$). Because this variable was skewed to the right, it was dichotomized to facilitate the analytical process (Steiner, 2002), such that people who identified themselves as being “not at all/not too/fairly religious” were given a score of zero and those who considered themselves to be “very religious” were given a score of one.

Spirituality was an item also adapted from Levin et al. (1995) and was measured in a manner similar to subjective religiosity, “How spiritual would you say you are?” with response options ranging from 1 (not spiritual at all) to 4 (very spiritual) in which higher scores indicated greater spirituality ($M=3.51$, $SD=0.60$). This scale was also greatly skewed to the right thus it was dichotomized such that participants who considered themselves to be “not at all/not too/fairly spiritual” were given a score of zero and those who reported being “very spiritual” were given a score of one.

Religious Norms were captured using the single item “I have been taught that organ donation is against my religion” (DeJong et al., 1998; Rumsey et al., 2003; Sander & Miller, 2005). Response options for this item ranged from 1 (strongly disagree) to 5 (strongly agree). Since a high score reflected a negative donation norm, this item was reverse scored such that higher scores indicated a pro-donation religious stance ($M=4.32$, $SD=0.94$).

Willingness to Serve as an Organ Donor was assessed using two items adapted from Rumsey et al. (2003). These items were: “I am willing to have organs donated after my death” and “I would be willing to donate an organ to a person of a different race than myself”. Response options for this measure ranged from 1 (strongly disagree) to 5 (strongly agree). The total score for both items combined ranged from 2–10, such that a higher score indicated greater willingness to serve as an organ donor ($M=8.12$, $SD=1.84$; $r=.67$, $\alpha=.80$).

Written Expression of Donation Intentions was measured via a dichotomized variable created to represent respondents who had made *either* a written commitment (donor card or driver’s license; $\alpha=.76$, $r=.62$) or no written commitment. This dichotomous variable was derived from two author-developed items, (Russell et al., 2011) representing each stage of readiness (to be designated as a donor on one’s driver’s license and to carry a donor card) on the continuum of behavior change theorized by the Transtheoretical Model and Stages of Change (Prochaska & DiClemente, 1983). The items asked the respondent to select the statement that best described his/her readiness to be designated as a potential organ donor by means of each of two mechanisms (license or donor card). Response options for each item ranged from 1 (precontemplation) to 5 (maintenance) corresponding with the five stages of change measures (driver’s license $M=3.12$, $SD=1.63$; donor card $M=2.18$, $SD=1.31$). Respondents who were in the Precontemplation, Contemplation, or Preparation stages of *both* license and donor card were categorized as not having written expression of intentions and were given a score of zero; those who were in the Action or Maintenance stage of *either* license or donor card were categorized as having written expression of donation intentions and given a score of one.

Demographic Characteristics included measures of ethnicity, age, gender, marital status, educational attainment, employment status, and personal experiences with donation. The personal experiences with donation scale captured whether people were personally impacted by the donation system. Respondents were asked to respond “yes” or “no” to four author-created items such as, “I know someone who donated an organ while living”, and “I know someone who received an organ transplant”. Respondents’ scores represent the number of items to which they responded favorably. Since the scale did not seek to measure a one-dimensional construct, no effort was made to demonstrate internal consistencies of the items.

Data Analyses

Participant demographic characteristics were analyzed using descriptive statistics. Bivariate associations were then examined among the study variables using t-tests, chi-squares, and correlations, depending on how each variable was measured. Next, generalized linear models were used to examine the relationship between each aspect of religiosity (i.e., service attendance, subjective religiosity, and religious norms) and each of the two dependent variables (donation intentions and written expression of donation intentions). The use of generalized linear models was necessary to account for the participant data being nested within CHA. For the dichotomous outcome measuring written expression of donation dichotomous outcome, a logistic regression model was used, and with the willingness to serve as an organ donor continuous outcome, multiple regression was performed. All models adjusted for ethnicity, age, gender, marital status, highest level of education, personal experiences with donation, and the CHA-by-participant interaction. For each of the two dependent variables, we first present a full model that includes all four independent variables then four step-down models that explore the independent relationship of each of the independent variables to the dependent variable. An α of .05 was used to determine statistical significance.

RESULTS

Participant characteristics

Five hundred and eight-five participants enrolled in the study. However, for the purpose of all analyses, only the 505 participants (86%) who identified their religion as Christian were included. The remaining 80 non-Christian participants identified themselves as being of Buddhist (5), Islamic (12), Judaism (1) and other (25) religious faiths; some designated as having no religious affiliation (19) and others did not respond (18). Participants’ mean age was 46 years (see Table 1). They tended to be female (69%) and employed (64%); almost half of participants had completed college (43%). Approximately 40% of participants were married, and about 35% of participants reported that they had some personal experiences with donation. More than half (55%) attended religious services once a month or more, and 85% considered themselves to be fairly or very religious. Two-thirds of participants were willing to donate organs after death, and 46% had expressed their written donation intention via driver’s license or donor card.

Bivariate and multivariate analyses

We started by exploring the bivariate relationships between each aspect of religiosity (i.e., religious service attendance, subjective religiosity, and religious norm), spirituality, and each dependent variable (i.e., willingness to serve as an organ donor and the written expression of donation intentions). When looking at the interrelationship of the three religiosity variables, results indicate that religious service attendance was associated with subjective religiosity, $t(488)=-7.77$, $p<.01$, such that the mean score for attendance was higher among those considered to be more religious (4.81) than those considered to be less religious (4.03). Religious norms were not associated with religious service attendance, $r(501)=.04$, $p>.10$, subjective religiosity, $t(481)=-1.22$, $p>.10$, nor was it associated with the spirituality variable, $t(481)=-.51$, $p>.05$. Spirituality was however associated with subjective religiosity, $t(488)=-14.21$, $p<.001$, such that those who were more religious also considered themselves to be more spiritual (0.91) in comparison to others who had expressed less religious ties (0.35). In addition, service attendance was also associated with greater spirituality, $t(488)=-5.44$, $p<.001$, in that persons who frequently attended religious services reported greater spirituality (4.57) than those who attended religious services less often or not at all (4.03). With respect to each of the dependent variables, religious service attendance was neither associated with willingness to serve as an organ donor, $r(483)=-.05$, $p>.10$, nor written donation intentions, $t(499)=0.42$, $p>.10$. Subjective religiosity was associated with willingness to serve as an organ donor, $t(471)=1.97$, $p<.05$, such that the mean score for willingness to serve as an organ donor for those who considered themselves to be religious (7.9) was lower than for those who did not consider themselves to be religious (8.3). However, subjective religiosity was not associated with written donation intentions, $t(492)=1.26$, $p>.10$. Spirituality was associated with neither willingness to serve as an organ donor, $t(472)=0.17$, $p>.05$, nor written expression of donation intentions, $t(492)=0.02$, $p>.05$. Additionally, stronger religious norms (i.e. participants who had not been taught that organ donation is against their religion) were associated with greater willingness to serve as a an organ donor, $r(474)=.32$, $p<.001$, and written expression of donation intentions, $t(492)=-3.51$, $p<.001$, such that those with written expression of donation reported more positive (pro-donation) religious norms (4.49) than those who had not expressed written donation intentions (4.19).

Next, five multiple regression models were performed with donation intentions as the continuous dependent variable: one with all four independent variables and confounding variables and one with each independent variable (service attendance, subjective religiosity spirituality, and religious norms) and confounding variables only. Results indicate that only religious norms and subjective religiosity remained significantly positively associated with willingness to serve as an organ donor in the full model with all religiosity variables included ($p<.001$; see Table 2). The step-down models also indicate that subjective religiosity ($p<.05$) and religious norms ($p<.001$) were significantly associated with willingness to serve as an organ donor in the models in which they were the sole study variable of interest.

The same analyses were performed in a logistic model, with written expression of donation intentions as the dependent variable. However, these results indicate that only religious

norms were significantly negatively associated with the written expression of donation intentions ($p < .001$; see Table 3).

DISCUSSION

In this study we explored the relationship between spirituality, religiosity--religious service attendance, subjective religiosity, religious norms--- and deceased organ donation intentions. Results of this study did not support the hypotheses with regards to religious service attendance, as this variable was neither associated with willingness to serve as an organ donor nor with written expression of donation intentions in the full model. Subjective religiosity was inversely associated with willingness to serve as an organ donor but not associated with the written expression of donation intentions. In addition, the hypothesis that religious norms would be positively associated with both dependent variables was partially supported such that association was positive with willingness to donate and negative with the written expression of donation intentions. Among the religiosity variables, religious norms were found to be the most consistent and powerful correlate of both willingness to donate and written expression of donation intentions (driver's license or donor card).

Religious Service Attendance

Though often used as a measure of religiosity, our findings with religious service attendance, willingness to serve as an organ donor and written donation intentions do not support a consistent relationship among these variables. Overall, a single measure of the frequency in which someone attends a religious institution misses key aspects of one's religious beliefs. Oftentimes when this measure has been used, it is an attempt to represent a far more complex measure, such as religious beliefs and attitudes (Alvaro et al., 2006; Haustein & Sellers, 2004; Yuen et al., 1998). While it seems inherent that an increase in contact may generate attitudes in greater alignment with religious values, or that religious values may increase contact, this measure is a poor proxy because religious beliefs are developed from many complex interactions.

Subjective Religiosity

Similar to the work of Sanner (1994), Minniefield et al. (2001), and Rumsey et al. (2003), our expectation was to find an inverse relationship between subjective religiosity and organ donation intentions (willingness to donate and written expression of donation intentions), however this was not the case. There was a negative association found with respect to willingness to serve as an organ donor, such that those who considered themselves to be religious were less willing to serve as an organ donor. In addition, there was no relationship found regarding the written expression of donation intentions, meaning subjective religiosity was not a factor when designating oneself as an organ donor via license or donor card. This original religiosity measure was adapted from the multidimensional model of Levin, Taylor and Chatters (1995) and had previously been used in the assessment of deceased organ donation decision making (Siminoff et al., 2006). Our differential findings were not surprising given that the studies reporting significant findings with both measures were not based on a predominantly African American population (Rumsey et al., 2003; Sanner, 1994; Siminoff et al., 2006). It may be that for our population, when someone is introduced to the

topic of organ donation religious reasons can act as a buffer to justify any initial resistance to the topic. But, as someone becomes more educated about organ donation and is faced with making an actual decision with written documentation, religious reasons no longer act as a barrier. How people view themselves religiously does not necessarily align with their religious beliefs regarding organ donation. Given that the measure of religiosity is subjective, its definition alone is nebulous and subject to personal interpretation. It is a self-perception about one's religiousness thus, may have been perceived to be equivalent to religious attendance for some or a measure of non-organized expressions such as prayer or bible study, to others. To this extent, a measurement of religiosity without definition in this population is problematic. It is plausible that a more objective or concrete definition of this measure could yield a completely different finding.

Spirituality

Though commonly associated with religiosity, spirituality was neither associated with willingness to serve as an organ donor nor the written expression of donation intentions. This finding was somewhat surprising as literature tends to couple religious teachings and spiritual practices (Boulware et al., 2002). A measure of spirituality as a standalone variable has not commonly been used to assess donation intentions, however the assumption would suggest that spirituality and religiosity would be in alignment. While our findings indicate that spirituality was positively associated with both service attendance and subjective religiosity, more work is needed to explore its relationship to donation intentions.

Religious Norms

Our findings suggest that normative beliefs are most strongly associated with donation decision making. While results show significant findings for both willingness to donate and the written expression of donation, the direction of the association with respect to religious norms varies by outcome.

Individuals who had been taught that donation was against their religion were less willing to serve as donors. This finding is consistent with research that shows a negative relationship between religious beliefs and organ donation. Those who consider themselves to be religious rely heavily on the beliefs of their faith when making important and difficult decisions (Batson, Schroenrade, & Ventis, 1993). African Americans in particular tend to view religion as something that is central to their personal identity, influencing their daily thoughts and feelings (Blaine & Eshleman, 1998). When making important decisions related to matters of life and death such as organ donation, judgments are likely to be heavily guided by religious norms about mortality. Because organ donation is not a topic that is readily discussed among many faiths, oftentimes a religion's position statement is unknown and thus replaced by myths and misperceptions (Lam & McCullough, 2000; Lynch, 2005; Ryckman et al., 2004). Some of these concerns among African Americans include bodily integrity, the uncertainty of impeding resurrection of the body, and the lack of clarity about how death is determined (Gillman, 1999; Radecki & Jaccard, 1997). Because of these uncertainties and lack of information, people may defer to what they perceive as the stance of their religion and reject the idea of organ donation (Benghu & Uys, 2004). However,

Christianity and many faiths not only support donation but also have supportive policy statements about it (Gallagher, 1998 ; Oliver, Woywodt, Ahmed, & Saif, 2010).

It may also be that those who are unwilling to be organ donors instead choose to believe that their faith is against it and alter their conflicting attitudes to create consistency and balance with their beliefs (Festinger, 1957). With respect to organ donation, it is equally plausible that conflicting beliefs are altered to be in greater alignment with one's personal religious belief system.

However, individuals who had not been taught that donation was against their religion were also less willing to document their decision via written expression (driver's license or donor card). The negative relationship found between religious norms and written expression of donation intentions may seem counterintuitive. In this study, we purposefully measured conceptual donation *intentions* from reports of *actual* written documentation of donor status as research has shown that willingness does not necessarily translate into written expression of these intentions (Russell et al., 2011; Siminoff et al., 2006). The concept of religious norms varies in the way that it is associated with donation intentions because willingness is philosophically different from creating a written record. Because of historical, cultural and social complexities, documenting donation intentions may require a higher level of trust of the overall healthcare system among African Americans. Thus what people commit to and what they actually write on paper may be completely different.

The manner in which religion and religiosity have been measured has given rise to confusion and inconsistent findings (Levin et al., 1995; Morgan, 2006; Stephenson et al., 2008). These differential findings underscore the importance of studying different aspects of religion separately in addition to studying donation intentions independent from documenting written commitment. Because religiosity is so intertwined with religious attendance, perceived religiosity, and religious beliefs, many have experienced difficulties in operationalizing the exact attributes that are most influential with donation decision making. Without a clear understanding, "religion" as a whole has been cited as being a major barrier to deceased organ donation among African Americans. This study has attempted to disentangle the complexity of religion and create an understanding of the related attributes by differentiating between religiosity, religious participation, religious norms and their association with donation intentions.

Limitations

There are several issues that may limit the interpretation and application of these findings. Among methodological limitations is the fact that this research is a part of a larger study testing the effectiveness of a culturally-sensitive donation intervention designed for African American adults. Thus analyses regarding religious beliefs only consist of available variables from the primary dataset. In particular, we were not able to determine the specific Christian denomination of participants. Additionally, selection bias may limit findings as participants were recruited from the personal social networks of CHAs and self-selected to take part in this study. Participants also completed a self-administered survey and therefore may have overestimated or underestimated their responses related to donation and religious beliefs/attitudes (i.e., what participants said they were likely to do in this survey may differ

from what they would actually do in real life). Because of the cross-sectional nature of this study in the ascertainment of donation intentions, directionality is impossible to determine. It may be that one's religious beliefs inform their organ donation stance or those who have favorable/unfavorable attitudes about organ donation shape their religious views to support this position. In addition, the wording of the religious norms variable is open to further interpretation as to whether a positive religious norm translates to a pro-donation stance or speaks to the possibility that persons haven't been taught anything at all with respects to donation.

Several characteristics also limit the generalizability of these results. Firstly, the study utilized a convenience sample of African American participants within the southeastern United States who designated themselves as Christian. Secondly, participants were recruited from personal social networks thus, there may be an increased likelihood that participants were fairly homogenous with respect to their thoughts and feelings regarding organ donation. Additionally, the overrepresentation of women and participants in a higher income bracket within this sample may have influenced the findings.

Conclusions

Despite limitations, our research expands current understandings of the relationship between religious beliefs, religious involvement, and deceased organ donation intentions. This study's findings indicate that religious norms have the strongest association with donation decision making. While the official position of most Christian religions support organ donation, there is a disconnect between what is truth from a religious doctrine perspective and what is perceived by parishioners. This suggests the need for clear communication with parishioners about their religion's stance on donation. Because religious leaders interact with their parishioners through sermons, pastoral counseling, and Bible study classes; they have the unique opportunity to clarify misperceptions and positively influence views on donation (Arriola et al., 2007). Once incorrect beliefs are replaced with the correct information, perhaps more widespread support for donation among African Americans can be given. If, in fact, discomfort with organ donation is the driving mechanism causing people to alter their perceptions regarding what their denomination supports, intervention should focus on the actual sources of their discomfort, rather than religion as the issue. Equally, if distrust in the healthcare system is the overarching influential factor influencing donation attitudes and behavior, a concerted effort needs to be placed to continuously address these apprehensions. While this study used a population of African American Christians, the findings with respect to religious norms and donation intentions may not hold true for other denominations and religious faiths. This study offers new direction for the development and delivery of effective donation education efforts targeting African American parishioners and possibly other communities of color.

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Biography

Dana Robinson is a master's level Behavioral Scientist who has worked in the field of organ and tissue donation education for more than 8 years at the Rollins School of Public Health of Emory University. She has served as Project Director for three federally funded research grants that have focused on educating African Americans and defying the myths surrounding organ and tissue donation. She is a published author and co-author of several manuscripts as well as co-author of a book chapter addressing organ donation and transplantation among African Americans in the 3rd edition of *Health Issues in the Black Community*.

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Table 1Demographic Characteristics of Study Participants ($N=505$).

Characteristic	<i>N</i>	%
Age	492	
Mean (range)	45.8 (19–94)	
Female	349	69.1
Race/Ethnicity		
Black/African American	436	87.9
Black/Other Ethnicities	60	12.1
Educational Attainment		
Less than high school	22	4.5
High school graduate or GED	186	37.7
Completed college	214	43.4
Professional degree	71	14.4
Income		
\$19,999	97	22.2
\$20,00–39,999	120	27.4
\$40,000–59,999	92	21.0
\$60,000	129	29.4
Employment status		
Working part or full time	314	63.7
Not working	179	36.3
Marital status		
Married	200	40.6
Not married	193	59.4
Personal Experiences with Donation		
Yes	177	35.1
No	327	64.9
Religious Service Attendance		
Less than once a year	34	6.8
A few times a year	64	12.8
A few times a month	126	25.1
Once a week or more	277	55.3
Subjective Religiosity		
Not at all/not too/fairly religious	72	14.6
Very religious	422	85.4
Spirituality		
Not at all/not too/fairly spiritual	21	4.3
Very spiritual	473	95.7
Religious Norms		
Prodonation stance	416	84.2
Neural stance	56	11.3

Characteristic	<i>N</i>	%
Belief that donation is against religion	22	0.5
Written expression of donation intentions		
Yes	221	43.8
No	284	56.2

Note. Due to missing data, (N) may not total 505.

Willingness to donate regressed on religious service attendance, subjective religiosity, and support for religious norms related to organ donation (N=505).

Table 2

Study Variable	Unstandardized Regression Coefficient (B)				
	Model 1	Model 2	Model 3	Model 4	Model 5
Service Attendance	-.09	-.14	-	-	-
Subjective Religiosity	-.42*	-	-.35*	-	-
Spirituality	.10			-.10	-
Religious Norms	.58***	-	-	-	.56***
Likelihood Ratio Chi-Square	62.64***	22.55**	22.53**	18.95*	55.61***
df	11	8	8	8	8

Note. Models are adjusted for ethnicity, age, gender, marital status, highest level of education, personal experiences with donation, and the community outreach worker by participant interaction.

Model 1: Religious service attendance + Subjective religiosity + Spirituality + Religious Norms + control variables

Model 2: Religious service attendance + control variables

Model 3: Subjective religiosity + control variables

Model 4: Spirituality + control variables

Model 5: Religious norms + control variables

* p .05;

** p .01;

*** p .001.

Written expression of donation intentions regressed on religious service attendance, subjective religiosity, and support for religious norms related to organ donation (N=505).

Table 3

Study Variable	Unstandardized Regression Coefficient (B)				
	Model 1	Model 2	Model 3	Model 4	Model 5
Service Attendance	-.02	.02	-	-	.02
Subjective Religiosity	-.38	-	-.24	-	.37
Subjective Spirituality	.12	-	-	-.03	-
Religious Norms	-.38**	-	-	-	-.36**
Likelihood Ratio Chi-Square	40.88***	28.45	29.75***	28.48***	38.54***
df	11	8	8	8	8

Note. Models are adjusted for ethnicity, age, gender, marital status, highest level of education, personal experiences with donation, and the community outreach worker by participant interaction.

Model 1: Religious service attendance + Subjective religiosity + Spirituality + Religious Norms + control variables

Model 2: Religious service attendance + control variables

Model 3: Subjective religiosity + control variables

Model 4: Spirituality + control variables

Model 5: Religious norms + control variables

* p .05;
** p .01;
*** p .001.