RELIGIOUS PRACTICES AND MENTAL HEALTH AMONG OLDER ADULTS IN THE US*

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INTRODUCTION

Over the past two decades, a burgeoning research literature has documented apparently salutary effects of religious involvement on a broad array of mental health outcomes, ranging from indicators of subjective well-being (e.g., life satisfaction) to measures of dysphoria (e.g., psychological distress), to diagnostic indicators of psychiatric illness (e.g., major depression, generalized anxiety disorder) (Koenig, McCullough, & Larson, 2001; Smith, McCullough, & Poll, 2003). Researchers in this area have conceptualized and measured religion in many different ways, and the field has benefited from a number of new approaches to gauging health-relevant domains of religiousness and spirituality (Hill & Pargament, 2003; Idler et al., 2003). However, by far the most common approach in this literature has centered on self-reported religious behaviors. Investigators typically distinguish between aspects of organizational religious involvement (e.g., frequency of attendance at religious services) and non-organizational activities (e.g., frequency of private prayer, meditation).

Although there is much to be learned from studies linking religious practices and mental health, this body of work is characterized by several significant limitations. First, researchers have relied heavily on cross-sectional data, which --while useful for identifying patterns and correlations-- preclude the establishment of causal ordering among variables. Additional studies using prospective (longitudinal) designs are needed in order to clarify these issues. Second, there are disagreements over how best to measure religious behaviors, and over which specific behaviors are most closely linked with mental health outcomes. This problem has been underscored by studies suggesting that individuals may exaggerate the frequency of their attendance at religious services when responding to surveys (Hadaway, Marler, & Chaves, 1993; Presser & Stinson, 1998). Third, there is a lack of consensus over which mental health outcomes are most likely to be impacted by religiousness. Although researchers have tended to emphasize outcomes such as negative affect (e.g., distress, depression), mental health involves more than an absence of symptoms of dysphoria, and a parallel tradition of work has focused on positive mental health and cognitive indicators of well-being (e.g., life satisfaction)

(Ellison, 1991; Hackney & Sanders, 2003). Fourth, until recently few investigators carefully explored subgroup variations in the relationships bteween religion (including religious behaviors) and mental health. An emerging body of work on older adults in the US reports that several facets of religious involvement are more predictive of health and well-being among lower-SES persons, and among African Americans as compared with non-Hispanic whites (e.g,. Krause, 2008). However, considerably more work is needed to clarify these patterns. Finally, despite advances in theory regarding religion and health, surprisingly few empirical studies have documented mechanisms or pathways via which religious practices may foster mental health (George, Ellison, & Larson, 2002).

Our study contributes to the literature by addressing each of these issues. After outlining a series of theoretical reasons to anticipate associations between religious practices and favorable mental health outcomes, I test relevant hypotheses using data from the Religion, Aging, and Health project, a nationwide survey of older adults containing an oversample of African Americans. Six facets of mental health are considered, ranging from distress and death anxiety to life satisfaction and optimism. The baseline data (2001) are used to estimate cross-sectional patterns, while longitudinal relationships are estimated with data from the second wave of the survey (2004). Race differences in the links between religion and mental health are considered carefully, as are several hypothesized mediators, i.e., constructs (e.g., positive religious coping, congregational support) that have been thought to explain observed effects of religious practices. The concluding section of the paper discusses the implications of several main findings, identifies study limitations, and offers promising directions for future research on religious practices and mental health.

THEORETICAL AND EMPIRICAL BACKGROUND

Organizational Religious Practices and Mental Health

In an exhaustive review of the literature provided in the Handbook of Religion and Health (2001), Koenig and colleague identify literally hundreds of empirical studies that report associations between some measure(s) of organizational religious involvement and some dimension(s) of mental health. These studies typically focus on the self-reported frequency of attendance at worship services, although a number of analyses also consider additional forms of organized religious participation, such as involvement in religious education or Bible study groups, prayer groups or other types of small group experiences, as well as church-based service initiatives, social events, or other programs (e.g., Levin, Taylor, & Chatters, 1995).

Why might we expect for organizational religiousness to be linked with desirable mental health outcomes? To begin with, religious congregations provide fertile ground for social integration and friendship formation, because these organizations bring together persons (a) with shared beliefs, interests, and worldviews, (b) who participate by choice, (c) who do so on a regular basis, usually with a number of opportunities for involvement within any given week, (d) for activities that are imbued with special (i.e., sacred) meaning (Bradley, 1995; Ellison & George, 1994). In addition, congregations offer vibrant systems of social exchange and support. Individuals can obtain a range of types of assistance, including tangible aid (i.e., goods and services), socioemotional support (i.e., comfort and companionship), and information (e.g., about services or opportunities). These types of assistance can be provided on a casual basis by fellow members, or through more formal programs aimed at serving particular

segments of the congregation (Krause, 2008). Of course, it would be possible to obtain these types of support from other sources outside the congregation (e.g., neighbors, coworkers, secular groups). But faith communities can also deliver spiritual support. This uniquely religious form of support may consist of (a) guidance that assists fellow believers in living out the precepts of their religion more faithfully and successfully, or (b) advice on how to apply religious ideas to daily life (Krause et al., 2001).

Another way in which organizational religious involvement may foster mental health is by shaping favorable individual self-perceptions (Ellison, 1993; Krause & Tran, 1989; Krause, 1995). For example, individual self-esteem (or the global sense of self-worth) is influenced partly through reflected appraisals. Based on seminal ideas of Cooley and Mead concerning the "looking glass self," reflected appraisals suggest that we come to see ourselves in the way that we believe others perceive us. This is true even if we misconstrue others' perceptions of us. Religious congregations may promote positive reflected appraisals due to several widespread characteristics: (a) shared norms of kindness and civility; (b) distinctive rhetorical expressions of caring and solidarity; and (c) alternative criteria for evaluating the worth of individuals (e.g., morality and faith, rather than wealth or status). In addition, congregational involvement may provide opportunities for individuals to cultivate learned competencies and skills, such as working and socializing with others, public speaking, teaching others or organizing projects, which may lead to enhanced self-confidence and feelings of personal mastery, or the ability to negotiate one's environment and influence daily affairs. Such favorable self-perceptions may constitute indicators of mental health in their own right, and they may also promote emotional resilience in the face of stressors or challenges, reducing the risk of depression or other problems (Ellison, 1993).

Many individuals may experience worship services themselves as emotionally uplifting and spiritually satisfying. Believers may be touched by many different aspects of worship, very few of which have been the focus of careful empirical research (Gritzmacher, Bolton, & Dana, 1988; Idler & Kasl, 1997). Worship services vary widely content and style; these differences are apparent in theological message, preaching style, emotionalism, sacramentalism, musical style, and many other dimensions. In addition, congregations vary in physical structure and appearance, which may affect personal experiences in ways that are poorly understood. Nevertheless, religious services unite many diverse individuals in a common purpose, focusing their attention on the sacred. For many persons, collective worship can trigger powerful memories, thoughts, and emotions, resulting in a renewed faith and sense of purpose. Participation in such activities with others may build excitement and solidarity among members, and may also affirm and strengthen the religious meaning systems, or "plausibility structures," of individuals (Berger, 1967).

Non-Organizational Practices and Psychosocial Outcomes

In addition to participation in religious services or other congregational pursuits, it is also widely recognized that non-organizational religious practices may promote mental health. Although researchers have conceptualized and measured non-organizational religiousness in many different ways, perhaps the most common practice in this domain is prayer (outside religious services) (Bradshaw, Ellison, & Flannelly, 2008; Pollner, 1989; Poloma & Gallup, 1991). Other practices that are sometimes considered in this literature include meditation, Bible study and reading of religious materials, and consumption of religious media (usually radio and TV programs) (e.g., Levin et al., 1995). Why might non-organizational pursuits lead to enhanced mental health? First,

personal devotional activities such as prayer may be experienced as direct communication with the divine, and may be practiced as part of an ongoing dialogue or relationship with God (Krause, 2004; Levin, 2004). Some observers have noted that God --as portrayed within the Christian tradition-- may be an ideal attachment figure, and believers may experience close, secure attachment with God, who is sometimes experienced as a member of one's personal network (Bradshaw et al., 2008; Kirkpatrick, 2004). Many believers seek to engage God regularly through prayer for insight, guidance, and solace.

Other mechanisms may also underlie an association between non-organizational practices and mental health. For example, prayer and other private practices may assist individuals in cultivating a spiritual narrative and meaning system, via which individuals may gain a sense of coherence and orderliness (Idler & George, 1998). Religious frameworks may be helpful for individuals in interpreting and assigning significance of the events of their lives --daily affairs, personal challenges, and major traumas alike (Pargament et al., 1998, 2000). Further, many of these non-organizational practices may involve (indeed, may require) establishing routines of discipline, e.g., setting aside regular times of the day or night for prayer, meditation, or Bible study. In pursuing these activities, believers may seek quiet solitude, without distractions, and they may experience states of physiological as well as mental calm (e.g., lowered somatic arousal). These factors may also contribute to mental health. Moreover, through prayer and other devotional pursuits may cultivate a framework within which they can interpret and assign meaning to daily events, challenges, and traumas. This facet of the "plausibility structure" can reduce frustration and anxiety, affording individuals positive coping strategies in times of difficulty (Berger, 1967; Ellison, 1991).

Moreover, through prayer (perhaps augmented by Bible reading or other devotional acts) individuals may perceive that they enjoy a unique relationship with the most powerful entity in the universe, who loves and cares for them and intervenes directly in their lives. This perspective may confer valuable feelings of self-worth and secondary control (Ellison, 1993; Krause & Tran, 1989). Although individuals themselves may not directly control the events that happen to them, it may be quite reassuring to believe that God is at the helm of one's life, and one is working directly with God to achieve favorable outcomes. Devout persons who perceive this strong sense of God's love and control may exhibit feelings of (indirect) mastery and confidence, as well as considerable optimism about the future. For the faithful, eternal life, as well as worldly affairs, rests in the hands of God (Ellison et al., 2001). For all of these reasons, non-organizational religious activities may diminish feelings of distress and anxiety (even over death), and may contribute to cognitive and emotional well-being.

To date, most discussions of non-organizational religious practices and mental health have centered on prayer, meditation, and scriptural study. However, one additional aspect of non-organizational behavior that is meaningful to many persons involves listening to religious music. Although a wealth of evidence over the years has indicated that exposure to various types of music can affect emotional states (Juslin & Sloboda, 2001; Krumhansl, 1997; Panksepp, 1995; Rickard, 2004), surprisingly few researchers have explored the influence of specifically religious musical forms (Hill & Argyle, 1997; Miller & Strongman, 2002). Such an analysis is timely, indeed long overdue. In focus groups and other qualitative studies, many persons --including older adults-- emphasize the importance of music, as a source of relaxation and stimulation, and as a means of expressing their spirituality (Hays & Minichiello, 2005; Lowis & Hughes, 1997). Scholars and religious practitioners have written at some length about

the capacity of religious music to stir powerful emotions, trigger memories, and cue spiritual experiences (e.g., Jourdain, 1998; Meyer, 1956). Of course, there are innumerable varieties of religious music --e.g., ranging from Gregorian chants and classical composers, to hymns from diverse traditions, and from Black gospel and bluegrass gospel, to contemporary Christian pop music. Nevertheless, it could be valuable to know whether persons who listen to religious music regularly appear to enjoy psychosocial benefits, over and above those associated with other types of (organizational and non-organizational) religious practices.

The Role of Race Differences

To this point we have outlined a series of reasons why various religious practices might be linked with mental health. However, there are also reasons to expect that any such relationships will vary across subgroups within the overall population of US elders. To be sure, there are a number of possible sources of such variation. One of the most important of these, however, is race; in particular, one expects that African Americans may derive greater and more consistent psychosocial benefits from religious involvement than their (non-Hispanic) white counterparts. There are several reasons for this view. First, by virtually any conventional indicator of religious behavior or belief, African Americans tend to be more religious. Indeed, this overall pattern of race differences is one of the most consistent and durable generalizations about the distribution of religiousness within the US adult population (Taylor, Chatters, & Levin, 2004). Second, a wealth of evidence reveals that religious institutions, beliefs, and practices have long occupied a distinctive position in the individual and collective lives of African Americans. The Black Church has been a core institution throughout African American history, perhaps the major extra-familial institution that has been organized and operated by and for African Americans, usually without white influence or control (Ellison & Sherkat, 1995; Lincoln & Mamiya, 1990; Taylor et al., 2004).

Third, as many commentators have observed, dominant strands of African American religious belief have emphasized a distinctly practical theology. Central to mainstream Black theology has been the notion of an active, personal God who intervenes in the lives of persons and nations, healing hurts, fueling hopes, and righting wrongs (Ellison et al., 2008). For many African Americans, God is a force for beneficence and mercy, as well as justice, a "God of second chances" (Carter, 1976; Lincoln & Mamiya, 1990; Paris, 1995). Fourth, several studies have discussed the distinctly relational nature of African American spirituality, which infuses and strengthens bonds between God and the individual, among believers, within families, and extending into the wider community e.g., Mattis & Jagers, 2001; Taylor et al., 2004). Fifth, it has been widely remarked that the worship styles practiced in many (though certainly not all) Black churches have distinctive features, with potentially therapeutic implications themselves. These religious services are often characterized by dynamic music, joyous singing, shout-and-response preaching styles, physical movement (dancing, raising of hands), and other practices that are thought to: (a) allow for the controlled expression and release of negative emotions, such as grief or anger; (b) the reduction of tensions that may be brought on by stressful environmental conditions; and (c) the collective emotional catharsis and onset of positive feelings among churchgoers (Gilkes, 1980; Griffith et al., 1984).

A growing body of literature reports linkages between religiousness and the health and well-being of older adults that are congruent with these arguments. For example, several studies reveal that, compared to white elders from otherwise similar backgrounds, older African Americans exhibit higher levels of

(a) most forms of religious practice, organizational and non-organizational; (b) nearly all types of church-based social support, including provided, received, and anticipated support, and support from clergy members; (c) religiously-inspired virtues such as forgiveness and gratitude; and (d) religious meaning. Moreover, according to recent published reports, African American elders consistently derive stronger mental and physical health benefits from these aspects of religiousness and spirituality than older whites (Krause, 2003, 2006a, 2008).

The Present Study

The foregoing discussion suggests several broad expectations that will guide the remainder of our study. Briefly, with respect to the main effects of religious practices on mental health, we expect to find salutary effects of both organizational and non-organizational practices. Although we will explore a number of indicators of these constructs, based on prior research we anticipate that the frequency of religious attendance will emerge as the most salient measure of organizational religiousness, while frequency of prayer will be the strongest predictor of mental health among the non-organizational practices. Given the dearth of empirical evidence on the effects of listening to religious music, we will also focus particular attention on this facet of non-organizational religious behavior. In addition, we anticipate that the estimated net effects of religious practices will vary by race; in particular, organizational religious practices (notably attendance at worship services) will be associated with greater psychosocial benefits for older African Americans than for white elders.

As we noted, researchers have identified a number of promising pathways or mechanisms, via which religious practices might influence psychosocial outcomes. We will investigate several of these directly, with the following expectations. First, the effects of organizational practices, chiefly attendance at services, will be largely or entirely mediated by aspects of congregational social support: emotional assistance received, anticipated support, and spiritual support received from church members. Second, the effcts of non-organizational practices, mainly prayer (and perhaps listening to religious music), will be largely or entirely mediated by: (a) the use of positive religious coping practices for dealing with personal problems; (b) feelings of closeness to God; or (c) the sense of divine control, or the perception that God is exerting control in one's life.

DATA

Data for this paper come from a major nationwide longitudinal survey of oler whites and older African Americans, the Religion, Aging, and Health project (Neal Krause, Principal Investigator). The study population was defined as all household residents who were either African American or white, non-institutionalized, English-speaking, and at least 65 years old. Residents of Alaska and Hawaii were also excluded from the definition of the study population, as were adherents or practitioners of non-Christian religious traditions. The latter exclusion was deemed necessary due to the nature of the data being collected, i.e., the strong focus on religion and health in late life, and the difficulties of developing items on religiousness and spirituality that would apply to the full spectrum of faith traditions.

A multi-step process was used to sample individuals from the Medicare Beneficiary list maintained by the Centers for Medicare and Medicaid Services.

Baseline interviews were conducted in-person during 2001, by Harris Interactive (New York). A total of 1,500 interviews were completed; oversampling of African American elders yielded a baseline sample that was roughly evenly divided between African Americans and whites, with an overall response rate of 62%. The wave 2 survey was completed in 2004, with a total of 1,024 of the original 1,500 respondents re-interviewed successfully. Case loss between waves 1 and 2 resulted from the following factors: mortality (n=208), relocation to a nursing home (n=11), too ill to complete an interview (n=70), could not be located (n=112), and refusal to participate (n=75). Not counting persons who left the study population as it was originally defined, i.e., those who died or were institutionalized, the wave 2 re-interview rate was 80% (Krause, 2006b).

MEASURES

Dependent Variables

Psychological Distress. Distress was measured via responses to 8 items, tapping depressed affect and somatic symptoms. Each respondent was asked how often s/he experienced the following: (a) I felt I could not shake off the blues, even with the help of my family and friends. (b) I felt depressed. (c) I had crying spells. (d) I felt sad. (e) I did not feel like eating, my appetite was poor. (f) I felt that everything I did was an effort. (g) My sleep was restless. (h) I could not get going. Response categories ranged from (1) rarely or none of the time to (4) most or all of the time, and responses to these items were averaged to calculate the distress index (T1 alpha=.87, T2 alpha=.88).

Death anxiety. To measure death anxiety, respondents were queried about their (dis)agreement with each of the following statements: (a) I find it hard to face up to the fact that I will die. (b) Thinking about death makes me uneasy. (c) I do not feel prepared to face my death. (d) I am disturbed by the shortness of life. Response categories ranged from (1) strongly disagree to (4) strongly agree, and responses to these items were averaged to create an index of death anxiety (T1 alpha=.85, T2 alpha=.89).

Life Satisfaction. Satisfaction with life was measured in terms of responses to four items. For three of these items, respondents were asked about their (dis)agreement with the following statements: (a) These are the best years of my life. (b) As I look back on my life, I am fairly well satisfied. (c) I would not change the past even if I could. Response categories ranged from (1) strongly disagree to (4) strongly agree. A fourth item asked: Now please think about your life as a whole. How satisfied are you with it? Responses to this item were coded (1) not very satisfied or not satisfied at all to (4) completely satisfied. The composite measure of life satisfaction was calculated as the average response to these four items (T1 alpha=.75, T2 alpha=.84).

Optimism. Respondents' optimism was determined via the level of (dis)agreement with each of the following statements: (a) I always look on the bright side of things. (b) I'm optimistic about my future. (c) In uncertain times I usually expect the best. (d) I feel confident the rest of my life will turn out well. Responses ranged from 1 (strongly disagree) to 4 (strongly agree), with the mean score on these items used as the measure of optimism (T1 alpha=.86, T2 alpha=.89).

Self-Esteem. Individual self-esteem, or the sense of intrinsic moral self-worth, was determined by (dis)agreement with three statements: (a) I am a person of worth, at least on an equal plane with others. (b) I feel I have a number of

good qualities. (c) I take a positive attitude toward myself. Answers ranged from 1 (strongly disagree) to 4 (strongly agree), and the overall self-esteem score is calculated as the mean response to these items (T1 alpha=.90, T2 alpha=.91).

Personal mastery. Finally, personal mastery is gauged in terms of responses to the following statements: (a) I have a lot of influence over most things that happen in my life. (b) I can do just about anything I set my mind to. (c) When I make plans, I'm almost certain to make them work. (d) When I encounter problems, I don't give up until I solve them. Responses are coded from 1 (strongly disagree) to 4 (strongly agree), and the mean score is used as the measure of personal mastery (T1 alpha=.85, T1 alpha=.86).

Religious Practices

Organizational Religious Practices. The RAH dataset contains an unusually rich array of information about respondents' religious behaviors, including the degree and types of involvement in religious congregations and other groups. Respondents were asked how often they: (a) attend religious services; (b) attend adult Sunday School or Bible study groups; and (c) participate in prayer groups that are not part of regular worship services or Bible study groups? Response categories for each of these items ranged from (1) never to 9 (several times a week). In preliminary analyses, these items were examined individually and as a composite measure of organizational religiousness, to gauge associations with mental health outcomes. On the basis of bivariate and multivariate analyses it was determined that a single item tapping religious attendance was the most promising indicator of organizational religious practice, and so this was retained for subsequent analyses. In addition, each person was asked whether s/he occupied any of the following leadership positions within a church: deacon, elder, lay pastor, Church Mother, chair of a church committee, choir director, or regular Sunday School teacher. Preliminary analyses revealed no clear association between holding a leadership role in the congregation and mental health, nor did such leadership role(s) amplify the association between religious attendance and any of our mental health outcomes.

Non-Organizational Religious Practices. Respondents were also asked a number of questions concerning non-organizational religious behaviors, i.e., those that occur in private, at home, or in other non-institutional settings. Specific religious practices included: (a) prayer; (b) reading the Bible; (c) watching religious services on TV or listening to them on radio; (d) watching or listening to religious talk shows or shows that report the news from a Christian perspective; (e) reading religious literature other than the Bible; (f) reading religious newsletters, magazines, or church bulletins; and (g) listening to religious music. In preliminary analyses, these analyses were examined individually and as a composite measure of non-organizational religiousness to determine their associations with mental health. These analyses revealed that two items were more promising than the others (or the composite), and these items --on the frequency of prayer and the frequency of listening to religious music-- were retained for our final models. An additional item inquired specifically about the frequency of listening to "Gospel music." Patterns involving this item were broadly similar to, but consistently weaker than, those for the more general item on listening to religious music, suggesting that observed findings for religious music may be related to, but not reducible to, the consumption of Gospel music.

Potential Mediators

Emotional Support from Church Members. Emotional support from church members is gauged in terms of responses to three questions, which were asked only of persons who reported attending services more than once or twice per year. These items asked: Other than your minister, pastor, or priest, how often does someone in your congregation (a) ... let you know they love and care for you? (b) ... talk with you about your private problems and concerns? (c) ... express interest and concern for your well-being? Responses were coded from 1 (never) to 4 (very often). Individuals who were not asked these questions were assigned the minimum score for purposes of our analyses, and were identified with a dummy variable in all multivariate analyses. Our measure of emotional support from church members is the average response score on these three items (alpha=.88).

Anticipated Support from Church Members. To gauge respondents' perceptions of the reliability of congregational support networks, each person was asked how often someone in the congregation would be willing to help out (a) if you were ill ..., (b) if you needed to talk to someone about your problems and private feelings ... or (c) if you needed ot know where to go to get help for a problem ... Responses ranged from 1 (not at all) to 4 (a great deal). Here again, individuals were not asked these questions if they reported attending services less than once or twice a year; these persons were assigned the minimum score in our multivariate models, and were flagged with a dummy variable. Our measure of anticipated support is the mean response to these three items (alpha=.95).

Spiritual Support from Church Members. Spiritual support, or assistance in spiritual growth, is measured in terms of responses to the following items. With reference to the preceding year, each respondent was asked how often members of the congregation have: (a) shared their religious experiences with you; (b) helped you live according to your religious beliefs; and (c) helped you to know God better. Responses ranged from (1) never to (4) very often. The mean score on these items was used as the measure of spiritual support (alpha=.91).

Positive Religious Coping Strategies. The extent to which individuals draw upon faith in positive ways when coping with problems is measured via responses to four items. Respondents were asked the degree to which they (dis)agree with the following statements: (a) I look to God for strength in a crisis. (b) I look to God for guidance when difficult times arise. (c) When I'm faced with a difficult experience, I try to think about the good things God has given me. (d) I try to realize that God never gives us more than we can handle. Responses to each item are coded (1) not at all to (4) a great deal. Our measure of positive religious copng strategies is the mean score on these items (alpha=.90).

Closeness to God. To measure individuals' feelings of closeness to God, each respondent was asked how much s/he (dis)agreed with the following statements: (a) I have a close personal relationship with God. (b) I feel that God is right here with me. (c) When I talk to God, I know He listens to me. Responses ranged from (1) strongly disagree to (4) strongly agree, and our measure of closeness to God is the mean score on these three items (alpha=.93).

Sense of God Control. Respondents were also asked several items about the extent to which they perceive God as exerting control over the course of their lives. Specifically, they were asked how much they (dis)agree with these statements: (a) I rely on God to help control my life. (b) I can succeed with God's help. (c) All things are possible when I work together with God. (d) God always makes sure things turn out for my best good. (e) God protects me. (f) What happens to me in the future mostly depends on God. Answers ranged from (1) strongly

disagree to (4) strongly agree, with the mean score on these items serving as our measure of the sense of divine control (alpha=.94).

Control Variables

All multivariate analyses include controls for the following potentially confounding variables: race (1=African American, 0=white), gender (1=female, 0=male), age (measured in years), education (in years), and marital status (1=married, 0=all others). To adjust for potential differences in the ability to participate in organizational religious activities, we also control for self-rated physical health, which ranges from (1) excellent to (4) poor. Financial strain is gauged via responses to the following question: "How much difficulty do you have in meeting you/your family's bills?" Responses ranged from (1) none to (4) a great deal.

Analytic Strategy

Our analyses proceeded in several stages. First, we present summary and descriptive information on all variables used in these analyses, for the total sample and for white and African American subsamples. Next we explore cross-sectional (T1) patterns, regressing mental health variables on religious predictors and controls, adding race x religion cross-product terms. (Following Aiken and West [1991], measures of religious practice were zero-centered to reduce possible collinearity between raw and product terms.) After identifying the key cross-sectional associations between religious practice and mental health, we explore whether hypothesized intervening constructs (i.e., congregational supports, positive religious coping, closeness to God, sense of divine control) mediate these associations. Next we present panel regression models, estimating the net effects of T1 religious practices on T2 mental health outcomes, controlling for the lagged dependent variable (T1 measure), and again adding race x religion interactions. Finally, we investigate possible mediation involving the intervening constructs specified above. After listwise deletion of a modest number of cases containing missing values, the resulting Ns for the cross-sectional analyses range from 918-942, while the Ns for our longitudinal models range from 1338-1363.

RESULTS

TABLE 1: DESCRIPTIVE STATISTICS AND MEAN DIFFERENCES ON ALL VARIABLES

	Range	Total	White	Black	Diff.
Dependent Variables:					
Psychological distress (T1)	1-4	1.57 (.61)	1.54	1.60	+
Psychological distress (T2)		1.45 (.59)	1.44	1.46	0
Death Anxiety (T1)	1-4	2.03 (.59)	2.04	2.02	0
Death Anxiety (T2)		1.98 (.66)	2.00	1.97	0
Life Satisfaction (T1)	1-4	2.91 (.59)	2.84	2.97	***
Life Satisfaction (T2)		2.85 (.56)	2.81	2.90	*
Optimism (T1)	1-4	3.18 (.51)	3.07	3.30	***
Optimism (T2)		3.14 (.59)	3.09	3.20	**
Self-Esteem (T1)	1-4	3.46 (.49)	3.38	3.54	***
Self-Esteem (T2)		3.51 (.51)	3.49	3.53	0
Personal Mastery (T1)	1-4	3.04 (.50)	2.99	3.09	**
Personal Mastery (T2)		3.01 (.56)	3.01	3.01	0

Religious Variables:					
Religious Attendance	1-9	5.89 (2.67)	5.53	6.23	***
Private Prayer	1-8	6.83 (1.83)	6.32	7.36	***
Religious Music	1-8	5.04 (2.45)	3.97	6.14	***
Emotional Support	1-4	2.36 (1.06)	2.09	2.62	***
Anticipated Support	1-4	2.71 (1.22)	2.50	2.91	***
Spiritual Support	1-4	2.05 (.95)	1.80	2.29	***
Positive Religious Coping	1-4	3.60 (.68)	3.39	3.81	***
Closeness to God	1-4	3.40 (.61)	3.38	3.70	***
Sense of Divine Control	1-4	3.54 (.60)	3.20	3.60	***
Control Variables:					
African American	0-1	.50	--	--	--
Female	0-1	.62	.59	.66	***
Age	65-100	74.93 (6.49)	75.15	74.71	0
Education	1-25	11.30 (3.47)	12.53	10.06	***
Married	0-1	.48	.61	.36	***
Self-Rated Health	1-4	2.39 (.87)	2.21	2.58	***
Financial Strain	1-4	1.75 (.99)	1.48	2.04	***

NOTES: Cell entries are means, with standard deviations for the overall sample in parentheses. Differences in means are estimated using one-way ANOVA.
***p<.001 **p<.01 *p<.05 +p<.10

Summary statistics on all variables used in the analyses are displayed in Table 1. According to the overall figures, respondents tend to enjoy favorable mental health, as indicated by the relatively low mean scores on negative emotion (i.e., distress and death anxiety), coupled with positive averages on measures of self-image (self-esteem and sense of mastery) and morale (optimism and life satisfaction). There are few meaningful race differences on negative outcomes at T1 or T2, but African Americans enjoy consistent advantages on self-image and morale at T1 and more muted advantages on morale, but not self-image, at T2.

Not surprisingly, respondents in this sample of older adults tend to be rather highly religious. The average respondent attends services at least 2-3 times per month, prays privately nearly every day, and listens to religious music outside church approximately once a week. Respondents also tend to receive moderate amounts of emotional support from their religious congregations, and appear optimistic about the potential support available from their fellow church members. On the other hand, the levels of spiritual support, or aid and encouragement toward spiritual growth, reported by the average respondent are not as high. In terms of personal spirituality, most respondents indicate that religion plays an important role in the way they cope with stress, and they also tend to report feeling a close personal connection with God and a clear sense that God is active in shaping the course of their lives. Consistent

with the findings of previous studies, African American elders score significantly higher than their white counterparts on all religious measures.

As noted earlier the sample is nearly half (49.6%) African American, while the remainder of the respondents are non-Hispanic whites. A majority (62%) of respondents are women, and nearly half (48%) were married at the time of the baseline interview. The average respondent was around 75 years old, with 11.3 years of formal education completed. Levels of economic difficulty were moderate; more than half of respondents indicated that they had no difficulty at all in meeting their financial obligations. The respondents were roughly evenly divided between those with excellent or good overall health, and those reporting fair or poor health. The gender imbalance was somewhat stronger among African Americans as compared with whites. African Americans were also less likely than whites to report being married and to have physical health problems at the time of the initial survey. As anticipated, whites had higher average levels of education and lower levels of financial strain than their African American counterparts in the sample.

Finally, it is appropriate to comment on the issue of sample attrition between waves 1 and 2 of the RAH survey. After listwise deletion of the rather modest number of cases with missing values at each data point, the effective Ns in our multivariate models ranges from 1338-1363 at T1 and 918-942 at T2. Aside from reducing the statistical power of our longitudinal analyses, there is the important question of whether this case loss is non-random, and therefore, whether it introduces any significant bias into our estimates. Although overall means on our mental health variables appear to change little across waves, there is some narrowing of the mean differences between whites and African Americans over time. But does the sample composition shift in other notable ways between T1 and T2? For the most part, the answer appears to be no. Mean scores at T2 on nearly all variables are nearly identical to those at T1. Ancillary analyses suggest that older respondents and those reporting more health problems at baseline were disproportionately to be lost between waves, probably due to mortality death or institutionalization. Married persons and regular churchgoers were slightly more likely to remain in the sample during both waves. No other meaningful differences were observed in the characteristics of respondents who were lost across waves, compared to those persons who completed both interviews.

TABLE 2: SELECTED CROSS-SECTIONAL ASSOCIATIONS BETWEEN RELIGIOUS PRACTICES ON MENTAL HEALTH (OLS REGRESSION ESTIMATES, Ns 1338-1363)

	DISTRESS		DEATHANX		SATISF	
Religious Attendance	-.036***	-.017*	-.021**	-.009	.025***	.009
Private Prayer	.010	.004	-.009	-.013	.025*	.030**
Religious Music	.002	.003	.003	.003	.022**	.022**
Attendance x Black	--	-.043***	--	-.026*	--	.038**

	OPTIMISM		SELFEST		MASTERY	
Religious Attendance	.025***	.010	.022***	.011	.014*	-.007
Private Prayer	.016+	.021*	.020*	.024**	.026**	.033***
Religious Music	.021***	.020***	.001	.001	.005	.004
Attendance x Black	--	.035***	--	.027**	--	.048***

NOTES: Cell entries are unstandardized OLS regression coefficients. All models control for self-rated physical health, financial problems, race, age, gender, education, and marital status.
*** p<.001 **p<.01 *p<.05 +p<.10

Table 2 presents selected regression coefficients, reflecting cross-sectional associations between religious practices and mental health variables. Several findings are noteworthy. Although religious attendance is associated with each of these outcomes in the main effects models, even with controls for non-organizational religious practices and controls, this pattern is due to the strong links between attendance and mental health among African Americans. All interactions (attendance x race) are significant, and in 5 of 6 instances the inclusion of the cross-product term eliminates the main effect of attendance. Frequency of prayer is also associated with 4 of the 6 mental health variables, and ancillary analyses confirmed that these patterns do not differ by race. The frequency of listening to religious music was the weakest of the three religious practice variables in our cross-sectional models, bearing a significant association with only 2 of our dependent variables, those tapping morale (satisfaction and optimism).

In ancillary analyses, we explored the possible role of several intervening constructs in mediating the observed links between religious practices and mental health in our cross-sectional data. These potential mediators include: emotional support, anticipated support, and spiritual support from church members; positive religious coping strategies; feelings of closeness to God; and the sense of divine control. Contrary to expectations, only limited evidence of mediation emerged in these analyses. With regard to distress, the only mediating pattern involved anticipated support from members of the congregation. When the estimated effect of such anticipated support (b=-.041, p<.05) was controlled, the net association between religious attendance and distress among whites (b=-.017, p<.05) was eliminated (b=-.004, ns). There was no support for any hypothesized mediating relationship in our models of death anxiety.

Results for the other cross-sectional outcomes provided somewhat more evidence of statistical mediation. For example, the strong link between prayer and life satisfaction (b=.030, p<.001) was eliminated by adjustments for several aspects of personal spirituality. The sense of divine control is significantly linked with satisfaction (b=.266, p<.001), and its inclusion in the model sharply diminished the net effect of prayer (b=-.005, ns). Similar patterns surfaced with regard to positive religious coping strategies (b=.128, p<.001) and feelings of closeness to God (b=.183, p<.001), each of which also eliminated any association between prayer and satisfaction. Findings were almost identical for self-esteem. Each of these indicators of spirituality --divine control (b=224, p<.001), closeness to God (b=.208, p<.001), and positive religious coping

(b=.103, p<.001)-- was significantly associated with self-esteem, and the inclusion of each of these variables in the model control erased any statistical link between frequency of prayer and self-esteem. Similar results emerged in our models of personal mastery, when divine control (b=.137, p<.001) and positive religious coping strategies (b=.096, p<.001) were included. Here again, these constructs appear to account for the observed link between prayer and mental health. In the vast majority (28 of 36) of instances, our hypothesized mediators were significantly associated with the mental health outcomes, in the predicted direction. However, only in the cases noted above did these variables account for the observed effects of religious practices.

In sum, then, in the cross-sectional analyses three hypothesized mediators -- divine control, positive religious coping, and to a lesser extent feelings of closeness to God-- help to account for the associations between non-organizational religious practice (chiefly frequency of prayer) and several positive mental health outcomes. By contrast, there is little support for any mediating role of congregational support variables, although there is evidence of direct associations of emotional support and anticipated support with several of the mental health variables of interest. Importantly, none of the hypothesized mediators helps to explain the robust attendance x race interactions predicting each of the T1 mental health measures.

TABLE 3: SELECTED LONGITUDINAL RESULTS, ESTIMATED NET EFFECTS OF RELIGIOUS PRACTICES ON MENTAL HEALTH (OLS REGRESSION ESTIMATES, Ns 919-942)

	DISTRESS		DEATHANX		SATISF	
Religious Attendance	-.009	-.015	.009	.015	.003	-.003
Private Prayer	.010	.012	-.022	-.025	.011	.014
Religious Music	.002	.002	-.033**	-.033**	.023**	.022**
Attendance x Black	--	.013	--	-.016	--	.017

	OPTIMISM		SELFEST		MASTERY	
Religious Attendance	.027***	.027***	.003	-.003	.017*	.002
Private Prayer	.006	.007	.019+	.026*	-.008	-.001
Religious Music	.015	.015	.016*	.015+	.020*	.019*
Attendance x Black	--	.002	--	.039***	--	.037**

NOTES: Cell entries are unstandardized OLS regression coefficients.
All models control for T1 dependent variable, self-rated health, financial problems, race, age, gender, education, and marital status.
***p<.001 **p<.01 *p<.05 +p<.10

Next we estimate the net effects of T1 religious practices and other predictors on T2 mental health outcomes, controlling for the lagged (T1) effect of the dependent variable. These panel results, which are displayed in Table 3, are far more modest than the cross-sectional findings. Frequency of religious attendance at baseline has limited influence on changes in psychosocial functioning in the overall sample, with the exception of a robust salutary effect on optimism ($b=.027$, $p<.001$). Attendance bears a somewhat stronger effect on two aspects of self-concept --self-esteem and personal mastery-- among older African Americans, as compared with their white counterparts. Frequency of prayer is almost entirely unrelated to changes in our mental health outcomes, save for a modest salutary effect on self-esteem. Listening to religious music, which was the weakest predictor in our cross-sectional models, bears the most consistent relationships with changes in mental health. Older adults who listen to religious music more often at the time of the baseline interview tend to enjoy lower death anxiety ($b=-.033$, $p<.01$), and higher life satisfaction ($b=.022$, $p<.01$), self-esteem ($b=.016$, $p<.05$), and personal mastery ($b=.019$, $p<.05$) over the subsequent 3-year period, even with controls for other relevant indicators of religious practices.

Finally, there was minimal support for any of the hypothesized mediating relationships in the longitudinal data. Indeed, despite their potent associations with mental health at T1, few of these indicators of congregational support, religious coping, or relationships with God was predictive of changes in these outcomes over the 3-year study period. The scattered exceptions involved: (a) spiritual support from church members, which predicted reduced distress ($b=-.067$, $p<.05$) and enhanced self-esteem ($b=.043$, $p<.10$); (b) closeness to God, which predicted reduced death anxiety ($b=-.095$, $p<.05$) and enhanced self-esteem ($b=.064$, $p<.10$); (c) sense of divine control, which predicted increased optimism ($b=.075$, $p<.10$); and (d) emotional support from church members, which predicted reduced distress ($b=-.044$, $p<.10$). In all, only 7 of 36 tests even approached statistical significance, and in no instance did the inclusion of these constructs mediate the observed effects of religious practices.

DISCUSSION

The literature on religion and mental health has expanded rapidly in recent years. In marked contrast to the claims of some psychologists, most recent studies report salutary associations between aspects of religious involvement and mental health outcomes. Despite the expansion of this body of work, a number of important issues remain unresolved. To shed light on these questions, the present study has analyzed data from a major nationwide longitudinal survey of older adults, which contains an oversample of African American elders. A number of findings and implications warrant discussion.

First, religious practices are associated with a number of mental health outcomes, in both cross-sectional and longitudinal data, although the cross-sectional patterns appear to be stronger and more consistent. Specifically, the frequency of religious attendance is linked with all 6 outcomes for African Americans at T1, and with changes in 2 of the 6 (self-esteem and mastery) between T1 and T2. By contrast, attendance is only associated with 1 outcome (distress) for whites at T1, and with changes in another (optimism) between T1 and T2. Further investigation reveals no clear mediating pathways that help to explain the salutary effects of religious attendance among African American elders. The cross-sectional link between attendance and distress among older whites is mediated by anticipated support from church members. Other facets of

organizational religiousness (participation in Bible study groups or religious education classes, or prayer groups, or leadership positions within the church) were unrelated to mental health among whites or African Americans. Thus, future research on religious practices and mental health might profitably focus on refining the conceptualization and measurement of religious attendance, as the best single indicator of institutional religious participation, rather than developing broader indicators of "organizational religiousness."

Second, the frequency of private prayer exhibited a number of cross-sectional associations with positive mental health, i.e., higher levels of life satisfaction, self-esteem, mastery, and optimism. These patterns did not vary substantially by race. The links between prayer and mental health at T1 were generally mediated by several specific constructs, notably (a) the sense of divine control, or the perception that God is actively involved in shaping one's life, and (b) positive religious coping strategies, or the ability to draw on personal faith to manage challenges or crises. However, prayer was related to changes in only 1 outcome --self-esteem-- between T1 and T2, and this was not mediated by any of the intervening constructs examined here. For the most part, other indicators of non-organizational practices were unrelated to mental health in either cross-sectional or longitudinal analyses.

Third, the frequency of listening to religious music outside church, a topic that has been largely neglected by health researchers, surfaced as a second important predictor of mental health among older adults. Indeed, this was arguably a more potent predictor than either attendance or prayer, and its effects did not vary by race in any instance. Private religious music consumption was associated with 2 psychosocial variables (life satisfaction and optimism) at T1, but strikingly, it was linked with favorable changes in 4 of the 6 outcomes (satisfaction, optimism, self-esteem, and mastery) between T1 and T2. Listening to Gospel music specifically appears to have some similar, but consistently weaker, effects on mental health.

These findings have several important implications for future research. First, although much of the work in the social patterning of mental health has focused on negative affective outcomes (e.g., distress, depression, anxiety), this concentration may result in low-ball estimates of the overall role of religious practices in this domain. As investigators have noted for decades (Campbell, Converse, & Rodgers, 1976; George, 1981; Jahoda, 1958), mental health involves more than simply the absence of symptoms of dysphoria. Religious activities are consistently linked with positive psychosocial outcomes, including cognitive indicators of well-being and favorable self-perceptions, among older adults (Ellison, 1991).

Second, although longitudinal findings are limited in these data, it is important to explore different temporal lags in gauging effects in this area. Some of these psychosocial outcomes are relatively stable over the 3-yar study period, and the processes under investigation may operate slowly, at rates that differ across these specific outcomes. These factors may account for the modest effects of religious practices observed here. Studies conducted over a longer period, or with more data observation points, might reveal different or stronger religious effects on some psychosocial outcomes. It will be important for researchers to think more carefully about how best to interpret cross-sectional associations between religion and mental health, particularly in samples of older adults. These strong patterns may reflect, among other things, the benefits of long-term exposure to religious practices and contexts of certain types, and analyses of more waves of data on adults initially surveyed in midlife could be informative in this regard.

Third, as anticipated, some religious practices, notably attendance at religious services, appear to yield greater benefits among older African Americans as compared with whites. Although these patterns are quite clear for some outcomes, our analyses of potential mediators --such as congregational support systems and positive religious coping strategies-- revealed little about the reasons for these race differences in the effects of attendance. It is possible that these results are due to (a) distinctive features of worship styles and experiences within some African American congregations (Gilkes, 1980; Griffith et al., 1984), or (b) the role of additional, unmeasured psychosocial constructs such as gratitude, meaning, or forgiveness that may emerge from the church participation of some African Americans (Krause, 2003, 2006a; Krause & Ellison, 2003). Given the obvious importance of these outcomes, the reasons for these unexplained findings clearly deserve continued investigation in the future.

Fourth, religious music is clearly an important component of the spiritual lives and experiences of many adults, but it has received minimal empirical study to this point. That should change. We need to know more about the effects of diverse types of religious music on the moods and attitudes of older adults, and to examine how these effects might develop, and to distinguish the effects of listening to religious vs. secular music, and listening vs. participating (playing, singing). It is possible that certain types of religious music have particularly potent effects on emotions and moods, and some of these effects could even be specific to older adults. Although these findings should be replicated in additional work, investigators should begin pursuing more detailed agendas on this neglected domain.

Although many studies have reported associations between religious practices and mental health, a number of pressing research questions remain unresolved. This study has augmented the work in this area by: (a) comparing the effects of multiple indicators of religious practice; (b) examining multiple indicators of mental health; (c) estimating models using both cross-sectional and longitudinal data on older adults, and comparing the results; (d) exploring race differences in the key relationships; and (e) conducting preliminary analyses of possible mediators, or variables that might explain the observed links between religious practice and mental health. Despite the limitations inherent in this study, it is hoped that further work along these lines can help to clarify the complex and contingent nature of the connections between religion and mental health.

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