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Church-Based Social Support and Health in Old Age: Exploring Variations by Race

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Objectives. A conceptual model is evaluated that explores the relationship between church-based support and health. In the process, an effort is made to see if the relationships in this model differ for older White and African American people.

Methods. Interviews were conducted with a national sample of 748 older White and 752 older Black people. The responses of 1,126 of these study participants are used in the analyses presented herein. Survey measures were administered to assess church-based social ties and health.

Results. Empirical support was provided for the following theoretical linkages: Older people who attend church often feel their congregations are more cohesive; older people in highly cohesive congregations receive more spiritual and emotional support from their fellow parishioners; older respondents who receive more church-based support have a more personal relationship with God; older people who feel more closely connected with God are more optimistic; and older people who are more optimistic enjoy better health. Data further reveal that older Black people are more likely than older White people to reap the health-related benefits of religion.

Discussion. The findings contribute to research on religion and health by specifying how the salubrious effects of religion may arise.

A convincing literature indicates that involvement in religion is associated with good health throughout adult life [see Koenig, McCullough, & Larson (2001) for a review of this research]. Initially, researchers working in this field focused primarily on the relationship between basic aspects of religion, such as church attendance and health (Comstock, 1971). However, as this literature continued to evolve, a greater emphasis was placed on explaining *how* the salubrious effects of religion may arise. For example, there has been considerable interest in exploring how factors like forgiveness (McCullough, Pargament, & Thoresen, 2000), prayer (Levin & Taylor, 1997), and religious coping responses (Pargament, 1997) influence physical as well as mental health. Viewed broadly, this work suggests that religion may affect health in not one, but a number of different ways. As a result, it seems unlikely that researchers will be able to develop a single comprehensive model that encompasses all the diverse ways in which religion may influence health. Instead, it makes more sense to follow the pragmatic approach outlined by Bradley and Schaefer (1998) in their insightful discussion of causal modeling. These investigators maintain that because the social world is exceedingly complex, researchers should strive to develop several models that shed light on different facets of a larger underlying social process.

Consistent with the recommendations of Bradley and Schaefer (1998), the purpose of the present study is to examine one domain of religion that has not been fully exploited in social gerontology—social relationships in the church. Although several investigators have discussed race differences in church-based support (Chatters, 2000), and the relationship between social ties in the church and health (Krause, Ellison, & Marcum, 2002), a number of key issues have yet to be explored. In particular, some studies focus on adults of all ages (e.g., Krause et al., 2002), making it difficult to generalize the findings to older people. In addition, a number of investigators attribute the salutary effects of religious factors, such as church attendance, to church-based support, but they never directly measure support exchanged by fellow church members (e.g., Williams, Larson, Buckler, Heckmann, & Pyle, 1991). Finally, few researchers have empirically evaluated explicit conceptual models that attempt to explain how the potentially beneficial influence of church-based support may arise. Although some scholars have provided useful theoretical discussions of how the effects of church-based support might operate (Ellison & Levin, 1998), these conceptual schemes remain largely untested. Consequently, the first goal of the present study is to address this gap in the knowledge base by evaluating the relationship between religious support and health in late life, with an eye toward showing how the potentially beneficial effects of church-based social ties may arise.

The second goal of this study is to delve more deeply into church-based social relationships and health by exploring the potentially important influence of race. More specifically, an emphasis is placed on seeing whether the church-based social ties of older African Americans are stronger than those of older White persons, and whether there are race differences in the relationship between religious support and health. Some investigators argue that older African Americans may receive more tangible and emotional assistance in church than older White persons (Chatters, 2000), but this literature may be improved in at least three ways. First, few studies actually empirically assess race differences

in church-based support. Instead, the argument for race differences in religious support is based largely on theoretical discussions alone. Second, researchers do not typically conduct explicit tests to see if the effects of church-based support on health differ significantly for older White and older Black people. Third, as the research that follows will reveal, there are facets of religious support beyond emotional and tangible assistance that have yet to be evaluated fully.

The discussion that follows is divided into three main sections. First, a conceptual model is developed that attempts to show why church-based social ties may be associated with good health in late life. In the process, race differences in this conceptual scheme are explored. Second, the sample and study measures are presented. The data analytic strategy is briefly examined at this juncture as well. Finally, the study results are reviewed and discussed.

Church-Based Social Support and Health

The latent variable model that was developed for this study is presented in Figure 1. Two steps were taken to simplify the presentation of this conceptual scheme. First, the elements of the measurement model (i.e., the factor loadings and measurement error terms) are not shown in Figure 1. Second, the relationships among the constructs in this model were evaluated after the effects of age, sex, education, and race were controlled statistically. The central theoretical thrust of this conceptual scheme is captured in the following linkages: (1) Older people who attend church more often will tend to believe their congregations are highly cohesive; (2) those who worship in more cohesive congregations will receive more spiritual and emotional support from their fellow church members; (3) older people who receive spiritual and emotional support from the people in their church will develop a deeper and more personal relationship with God (i.e., connectedness with God); (4) older study participants who feel they are closely connected with God will maintain a strong sense of optimism; and (5) older people who are more optimistic will enjoy better health than elderly people who are less optimistic. The theoretical rationale for these linkages is discussed in detail herein.

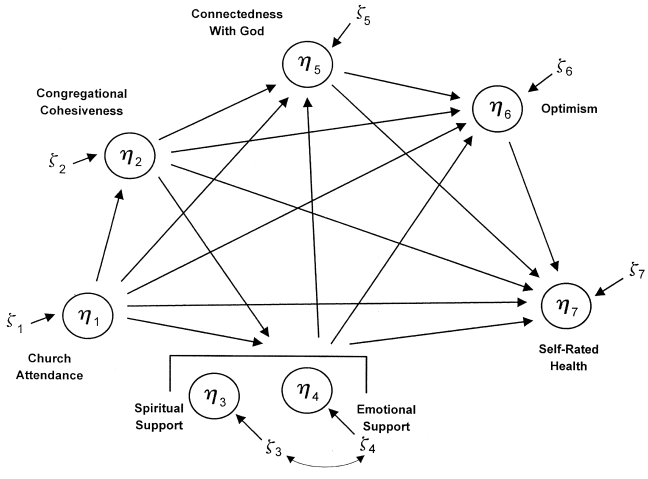

Figure 1. A conceptual model of church-based support and self-rated health.

Church attendance, congregational cohesiveness, and spiritual support.—As House (1987) observed some time ago, social support is rarely treated as a dependent variable. Yet a deeper understanding of how social support operates should begin by showing how it arises in the first place. The model in Figure 1 was designed to address this issue by assessing the interplay between the frequency of church attendance and the wider social climate of the congregation.

According to the model depicted in Figure 1, church attendance may affect religious support in two ways. First, it is hypothesized that older adults who attend church more often will receive more support from church members than older people who do not attend religious services frequently. This may happen for a number of reasons. For example, frequent contact may make potential providers more aware of the social support needs of older church members.

The second way that church attendance may influence religious support is more indirect and operates through the wider social climate of the church. A longstanding principle in sociology stipulates that the behavior of people in institutions, such as churches, is influenced by the wider climate of these social organizations. This view is captured in the classic work of Berger and Luckmann (1966), who maintain that, "Institutions . . . by the very fact of their existence, control human conduct by setting up predefined patterns of conduct, which channel it in one direction as against the many other directions that are theoretically possible" (p. 55). Although this proposition appears to be relatively straightforward, it is challenging to evaluate because there are a number of ways to conceptualize and measure institutional influences on behavior. Several researchers have attempted to delineate different facets of religious institutions that shape the behavior of people who worship there. One of the more comprehensive studies was conducted by Pargament and colleagues (1983). These investigators proposed that the climate of a congregation is determined by a range of factors, including the stability of church leadership, the level of autonomy and openness in church meetings and committees, and the extent to which church members are involved in church activities. Their research revealed that certain facets of the congregational climate (e.g., the level of autonomy) were associated with greater self-esteem and life satisfaction. Although these investigators made a valuable contribution to the literature, their work can be improved in at least three ways. First, the study by Pargament and colleagues was based on a nonrandom sample of adults from all age groups. This makes it difficult to determine whether the findings may be generalized to older people. Second, psychological well-being was the major outcome measure in this study. As a result, it is not clear if the climate of the congregation may be related to physical health status as well. Third, Pargament and colleagues did not make an effort to evaluate empirically the ways in which the climate of the congregation may influence the physical or mental health of people who worship there.

In an effort to extend the work of Pargament and colleagues (1983), the model depicted in Figure 1 focuses on one facet of

the wider congregational climate—congregational cohesiveness. This construct reflects the extent to which church members believe their values and outlook on life are shared by the people they worship with. Focusing on this particular facet of the congregational climate makes it possible to specify the second way in which the frequency of church attendance may be associated with religious support. More specifically, it is proposed in Figure 1 that older people who attend church more often tend to believe that their congregations are more cohesive, and older people who are embedded in more cohesive congregations will, in turn, receive more support from their fellow church members. The work of Stark and Finke (2000) helps explain the first of these linkages. These investigators begin by pointing out that when people attend religious services, they engage in various rituals. The purpose of these rituals is to enhance group solidarity by increasing commitment to the ideals, goals, and values of the church. To the extent this is true, more frequent attendance in worship services should promote greater congregational cohesiveness. In contrast, the link between congregational cohesiveness and social support is based on a large body of secular research, which suggests that social support is more likely to be exchanged when social networks are homogeneous and network members share common values and beliefs (McPherson, Smith-Lovin, & Cook, 2001).

Research on the predictors of church-based support is complicated by the fact that church members are likely to help each other in a number of different ways. For example, research reviewed by Chatters (2000) suggests that people often receive emotional and tangible assistance from the people they worship with. This is important because an extensive literature suggests that various types of support provided in secular settings (e.g., emotional support or tangible help) may have a beneficial effect on health (Cohen, Underwood, & Gottlieb, 2000). However, research conducted in church settings indicates that people may also help each other in ways that are more explicitly religious in nature. More specifically, research by Krause, Ellison, Shaw, Marcum, and Boardman (2001) indicates that fellow church members may exchange spiritual support as well. Spiritual support is assistance that is aimed specifically toward increasing the religious commitment, beliefs, and behavior of a fellow parishioner. There are a number of ways in which church members may exchange spiritual support. For example, they may share their own religious experiences with a fellow parishioner, or show them how to apply their religious beliefs in daily life.

Although it is not possible to include all the different dimensions of church-based support in a single conceptual model, two are evaluated in Figure 1—emotional support and spiritual support provided by church members. Comparing and contrasting the effects of these constructs is useful for the following reason. Although measures of emotional and spiritual support from church members are correlated (Krause et al., 2001), these types of church-based assistance may serve different functions. Spiritual support is much more focused in nature and is typically provided to enhance the religious experience and understanding of the recipient. In contrast, emotional support from church members is more general and is often provided to promote an overall sense of well-being in the recipient and augment the quality of the relationship between the provider and the recipient. If church-based support is associated with health in old age, then knowing which facet of support is at work may help researchers better understand the underlying mechanisms that may be at work.

Church-based support and connectedness with God.—A number of studies indicate that individuals tend to become more religious as they grow older. For example, when compared with people under 30 years of age, considerably more people over age 75 say religion is very important to them (i.e., 77% vs. 45%; Ehmann, 1999). Similarly, research by Levin and Taylor (1997) indicates that the frequency of private prayer steadily increases in successively older cohorts. These empirical insights are consistent with the theoretical perspective developed by Fowler (1976), who outlined a series of stages that people go through in the development of their faith. He argued that, as individuals progress through these developmental stages, the quality and nature of their faith tends to deepen and mature. For example, the final stages in his scheme are characterized as a time of deep critical introspection, in which commitment to one's faith broadens and takes on a greater significance. It is especially important to note that Fowler argued that these final stages of development are typically encountered later in life.

Consistent with the perspective of Fowler (1976), Koenig (1994) identified the qualitative changes that take place in the religious orientation of some people as they enter in old age. The essence of these changes is captured in Koenig's notion of a mature religious faith. In particular, he maintains that a ". . . mature religious faith involves a deep, intimate, stable, and exclusive relationship with God" (Koenig, 1994, p. 124). If this is true, then researchers need to learn more about the factors that promote a deep personal relationship with God. A central premise in the present study is that fellow church members may play a critical role in this process. In particular, it is proposed that spiritual support received from fellow parishioners helps older people feel as though they are more closely connected with God, and that they have a deep personal relationship with Him. This is hardly a new idea. Nearly a century ago, Simmel (1905) maintained that a religious person, ". . . feels himself bound to a universal, to something higher, from which he came and into which he will return, from which he differs and to which he is nonetheless identical. All of these emotions, which meet as in a focal point in the idea of God, can be traced back to the relationship that the individual sustains with the species . . ." (p. 372).

As Simmel's (1905) observations reveal, all close ties with others are capable of generating these feelings toward God. To the extent this is true, emotional support may be associated with feeling close to God as well. However, it is predicted in this study that spiritual support will have a greater effect because, as noted earlier, this type of church-based support is focused more specifically on enhancing the nature and quality of religious life.

Wuthnow (1994) conducted one of the few empirical

studies on the relationship between social ties in the church and the development of a close personal relationship with God. Consistent with the hypothesis developed for the present study, Wuthnow found that people who are encouraged by fellow church members to adopt religious teachings and principles tend to report they have a closer relationship with God. However, Wuthnow did not examine whether having a close personal relationship with God was, in turn, related to health. Moreover, because he studied adults of all ages, it is not clear if his findings can be generalized to older people.

Connectedness with God and optimism.—If religion is related to health in late life, and having a close personal relationship with God is the hallmark of a mature faith, then it is imperative to find out how a close relationship with God may influence the health of older people. Although there are likely to be a number of pathways, one potentially important mechanism is examined in Figure 1. In particular, it is proposed that older people who have a close personal relationship with God have better health because being closer to God helps them feel more optimistic. Optimism is defined as the expectation or confidence that outcomes that are desired for the future will ultimately be attained (Peterson, 2000). Optimism is very closely akin to hope (Snyder, 2000). Although some investigators go to great lengths to discuss the differences between the hope and optimism (Nunn, 1996), it is not the purpose of the present study to resolve this issue. Instead, the literature on both hope and optimism is considered below because, despite the conceptual distinction between these constructs, the two constructs appear to be correlated highly (e.g., around 0.60; Snyder et al., 1991).

There are two reasons why optimism and hope are especially important factors to examine within the context of religion. First, as Peterson (2000) argues, "Religious thought lends itself particularly well to . . . optimism because of its certainty" (p. 51). Second, as Levin (2001) points out, ". . . every religion seeks to instill hope in those who subscribe to its teachings" (p. 138). Consistent with these views, Koenig and colleagues (2001) reviewed a series of studies that link various aspects of religiousness with greater optimism and hope. However, most of this work was conducted in clinic settings with adults of all ages who were suffering from diseases like cancer or HIV. Consequently, it is difficult to generalize the findings to the general population of older people. Sethi and Seligman (1993) conducted one of the few studies on optimism and religion that did not involve respondents who were recruited from a clinic setting. These investigators report that adults of all ages who feel religion has a greater influence in their daily lives, and who are more involved in religion, tend to feel more optimistic.

Although optimism may be related to religion in general, it is important for the purposes of the present study to show why it may arise specifically from a close personal relationship with God. Evidence for this relationship may be found by returning to Koenig's (1994) discussion of a mature faith. In particular, he argued that people who have a close relationship with God develop a deep sense of trust in God, believe that God is in control of their lives, believe that God knows what is best for them, and believe that God ultimately ensures they will get what they need most. Because of these beliefs, Koenig maintained that people who have a close personal relationship with God are more hopeful and more optimistic.

Optimism and health.—There are a fairly substantial number of studies in the secular literature on the relationship between optimism and physical as well as psychological well-being. One study by Peterson, Seligman, and Vaillant (1988) is especially compelling. Their research suggests that optimism is a significant predictor of physical health status over a 35-year period. In particular, this study revealed that people who are optimistic tend to enjoy better health over time than individuals who are less optimistic. Similarly, research reveals that people who are hopeful also tend to have better physical health [see Lazarus (1999) for a review of this literature]. There are at least three reasons why optimism and hope may exert a beneficial effect on health. First, there is some evidence that people who are optimistic tend to cope more effectively with stressful life events. In particular, a strong sense of hope or optimism is a motivating factor that encourages individuals to take active steps to eradicate the problems they face (Lazarus, 1999). Second, optimism or hope is thought to imbue life with a deep sense of meaning (Levin, 2001). This is important because research indicates that having a strong sense of meaning in life is associated with better health (Ryff & Singer, 1998). Finally, hope and optimism may lower the risk of mental health problems (Nunn, 1996) that may, in turn, influence physical health (Cohen & Rodriguez, 1995).

Although the secular literature on hope, optimism, and health is fairly well developed, empirical research on these relationships in religious settings is more limited. In one of the more noteworthy studies, Idler and Kasl (1997) found that the frequency of church attendance is associated with greater optimism and that older people who are more optimistic tend to experience fewer problems with physical functioning over time. Consistent with the findings of Idler and Kasl, it is predicted in Figure 1 that older adults who are more optimistic will report their health is better than elderly people who are less optimistic.

Race Differences

The model depicted in Figure 1 is useful because it serves as an important strategic context for adding to the burgeoning literature on race differences in religion during late life. As noted earlier, a considerable number of studies reveal that older Black people are significantly more involved in religion than elderly White people. In one of the more comprehensive studies, Levin, Taylor, and Chatters (1994) explored race differences in religion across four national surveys. Race comparisons were made on 21 indicators of religion across these different data bases. The findings revealed that older Black people were more religious than older White people in 19 of the 21 tests. For example, when compared with elderly White people, older Black persons attend church more often, read religious books more often, and feel that religion is more important in their lives. The model depicted in Figure 1 aims to contribute to this literature in two ways. First, it expands the scope of inquiry by

exploring whether race differences emerge in variables that have not been examined by other researchers (i.e., congregational cohesiveness, spiritual support, emotional support, and connectedness to God). Second, an effort is made to see whether race differences emerge in the relationships between these measures of religion and health.

Social factors figure prominently in the model depicted in Figure 1 (e.g., congregational cohesiveness and spiritual support). This emphasis is important because research consistently shows that the social aspects of religion may be more well developed among older Black than elderly White people. Evidence of this may be found in the classic study of the black church by DuBois (2000). Writing in 1887, he concluded that, "The Negro church . . . provides social intercourse, it provides amusement of various kinds, it serves as a newspaper and intelligence bureau, it supplants the theater, it directs the picnic and excursion, it furnishes the music, it introduces the stranger to the community, it serves as a lyceum, library, and lecture bureau—it is, in fine, the central organ of the organized life of the American Negro" (p. 21). Although the observations of DuBois were made over a century ago, more recent evidence suggests that religion among Black people continues to have a pronounced social emphasis. This is reflected in the work of Mattis and Jagers (2001), who noted that, ". . . African American religiosity and worship traditions emphasize both a profound sense of intimacy with the divine, and a horizontal extension of that intimacy into the human community . . ." (p. 523).

There are both historical and cultural reasons for the decidedly social emphasis in religion among older Black people. With respect to history, a number of researchers maintain that the church became the social center of the community because of centuries of discrimination and prejudice. In particular, Black people turned to the church for social as well as spiritual sustenance because it was the only institution in the community that was built, funded, and wholly controlled by Black people (Nelsen & Nelsen, 1975). In addition to historical factors, there is some evidence that cultural issues may also come into play. Baldwin and Hopkins (1990) have gone to great lengths to identify the key elements of the African American worldview or culture. They persuasively argue that African American culture is characterized by its emphasis on harmony, cooperation, collective responsibility, "groupness," and "sameness." Because institutions reflect the elements of the wider culture in which they are embedded, it follows that these key cultural characteristics should permeate religion in the Black community as well.

Based on the research reviewed previously, it is hypothesized that, compared with older White people, older Black people will report their church congregations are more cohesive. Evidence for this may be found in Pargament's study on the climate of religious congregations (Pargament et al., 1983). These investigators found that, on average, African American congregations appear to have a more favorable climate than White congregations. In addition to this, the cultural and historical factors identified previously suggest that, compared with older White people, older Black persons will report receiving more emotional and spiritual support from their fellow parishioners. But race differences in the social aspects of religion may extend beyond relationships among people to the relationships that older adults maintain with God. As noted earlier, Mattis and Jagers (2001) maintain that a special emphasis is placed in African American religiosity on developing an intimate relationship with God. Support for these observations may be found in a qualitative study of 50 older Black women by Black (1999). Her research revealed that, "God is regarded as a personal friend who knows each woman intimately and cares for her particularly" (Black, 1999, p. 359). Similar conclusions were reached in another qualitative study by Poindexter, Linsk, and Warner (1999). Cast within the context of the model depicted in Figure 1, this research suggests that older Black people will report they feel more closely connected to God than their White counterparts.

In addition to these predominantly social factors, race differences may also emerge in hope or optimism. Research in Black theology by Cone (1986) suggests that because of racial repression in the United States, African American religiosity is deeply concerned with issues of oppression, and the quest for liberation and justice. Because of the centrality of the church in the Black community, and because the church meets issues of racism head on, Black theologians have argued that one of the most important functions of the church is to instill a sense of hope and optimism among the faithful (Cone, 1986). Based on this literature, it is hypothesized in Figure 1 that older Black people will be more optimistic than older White people.

So far, the discussion in this section has focused on how race differences may arise in various dimensions of religion. But it is important to think more deeply about how these race differences may become manifest. The research reviewed previously suggests that the level or amount of religious involvement may be higher among older Black people than among older White people. So, for example, Black people may receive more spiritual support than White people. If spiritual support is, in turn, related to health, it would be reasonable to conclude that religion is more likely to benefit older Black people because they are more involved in it. This scenario would reflect the salubrious effects of *differential involvement* in religion across the two racial groups. These race differences could be detected by testing for mean differences in constructs, like spiritual support. Alternatively, differential involvement could be captured by estimating the relationship between race and spiritual support. But there is another way to think about the relationships among race, religion, and health that is more subtle in nature.

Subsequent data analysis may reveal that the relationship between church-based support and health is stronger among older Black people than among elderly White people. This effect would be captured by assessing whether the regression coefficient for the relationship between spiritual or emotional support and health differs across subgroups consisting of older White and older Black people. If the subgroup coefficients are different, it is important to think carefully about what these findings mean. In this case, the estimates would reveal that, at the same level or amount of support, the impact of church-based assistance on health is

greater for older Black than older White people. This *differential impact* of church-based support on health would suggest there is something qualitatively different about the nature of the social support process across the two racial groups. This unmeasured influence could involve a number of factors, including the cultural or historical influences reviewed earlier in this section. For example, research in the secular support literature suggests that the benefits of receiving assistance from others are enhanced if both the support provider and the support recipient possess good social skills (Hogg & Heller, 1990). Perhaps the social emphasis in the African American worldviews discussed by Baldwin and Hopkins (1990) helps ensure that, at comparable levels of exposure, older Black people will be more likely than White people to reap the health-related benefits of receiving church-based support because their culture has provided them with more well-developed social skills.

In the analyses that follow, two sets of analyses are used to disentangle the potential contributions of variations by race in the differential involvement and differential impact of religion in late life. Doing so helps sharpen our understanding of the precise processes that may shape race differences in the relationship between religion and health.

Methods

Sample

Data for this study come from a nationwide survey of older people. The study population was defined as all household residents who are either Black or White, noninstitutionalized, English speaking, and 66 years of age or older. Geographically, the study population was restricted to eligible persons residing in the coterminous United States (i.e., residents of Alaska and Hawaii were excluded). Finally, the study was restricted to individuals who were currently practicing Christians, people who were Christians in the past but no longer practice any religion, and individuals who were not affiliated with any faith at any point in their lifetime. People who practiced a religion other than Christianity (e.g., Jews and Muslims) were excluded because it would be extremely difficult to devise a comprehensive set of religion measures that are suitable for persons of all faiths.

The sampling frame consisted of all eligible persons contained in the Health Care Finance Administration (HCFA) Medicare Beneficiary Eligibility List (HCFA is now called the Centers for Medicare and Medicaid Services). This list contains the name, address, sex, and race of virtually every older person in the United States. It should be emphasized that older people are included in this list even if they are not receiving Social Security benefits. Nevertheless, some older people are not included in this database because they do not have a Social Security number. This may be from factors such as illegal immigration.

A five-step process was used to draw the sample. First, each year, researchers at HCFA draw a 5% sample of the names in their master file using a simple random sampling procedure. The sampled names include individuals who are at least 65 years of age. However, by the time the field period for the present study began, subjects in the 5% file were at least 66 years of age. It is for this reason that the study population was defined as including individuals who were 66 years of age or older. In the second step of the sampling procedure used for this study, the 5% file was split into two subfiles—one containing older White people and the other containing older Black people. Each file was sorted separately by county and then by zip codes within each county. In the third step, an *n*th interval was calculated for each subfile based on the total number of eligible records. Following a random start, 75 *n*th selections were made in each file. In the fourth step of the sampling strategy, primary sampling units (PSUs) were formed by selecting approximately 25 additional names above and 25 additional names below each case identified in step three. Finally, in the last stage, sampled persons within each PSU were recruited for an interview with the goal of obtaining approximately 10 complete interviews per PSU.

Interviewing began in March 2001 and concluded in August 2001. Data collection was performed by Louis Harris and Associates (now Harris Interactive). A total of 1,500 interviews were completed successfully. Older Black persons were oversampled so that sufficient statistical power would be available to explore fully race differences in religion. More specifically, the final sample consisted of 748 older White and 752 older Black people. The overall response rate for the study was 62%.

Although there are 1,500 participants in this study, all respondents are not included in the analyses presented herein. The model depicted in Figure 1 focuses on congregational cohesiveness and church-based support. However, people must attend church to have an opportunity to build close ties with the people who worship there. Consequently, when the study questionnaire was designed, the research team concluded that it did not make sense to ask about things like congregational cohesiveness and receiving spiritual support from church members if people either never go to church, or attend worship services only once or twice a year. Based on this rationale, 374 study participants are excluded from the analyses because the questions dealing with congregational cohesiveness and church-based support were not administered to them.

A preliminary analysis of the data provided by the 1,126 eligible study participants revealed that the proportion of cases containing missing data ranged from 0% to 16%, with only two variables containing more than 8% item nonresponse. Using listwise deletion of missing data would have resulted in 734 cases with complete data. However, to avoid potential bias arising from item nonresponse, multiple imputation procedures were performed using the software developed by Schafer (1997). More specifically, the model depicted in Figure 1 was estimated in each of three complete data sets containing imputed values. Coefficients were then averaged across the three imputations to generate a single point estimate. Following this, standard errors were calculated by using a formula that combines the average of the squared errors of the estimates and the variances of the parameter estimates across the three samples (Schafer & Olsen, 1998). Based on these imputation procedures, the analyses performed herein were conducted with 1,126 cases.

Approximately 46% of the study participants were older White people, and 54% were older African Americans. The

Table 1. Study Measures

1. Frequency of Church Attendance[a]
A. How often do you attend religious services?
2. Congregational Cohesiveness[b]
A. I feel my beliefs and values are shared by most of the people in my congregation.
B. Most of the people in my congregation have similar ideas about where our church should be headed in the future.
C. Most people in my congregation tend to have the same outlook on life.
3. Spiritual Support[c]
A. Not counting Bible study groups, prayer groups, or church services, how often does someone in your congregation share their own religious experiences with you?
B. Not counting Bible study groups, prayer groups, or church services, how often does someone in your congregation help you find solutions to your problems in the Bible?
C. Not counting Bible study groups, prayer groups, or church services, how often does someone in your congregation help you to lead a better religious life?
4. Emotional Support from Church Members[c]
A. Other than your minister, pastor, or priest, how often does someone in your congregation let you know they love and care for you?
B. How often does someone in your congregation talk with you about your private problems and concerns?
C. How often does someone in your congregation express interest and concern in your well-being?
5. Connectedness with God[b]
A. I have a close personal relationship with God.
B. I feel that God is right here with me in everyday life.
C. When I talk to God, I know he listens to me.
6. Optimism[b]
A. I feel confident the rest of my life will turn out well.
B. I'm optimistic about my future.
C. In uncertain times, I usually expect the best.
7. Global Self-Rated Health[d]
A. How would you rate your overall health at the present time? Would you say your health is excellent, good, fair, or poor?

[a]This item was scored in the following manner (coding in parentheses): never (1); less than once a year (2); about once or twice a year (3); several times a year (4); about once a month (5); 2–3 times a month (6); nearly every week (7); every week (8); several times a week (9).

[b]These items were scored in the following manner: strongly disagree (1); disagree (2); agree (3); and strongly agree (4).

[c]These items were scored in the following manner: never (1); once in a while (2); fairly often (3); and very often (4).

[d]This item was scored in the following manner: poor (1); fair (2); good (3); and excellent (4).

average age of these individuals was 74.4 years (SD = 6.3 years). Approximately 38% were older men. Finally, these older adults indicated they had successfully completed an average of 11.6 years of schooling (SD = 3.4 years). These descriptive data, as well as the results presented herein, are based on weighted data. More specifically, data within the subsamples of older White and older Black people were weighted to information on age, gender, education, and region of the country (East, South, Midwest, West) contained in the May 2001 U.S. Census Bureau Current Population Statistics data file.

Measures

Table 1 contains the measures that were used to estimate the model depicted in Figure 1. The procedures used to code these items are provided in the footnotes of this table.

Frequency of church attendance.—A single item was used to determine how often study participants attended religious services in the past year. This indicator is coded so that a high score represents more frequent church attendance.

Congregational cohesiveness.—Three items were developed especially for this study to assess congregational cohesiveness. The extensive strategy that was implemented to develop these questions is discussed in detail by Krause (2002). As shown in Table 1, these indicators assess whether respondents feel their beliefs and values are shared by the people they worship with, and whether people in their congregation tend to have a similar outlook on life. These measures are coded so that a high score denotes greater congregational cohesiveness.

Spiritual support.—Spiritual support received from fellow parishioners is also measured with three indicators that were developed especially for this study. These items assess whether fellow church members share religious experiences with study participants, and whether fellow parishioners help them lead a better religious life. A high score on these measures indicates that respondents receive spiritual support more often from the people they worship with.

When these items were being developed, it quickly became evident that church members can provide spiritual support in two different contexts. First, as the work of Wuthnow (1994) reveals, people may provide spiritual support in formal church settings, such as Bible study groups, prayer groups, and formal worship services. Second, spiritual support may also be provided informally, because people interact with their fellow parishioners inside, as well as outside, the church. As shown in Table 1, the spiritual support questions devised for this study reflect assistance that was provided only in informal settings. The decision to focus on informal support was based on the following rationale. When the item development strategy for this study was being implemented, many study participants indicated that they considered sermons during formal worship services and collective congregational prayers to be a source of spiritual support. However, expanding the scope of inquiry to include these formal contexts tends to blur the boundaries between social support, formal worship services, and prayer. This creates problems

because an extensive literature reveals that formal worship services (Idler & Kasl, 1997) and prayer (Levin & Taylor, 1997) are complex social phenomena that may influence health in a number of ways that do not explicitly involve social support. As a result, it is harder to isolate the specific contributions of church-based support when it is provided in formal settings. To more clearly identify the underlying factors that may be at work, participants in the present study were instructed to exclude assistance obtained in Bible study groups, prayer groups, and formal worship services when answering the spiritual support questions.

Emotional support from church members.—Three indicators were used in this study to assess the amount of emotional support that older people receive from their fellow church members. These questions are revised versions of church-based emotional support items that were devised by the Fetzer Institute/National Institute on Aging Working Group (1999). As shown in Table 1, these items ask older respondents whether someone in their congregation told them they love and care for them, whether someone they worship with listened to them talk about their private feelings and concerns, and whether a fellow church member expressed interest or concern in their well-being. These indicators are coded so that a high score denotes more emotional support. In the process of answering these questions, respondents were instructed not to include emotional support from their minister, pastor, or priest. This was done because research by Krause and associates (2001) suggests that emotional support from the clergy and emotional support from fellow church members are not related to other facets of religion (i.e., religious coping responses) in the same way.

Connectedness with God.—Three measures were also devised specifically for this study to assess connectedness with God. These indicators gauge whether respondents feel they have a close personal relationship with God, whether they feel God is right there with them in daily life, and whether they believe God actually listens when they talk to Him. A high score on these items indicates that study participants feel they have a close and personal relationship with God.

Optimism.—Optimism is measured with three indicators. Two come from the scale developed by Scheier and Carver (1985). These items assess whether study participants expect the best in uncertain times and whether they are optimistic about the future. The third item deals with feeling confident that the rest of one's life will turn out well. This item was based on the input of respondents in our qualitative research (Krause, 2002). More specifically, a number of study participants indicated their faith made them feel more optimistic about the future, and they specifically noted that their religion made them feel that, no matter what happened in the future, things would turn out well. All three indicators are coded so that a high score denotes greater optimism.

Self-rated health.—Health is measured with a single item that asks respondents to rate their overall health as either excellent, good, fair, or poor (see Idler, 1999, for a detailed discussion of the utility of this measure). This widely used indicator is coded so that a high score reflects better self-rated health.

Race.—A binary variable is used to contrast older White people (scored 1) with older Black people (scored 0).

Demographic control measures.—The relationships between race, religion, optimism, and health were evaluated after the effects of age, sex, and education were controlled statistically. Age is scored in a continuous format. Similarly, education is coded in a continuous format reflecting the total number of years of completed schooling. Finally, sex is represented by a binary variable that contrasts men (scored 1) with women (scored 0).

Data Analysis Strategy

The analyses for this study were conducted in two parts that were designed to test for differential involvement in religion between older Black and White people, as well as the differential impact of religion across the two racial groups. The analyses that focus on differential involvement in religion are relatively straightforward. In this case, older Black and older White respondents are pooled to form a single group. Then, tests are performed to see if the binary measure contrasting members of the two racial groups is significantly related to the constructs depicted in Figure 1. These analyses were performed with Version 8.50 of the LISREL statistical software program (du Toit & du Toit, 2001).

The model depicted in Figure 1 was evaluated with the maximum likelihood estimator. However, use of this procedure rests on the assumption that the observed indicators in the model are distributed normally. Preliminary tests of the study measures (not shown here) revealed that this assumption had been violated. Fortunately, as du Toit and du Toit (2001) report, this problem can be handled by simply converting raw scores on the observed indicators to normal scores prior to model estimation (see p. 143). Based on this recommendation, all analyses presented in this study are based on variables that have been normalized.

In contrast with analysis of differential involvement in religion, tests for the differential impact of religion are more complex. As discussed previously, the differential impact perspective states, for example, that the relationship between congregational cohesiveness and spiritual support is stronger among older Black than older White people. Stated in more technical terms, this perspective specifies that there is a statistical interaction effect between race and congregational cohesiveness on spiritual support. Tests for this, as well as all other interactions by race, were performed using a subgroup approach. Once again, these analyses are conducted with Version 8.50 of the LISREL software program (du Toit & du Toit, 2001). Cast within the context of the present study, subgroup analysis involves partitioning the sample into two separate groups consisting of older White and older Black people, respectively. Then, two models identical to the one depicted in Figure 1 are created for each subgroup. These models are then estimated simultaneously. But, instead of making a single pass through the data, a series of nested models are used to test for race differences in

Table 2. Nested Model Tests

Model	Description
1	Baseline model—no equivalence constraints imposed across samples consisting of older White and older Black people
2	Factor loadings constrained to be equivalent across groups
3	Measurement error terms constrained to be equivalent across groups
4	All substantive parameter estimates (i.e., all paths in the structural equation model) constrained to be equivalent across groups

the hypothesized study linkages. These nested models are important because they evaluate assumptions in the measurement model, as well as substantive race differences in the relationships among the latent constructs. The series of nested models that were performed in this study are listed in Table 2.

The first specification in Table 2 (Model 1) allows all the parameters in the models to vary freely across the two subgroups. This provides the baseline for evaluating the utility of the remaining models. The next two models (Models 2 and 3) are designed to see if the elements of the measurement model are the same in subgroups consisting of older White and older Black people, respectively. These tests are important for the following reason.

If study measures mean the same thing to older White and older Black people, they will answer survey questions in the same way. If they answer the questions in the same way, the covariances among these items should be the same in both groups. To the extent this is true, the factor loadings and measurement error terms derived from these covariances should be the same as well. However, if the elements of the measurement model differ across groups, then there would be some evidence that measures of constructs like congregational cohesiveness and spiritual support do not mean the same thing to older White and older Black people. If this proves to be the case, it would be difficult to interpret substantive race differences in the model. This issue is known as the problem of factorial invariance (Bollen, 1989). It is important to conduct tests for factorial invariance because the wide majority of studies on race differences in religion overlook this fundamental measurement issue.

Tests for factorial invariance are performed in two steps. First, the factor loadings are constrained to be equivalent in the two groups (Model 2). If this equality constraint does not change the fit of the model to the data significantly (as reflected in change in χ^2 values), it is left in force when the next model is estimated. Model 3 tests a higher order, more restrictive, form of measurement equivalence. In particular, the measurement error terms associated with the observed indicators are constrained to be equivalent across groups. Once again, if this constraint does not change the fit of the model to the data significantly, it is left in place when the next model is evaluated.

Following tests for factorial invariance, the next step involves assessing whether there are race differences in the substantive relationships among the constructs shown in Figure 1. This is done in two steps. First, all the relationships among all the latent variables in Figure 1 are simultaneously constrained to be equivalent across groups (Model 4). This test is not unlike the overall F test in ordinary least-squares multiple regression analyses. The intent is to avoid capitalizing on chance by making a single pass through the data to see if any of the substantive relationships differ for older White and older Black people. If the fit of the model to the data deteriorates because of this comprehensive equivalence constraint, then it is permissible to conduct additional tests to see precisely where race differences arise. This latter series of tests (not shown in Table 2) involves working systematically through the model to see if each individual linkage differs across the two racial groups. So, for example, one test would involve constraining just the parameter estimate for the relationship between congregational cohesiveness and spiritual support to be equivalent across groups.

Results

Differential Involvement in Religion

The findings from the analyses that were designed to examine the differential involvement perspective are presented in three sections. First, the fit of the pooled latent variable model to the data is examined. Following this, the psychometric properties of the study measures are assessed. Finally, the substantive findings are reviewed.

Fit of the model to the data.—Data indicate that the fit of the latent variable model in Figure 1 to the data was good. More specifically, the Bentler-Bonett Normed Fit Index (NFI; Bentler & Bonett, 1980) estimate of 0.969 is above the recommended cutpoint of 0.900. Similarly, the standardized root mean square residual estimate of 0.025 is below the recommended ceiling of 0.050 (Kelloway, 1998). Finally, the Bollen's (1989) Incremental Fit Index (IFI) value of 0.978, as well as the Tucker-Lewis coefficient (Tucker & Lewis, 1973) estimate of 0.967, are quite close to the ideal target value of 1.0 for these indices.

Psychometric properties of the observed indicators.—Table 3 contains the factor loadings and measurement error terms that were derived from estimating the model in Figure 1. These coefficients are important because they provide preliminary information about the psychometric properties of the study measures. Although there are no firm guidelines in the literature, experience suggests that factor loadings in excess of 0.400 indicate that observed indicators tend to have reasonably good reliability and validity. As the data in Table 3 reveal, the factor loadings range from 0.607 to 0.932, suggesting that the measures used in this study have adequate psychometric properties.

Although the factor loadings and measurement error terms associated with the observed indicators provide useful information about the reliability of each item, it would be helpful to know something about the reliability of the scales taken as a whole. Fortunately, it is possible to compute these estimates with a formula provided by Rock, Werts, Linn, and Jöreskog (1977). Applying this formula to the data in Table 3 yields the following reliability estimates for the composite measures in this study: Congregational cohesiveness (.830), spiritual support (.817), emotional support

Table 3. Measurement Model Parameter Estimates for Main Study Measures Pooled Sample (N = 1,126)

Construct	Loading Factor[a]	Measurement Errors[b]
1. Frequency of Church Attendance	1.000	.000
2. Congregational Cohesiveness		
A. Beliefs and values shared[c]	.747	.441
B. Have similar ideas	.828	.314
C. Same outlook on life	.785	.383
3. Spiritual Support		
A. Share religious experiences	.780	.392
B. Find solutions in Bible	.781	.390
C. Lead better religious life	.759	.424
4. Emotional Support		
A. Love and care for you	.833	.306
B. Listen to private feelings and concerns	.607	.631
C. Expressed interest and concern	.839	.296
5. Connectedness with God		
A. Personal relationship with God	.862	.258
B. God right here with me	.932	.130
C. God listens	.861	.260
6. Optimism		
A. Life will turn out well	.713	.492
B. Optimistic about future	.750	.437
C. Expect the best	.812	.341
7. Self-Rated Health	1.000	.000

[a]Factor loadings are from the completely standardized solution. The first-listed item for each latent construct was fixed at 1.0 in the unstandardized solution.

[b]Measurement error estimates are from the completely standardized solution. All factor loadings and measurement error terms are significant at the .001 level.

[c]Item content is paraphrased for purposes of identification. See Table 1 for the complete text of each indicator.

(.808), connectedness to God (.917), and optimism (.803). As these estimates reveal, the reliability of the main study measures is good. These reliability estimates are reassuring because they provide one way of demonstrating that the time-consuming item development strategy followed in this study was justified (Krause, 2002).

Substantive findings.—Table 4 contains estimates of the substantive relationships among the constructs depicted in Figure 1. Consistent with the differential involvement hypothesis, data reveal that older Black people are more deeply involved in religion than older White people. More specifically, the findings reveal that, compared with older Black people, older White people report that their congregations are less cohesive ($\beta = -.103$; $p < .001$). Moreover, older White people indicate that they receive less spiritual support ($\beta = -.223$; $p < .001$) and less emotional support from church members ($\beta = -.201$; $p < .001$) than older African Americans. Data further suggest that, compared with older Black people, older White people do not feel as closely connected to God ($\beta = -.117$; $p < .001$). In contrast, no significant race differences were found in church attendance ($\beta = -.017$; not significant). This would initially appear to contradict the work of other investigators (e.g., Levin et al., 1994). However, it should be recalled that persons who never attend church or who attend worship services once or twice a year have been excluded from the present analyses. In fact, had these individuals been included in the analyses, then the anticipated relationship between race and church attendance would have emerged from the data (a table containing the results of these findings is available from the author).

In addition to race differences in religion, data further reveal that there are race differences in optimism as well. Consistent with the theoretical rationale developed for this study, the findings indicate that older White people are less optimistic than older African Americans ($\beta = -.173$; $p < .001$). Finally, the data suggest that older White people tend to rate their health slightly better than older Black people ($\beta = .087$; $p < .01$).

The findings also provide support for the theoretical rationale embedded in Figure 1. More specifically, the results suggest that older adults who attend church frequently are more likely to believe their congregations are highly cohesive than older people who do not go to church as often ($\beta = .245$; $p < .001$). Data further indicate that the wider social atmosphere of the congregation, in turn, tends to influence the amount of church-based support received by older adults. More specifically, greater congregational cohesiveness is associated with receiving more spiritual support ($\beta = .377$; $p < .001$) and more emotional support from one's fellow parishioners ($\beta = .306$; $p < .001$). The results in Table 4 also reveal that greater spiritual support is, in turn, associated with feeling more closely connected with God ($\beta = .156$; $p < .001$). But, in contrast, emotional support from fellow church members is not related significantly to feeling connected closely with God ($\beta = .069$; not significant). Taken together, these results suggest that it is explicitly religious support that promotes closeness with God and not more general feelings of emotional closeness with fellow church members. These results underscore the importance of assessing multiple dimensions of social support in the church.

Returning to Table 4, data further indicate that older people who feel close to God tend to be more optimistic ($\beta = .247$; $p < .001$). Finally, as the theoretical rationale developed for this study specifies, older people who are more optimistic indicate their health is better than older people who are less optimistic ($\beta = .138$; $p < .001$).

Taken as a whole, data reviewed up to this point provide support for the differential involvement perspective. In particular, the results suggest that older African Americans are more involved in religion than older White persons, and people who are more involved in religion tend to have better health. At the heart of this specification lies the simple notion that older Black people may derive greater health-related benefits from religion because they are more involved in it.

Differential Impact of Religion

The results of the analyses that assess the differential impact perspective are presented below in two sections. First, findings from tests of the nested subgroup models are presented. Second, substantive race differences in the relationships among the study measures are reviewed.

Nested model tests.—Select goodness-of-fit measures for the tests of the nested models are presented in Table 5. As the data in this table reveal, the fit of the baseline model

Table 4. Relationship Between Church-Based Support and Health Pooled Sample (N = 1,126)

	Dependent Variable						
Independent Variable	Church Attendance	Congregational Cohesiveness	Spiritual Support	Emotional Support	Connectedness With God	Optimism	Health
Age	−.017[a]	−.076***	−.160***	−.059*	−.009	−.014	−.057
	(−.043)[b]	(−.053)	(−.019)	(−.008)	(−.001)	(−.001)	(−.008)
Sex	−.062*	.015	−.008	−.108***	−.153***	.001	.028
	(−.201)	(.013)	(−.013)	(−.189)	(−.145)	(.001)	(.049)
Education	.055	−.075*	−.032	.018	−.067*	.090**	.217***
	(.026)	(−.009)	(−.073)	(.005)	(−.009)	(.012)	(.054)
Race	−.008	−.103**	−.223***	−.201***	−.117***	−.173***	.087**
	(−.027)	(−.090)	(−.345)	(−.342)	(−.109)	(−.151)	(.148)
Church Attendance		.245***	.275***	.308***	.140***	.011	.103***
		(.067)	(.134)	(.165)	(.041)	(.002)	(.055)
Congregational Cohesiveness			.377***	.306***	.171***	.248***	.081*
			(.669)	(.596)	(.182)	(.255)	(.158)
Spiritual Support					.156**	.098	−.066
					(.093)	(.057)	(−.072)
Emotional Support					.069	−.081	−.090
					(.038)	(−.043)	(−.089)
Connectedness with God						.247***	.018
						(.239)	(.032)
Optimism							.138***
							(.262)
Multiple R^2	.007	.085	.386	.314	.243	.238	.112

[a]Standardized regression coefficient.
[b]Metric (unstandardized) regression coefficient.
*$p < .05$; **$p < .01$; ***$p < .001$.

(model 1) to the data is acceptable. More specifically, the Bentler-Bonett NFI (Bentler & Bonett, 1980) estimate of .947, the standardized root mean square residual estimate of .030, Bollen's (1989) IFI value of .976, and the Tucker-Lewis coefficient value of .964 (Tucker & Lewis, 1973) are all close to their respective target values.

The first test of factorial invariance (see Model 2) indicates that constraining the factor loadings for older White and older Black people to be equivalent did not change the fit of the model to the data significantly. Evidence of this may be found by examining the change in chi-square values from Model 1 to Model 2 (χ^2 = 6.002 with 10 degrees of freedom is not significant). It may, therefore, be concluded that the factor loadings are invariant across groups, and the equality constraint is left in place as Model 3 is tested.

Table 5. Goodness-of-Fit Measures for Tests of Nested Models

				Tucker-Lewis			
Model	χ^2	df	χ^2 Change	Bentler NFI	Coefficient	Bollen IFI	SRMSE
1	460.655	260	—	.947	.964	.976	.030
2	466.657	270	6.002	.946	.967	.977	.032
3	564.413	285	97.756***	.935	.955	.967	.035
4	508.080	290	41.272**	.942	.966	.974	.040

Note: NFI = Normed Fit Index (Bentler & Bonett, 1980); coefficient = Tucker-Lewis coefficient (Tucker & Lewis, 1973); IFI = Incremental Fit Index (Bollen, 1989); SRMSE = Standardized root mean square error.
**$p < .01$; ***$p < .001$.

The test of Model 3 reveals that the measurement error terms associated with the observed measures are not invariant across groups. More specifically, the change in fit from Model 2 to Model 3 is statistically significant (χ^2 change = 97.756 with 15 degrees of freedom is significant at the .001 level). Viewed in conjunction with the tests for Model 2, these results indicate that the factor loadings are invariant, whereas the measurement error terms are not. Although it would have been preferable to find that all elements in the measurement model are invariant, Reise, Widaman, and Pugh (1993) argue that achieving even partial invariance is acceptable and that meaningful subgroup comparisons can be made even if only some of the factor loadings are invariant across groups. Because all the factor loadings in the present study are the same across groups, it is concluded that the measures used in this study are sufficiently invariant to warrant further examination of substantive race differences in the relationship between religion and health in late life.

Returning to Table 5, the next step in the nested model testing strategy involved exploring whether all the substantive relationships among the measures shown in Figure 1 are the same for older White and older Black people (see Model 4). As the findings in Table 5 reveal, one or more of the relationships among the substantive measures differ significantly by race. In particular, the change in chi-square values (41.272 with 20 degrees of freedom) was significant at the .01 level. Following this, 20 separate tests were constructed

to determine where specific race differences emerge. The findings from these analyses are not presented in Table 5, but a table containing the goodness-of-fit estimates from these individual tests can be obtained from the author.

The tests for race differences in the substantive relationships among the constructs in Figure 1 reveal that only 3 of 20 relationships differ significantly across the subgroups. Based on the analyses conducted up to this point, a final model was estimated in which the factor loadings and the 17 invariant substantive relationships were constrained to be equivalent across groups ($\chi^2 = 480.505$ with 287 degrees of freedom). Estimates provided by the NFI (.945; Bentler & Bonnet, 1980), the IFI (.977; Bollen, 1980), the Tucker-Lewis coefficient (.969; Tucker & Lewis, 1973), and the standardized root mean square residual index (.034) all suggest that the fit of this final model to the data was good.

Substantive race differences.—Because only 3 of 20 relationships in Figure 1 were found to vary across groups comprising older White and older Black people, tables containing the results of these subgroup analyses are not provided in this article. Instead, data are provided for only those instances in which statistically significant race differences emerged in the analyses. However, tables containing the full subgroup study findings may be obtained from the author. Two sets of estimates will be presented when reviewing the subgroup differences in the model. Standardized estimates are typically of interest when working with variables like congregational cohesiveness because these measures have no inherent nature metric. However, it is difficult to compare typical standardized estimates across subgroups because differences in the variances of the latent constructs may become confounded with differences in the substantive relationship between the latent variables across subgroups. To make direct comparisons of standardized coefficients possible, the LISREL software program provides common metric standardized estimates, which are based on pooled variances. It is for this reason that the first set of estimates to be examined consists of common metric completely standardized estimates. The second set of estimates that are provided are unstandardized regression coefficients.

The first substantive race difference in Figure 1 involved the relationship between church attendance and feeling closely connected to God. The findings reveal that the relationship between church attendance and feeling more closely connected to God is stronger in the subgroup consisting of older White people (common metric completely standardized estimate = .252; $b = .071$; $p < .001$) than the subgroup comprising older African Americans (common metric completely standardized estimate = .059; $b = .017$; not significant). The difference between the unstandardized estimates in each subgroup is significant at the .01 level. At first glance, this may appear to be at odds with the theoretical rationale provided earlier. However, it is important to consider these effects within the context of the wider conceptual model. The relationship examined previously represents the direct effect of church attendance on feeling closely connected with God. But, as shown in Figure 1, church attendance may also influence feeling close to God indirectly through congregational cohesiveness, spiritual support, and emotional support. Therefore, to get a more comprehensive view of the relationship between church attendance and feelings of connectedness with God, the direct effects must be examined in conjunction with the indirect and total effects. Unfortunately, the LISREL software program does not provide common metric completely standardized estimates for indirect and total effects. Therefore, conventional standardized estimates must be used for this purpose. As discussed previously, there are drawbacks in relying on these coefficients. However, as the findings that follow reveal, they still provide useful insights into the nature of the relationships among race, church attendance, and connectedness with God. Further analysis of the subgroup data reveal that the indirect effect of church attendance on connectedness with God for older White people is: $\beta = .108$; $p < .001$. The total effect for White people is: $\beta = .336$; $p < .001$. In contrast, the indirect effects of church attendance on feeling closely connected to God for older African Americans is: $\beta = .141$; $p < .001$. The corresponding total effect for older Black people is: $\beta = .209$; $p < .001$.

Viewed more generally, the total effects reveal that church attendance is related to feeling more closely connected with God among both older Black and older White people. However, older Black people who attend worship services often feel closer to God solely because of the indirect effects that operate through the key social factors in the model (i.e., congregational cohesiveness, spiritual support, and emotional support). This is consistent with theoretical discussions that highlight the pronounced social underpinnings of religion in the Black community (Chatters, 2000). In contrast, the social aspects of worship services also influence whether older White people feel close to God; but, above and beyond this, some other unmeasured factor(s) that is not in the model has an influence as well (i.e., this is captured by the direct effect for older White people). However, it is difficult to identify these unmeasured influences because the literature is not sufficiently developed at this time.

The second substantive race difference in the model depicted in Figure 1 involved the relationship between church attendance and optimism. Data reveal that older Black people who attend church services frequently tend to be more optimistic (common metric completely standardized estimate = .116; $b = .032$; $p < .05$). In contrast, frequent church attendance is associated with a slight decline in optimism among older White people (common metric completely standardized estimate = $-.096$; $b = -.027$; $p < .05$). The difference between these estimates is significant at the .01 level. It is not surprising to find that frequent church attendance is associated with greater optimism among older Black people. Attending church services represents a time when Black people become immersed in their own culture and associate with other Black people who share common life experiences, as well as similar cultural and religious values. Having these feelings and beliefs shared and validated in a context that is free of discrimination and prejudice may prove to be an especially important source of shared racial pride, hope, and optimism. In fact this is one reason why McRae and colleagues (1998) describe Black churches as "therapeutic systems."

It may, however, be less evident why more frequent church

attendance is associated with less optimism among older White people. Two points may help bring the finding involving older White people into sharper focus. First, the size of the direct effect is fairly modest (−.096). Second, and more important, further insight may be found by considering the indirect and total effects that operate through the model. More specifically, data indicate that the indirect effect of church attendance on optimism for older White people is: $\beta = .160$; $p < .001$. When this is coupled with the direct effects, the resulting total effect is not significant ($\beta = -.060$; not significant). In contrast, the indirect and total effects for older black people are $\beta = .102$; $p < .001$ and $\beta = .214$; $p < .001$, respectively. Viewed more generally, the total effects for older White and older Black people suggest that attending church bolsters the optimism of older Black people, but not older White people. Casting the findings in this way helps bring the results in line with current thinking about race differences in religion and optimism.

The final substantive race difference to emerge from the subgroup analyses involved the relationship between congregational cohesiveness and spiritual support. Consistent with the theoretical rationale provided earlier, data suggest that the relationship between congregational cohesiveness and spiritual support is stronger for older Black people (common metric completely standardized solution = .443; $p < .001$) than older White people (common metric completely standardized solution = .316; $p < .001$). The difference between these estimates is significant at the .05 level.

These specific race differences aside, it is important not to lose sight of the wider pattern of findings that have emerged across this entire study. Tests of the differential involvement perspective indicate that older Black people appear to be more involved in religion than older White people. In contrast, race differences emerged in only 3 of 20 relationships in the subgroup analyses, suggesting that the differential impact perspective figures less prominently in explaining race differences in religion and health in late life.

Discussion

Although many researchers believe that religion is associated with health, this view is not shared by all in the academic community. In their scathing critique of the literature, Sloan, Bagiella, and Powell (1999) focused primarily on methodological problems to call into question research on the religion-health connection. Although sound research methods are obviously important for establishing causal relationships, there is more to it than this. In their thought-provoking discussion, Bradley and Schaefer (1998) argue that finding a cogent theoretical rationale for describing the causal mechanisms that are at work is just as important as tending to the methodological prerequisites of causality. The research in the present study was guided by this rationale. In particular, a thorough item development strategy and rigorous data analytic procedures were combined with a well-articulated, conceptual model to outline one way in which religion may be related to the health of older people.

Developing a compelling theoretical rationale for this study was not easy. With insights provided by the founders of sociology, a model was crafted that took social relationships in the church as a point of departure (Durkheim, 1915; Simmel, 1905; Weber, 1922), but the work of these grand social theorists was hard to adapt because they did not propose explicit causal linkages that could be easily operationalized and subject to rigorous empirical scrutiny. To deal with this problem, a conceptual model was developed that was based on theoretical discussions in traditional sociology, findings from empirical studies, and the insights provided by the older men and older women who participated in the qualitative phase of this study (Krause, 2002). This conceptual scheme boldly underscores the social basis of religion and health in late life. This model began by recognizing that relationships among individuals in the church are shaped by the frequency of attendance at worship services, and the larger social climate of the congregation. In the process, an effort was made to select constructs that are especially salient in late life (i.e., connectedness with God) and that are uniquely religious in nature (i.e., spiritual support).

Consistent with classic views on the social underpinnings of religion, it was proposed that people who attend church more often will report that their congregations are more highly cohesive, and that congregations that were highly cohesive would be more likely to provide spiritual and emotional support to the people who worship there. The model further specified that older people who receive more church-based support tend to develop a closer and more personal relationship with God, and that connectedness with God is, in turn, related to optimism. Finally, more optimistic people were hypothesized to enjoy better health. Empirical assessment of this conceptual scheme provided support for these linkages. However, there was one notable exception.

Data suggest that spiritual support is related to feeling close to God, but emotional support from church members failed to exert a statistically significant effect. In fact, church-based emotional support was not associated with any of the constructs that come after it in the model (i.e., closeness to God, optimism, and health). Therefore, within the confines of the model developed for this study, the findings suggest that the health-related benefits of church-based support may be primarily associated with spiritual support provided by fellow church members.

There are four reasons why this research is noteworthy. First, there do not appear to be any studies on religion that have gone to such lengths to devise carefully crafted measures that are designed specifically for use with older people [see Krause (2002) for a discussion of this item development strategy]. Second, data come from a nationwide sample of older adults, making it possible to generalize the findings to a wider population than is typically studied in research on religion in late life. Third, this is the first time that a number of constructs contained in the study model have been linked to health in samples consisting of older people (e.g., congregational cohesiveness, spiritual support, and connectedness with God). Finally, race differences were carefully probed in the study model. Two contrasting views were evaluated to specify more clearly how the relationship between religion and health may differ for older White and older Black people: The differential involvement perspective and the differential impact perspective. Fairly pronounced race differences emerged from the findings. However, the weight of the evidence clearly appeared to favor

the differential involvement view—older Black people may be more likely to reap the benefits afforded by religion because they are more involved in it. This appears to be the first time in the literature that a set of invariant measures have been used to evaluate race differences in the social aspects of religion and health with a large national sample of older White and older Black people.

Although the analyses produced a number of new insights, the conceptual model was relatively straightforward. As a result, those wishing to pursue some of the ideas proposed in this study might begin by developing models that flush out various aspects of the theoretical rationale in greater detail. For example, a model might be crafted to explore more fully how individuals come to believe that people in their congregation share their values, beliefs, and outlook on life. Church size was described earlier, but testing for denominational differences might also provide valuable insight. More specifically, it might be useful to see if more fundamentalist denominations tend to be more cohesive than denominations with a more mainline or liberal perspective (Stark & Finke, 2000). Researchers might also pursue other ways to estimate the effects of congregational cohesiveness. For example, it might be helpful to interview a number of people in the same congregation and analyze their responses to congregational cohesiveness measures within a multilevel, data analytic framework.

Additional models might be devised to explicitly assess why connectedness with God may foster and maintain an older person's sense of optimism. Earlier, the work of Koenig (1994) was used to argue that closeness to God arises from several factors, including whether a person believed that God was in control of his or her life. However, the relationships among connectedness to God, control by God, and optimism were not examined empirically. It may be important to examine these relationships in the future.

Finally, to arrive at a better understanding of the potential health-related benefits of church-based support, it is important for researchers to compare and contrast support from fellow parishioners with assistance obtained in secular settings (e.g., support from neighbors or friends who are not religious). Although disentangling secular and sacred support is likely to pose significant challenges (Krause, 2001), this work is important because it will help researchers determine whether there is something truly unique about religious support or whether it merely reflects the influence of a largely secular process that happens to be taking place within the context of a particular organization.

In the process of exploring ways to expand the model that was devised for the present study, it is important to keep the limitations of this study in mind. Four limitations are reviewed briefly herein.

First, data for this study were gathered at a single point in time. Consequently, the temporal ordering among the study constructs was based on theoretical considerations alone. As a result, the proposed causal ordering could be reversed by arguing, for example, that receiving more spiritual support promotes the belief that one's congregation is more cohesive. Clearly, this as well as other causal assumptions that are embedded in the study model should be rigorously evaluated with data that have been collected at more than one point in time.

Second, with the exception of church attendance and the demographic control variables, the measures used in this study call for subjective evaluations of religion and health. The fact that these measures are correlated may be interpreted in two ways. One view, which is reflected in the model depicted in Figure 1, specifies that these correlations reflect underlying causal processes. So, for example, it is proposed that spiritual support leads older people to feel closer to God. But a second interpretation of these correlations is possible. Instead of reflecting causal processes, the correlations among the subjective measures may capture the influence of what Diener and associates (2000) call dispositional positivity. This means that some individuals have a propensity to evaluate various facets of life in a good way, and that this disposition operates over and above more objective influences. Cast within the context of the present study, this means that older people may rate spiritual support favorably and closeness to God favorably not because the former causes the latter, but because these evaluations reflect a general underlying tendency to view things in more positive ways. There is no clear way to resolve this issue at the present time, but it should be kept in mind as the findings from this study are reviewed.

Third, health was assessed in the present study with a single self-reported item. Although this indicator is used frequently in research, greater insights into the nature of religion and health may be obtained if researchers examine other health outcomes, such as physical functioning or specific chronic conditions (e.g., hypertension). Moreover, using more traditional biomedical markers of health (e.g., blood pressure measurements) would add further credibility to the connection between religion and health in late life.

Fourth, as the work of Wuthnow (1994) reveals, people can receive significant spiritual support from formal groups in the church, such as Bible study and prayer groups. However, when spiritual support was evaluated in the present study, the respondents were instructed not to include spiritual support obtained from these formal groups. Clearly, a high priority for the future is to compare and contrast the effects of support obtained from formal church groups with support received informally from fellow church members.

Religion is an incredibly vast conceptual domain that contains a bewildering number of facets or dimensions. As a result, it is difficult to identify, measure, and analyze all the ways in which religion may be related to health. This challenge was recognized many years ago by James (1902/1997), when he wrote his classic treatise on religion. In particular, he argued that, "The divine can mean no single quality, it must mean a group of qualities, by being champions of which in alternation, different men may all find worthy missions . . . So a 'god of battles' must be allowed to be the god for one kind of person, a god of peace and heaven and home, the god of another. We must frankly recognize the fact that we live in partial systems, and that parts are not interchangeable in spiritual life" (James, 1902/1997, p. 509). When viewed at the broadest level, the greatest contribution of the present study may arise from the fact that it provides useful procedures and templates to help other investigators frame their approach to studying the challenging, but

greatly rewarding, relationship between religion and health in late life.

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