



**RELIGIOUS INVOLVEMENT AND COGNITIVE
FUNCTIONING AT THE INTERSECTION OF
RACE-ETHNICITY AND GENDER IN OLDER
ADULTS.**

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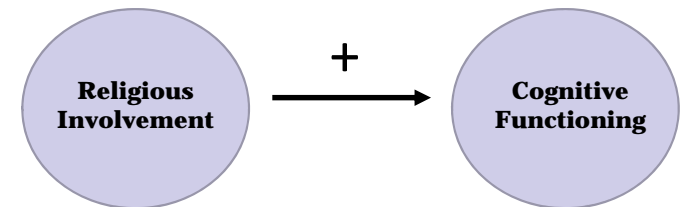
Cognitive Functioning Among Older Adults

- **Cognitive functioning** refers to the mental capacities involved in thinking, understanding, learning, remembering, problem solving and decision making.¹
 - Research finds race-ethnic and gender differences in cognitive functioning among older adults.^{2,3} Few studies examine cognitive functioning at the **intersection** of these important identities.⁴
 - Understanding what **social and cultural factors** preserve cognitive functioning at multiple axes of social stratification is essential to promoting healthy aging.^{5,6}

Cognitive Functioning and Religion

- Religious involvement may preserve cognitive functioning among older adults by
 - Reducing engagement in **risky health behaviors**
 - Promoting mental and **social engagement**
 - Lowering **anxiety and depression**
 - Conferring **meaning, control and comfort**^{6,7,8}

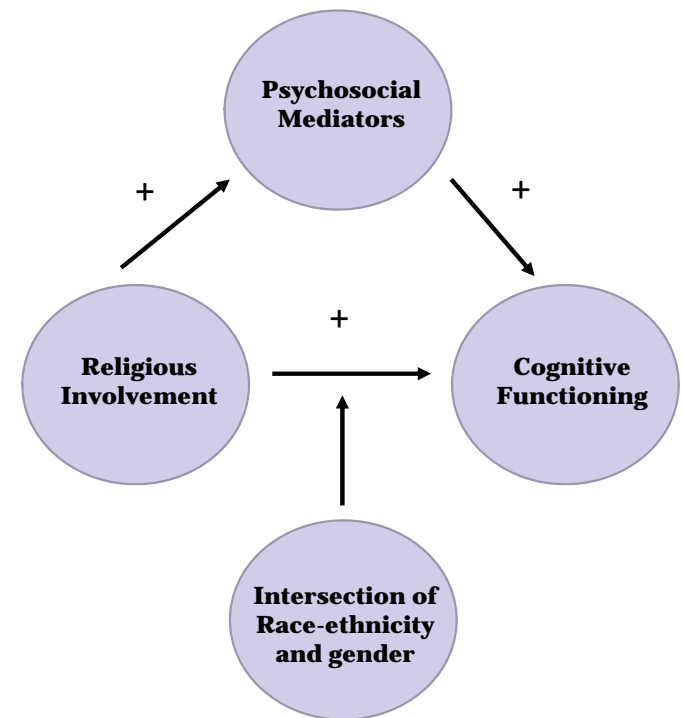
Conceptual Model



Cognitive Functioning and Religion

- Important **differences in religion by race-ethnicity and gender.**^{9,10}
 - Particularly important for Black women.¹¹
- **Psychosocial factors** may explain, in part or total, the link between religion and cognitive functioning among older adults.¹²
 - Positive self-perception, coherence, optimism

Conceptual Model



Purpose of the Study

- Examine whether the association between religious involvement and cognitive functioning varies at the intersection of race-ethnicity and gender among older adults.
- Examine whether psychosocial factors explain the association between religious involvement and cognitive functioning.

Data and Methods



The HRS is a nationally representative multi-disciplinary panel study of Americans over age 50.

Oversamples of African American and Latino older adults.

- Data from 2010/2012 Leave Behind Questionnaires.

Methods

Series of weighted OLS regression models and cross-product interaction terms (religion x race-ethnicity/gender subgroups).

All models control for: age, relationship status, birth cohort, education, household income, and stroke history.

Study Measures

Cognitive Functioning

- 7 tests of memory and mental status, (e.g., immediate and delay word recall and backwards counting)
- Ranging from 0-35, higher scores reflect higher cognitive functioning

Religious Involvement

- **Religious service attendance**
 - 3 dummy variables: never attend, infrequent attendance (i.e., once a month), and frequent attendance (i.e., daily or weekly) which serves as the reference category.
- **Religiosity**
 - 4-items capturing beliefs, values and coping (e.g., find strength and comfort; belief in a God who watches over me, etc.). Ranges from 6-24; higher scores reflect higher religiosity

Psychosocial Mediators

- 5 independent items measuring psychosocial resources: (1) Purpose in life; (2) Hopelessness; (3) Optimism; (4) Self-mastery; and (5) Constraints

Table 1: Descriptive Statistics

| | White Men (n=3,841) | White Women (n=5,222) | Black Men (n=655) | Black Women (n=1,340) | Latino Men (n=507) | Latino Women (n=731) |
|-----------------------------|-------------------------------|---------------------------------|-----------------------------|---------------------------------|------------------------------|--------------------------------|
| | Mean or % | Mean or % | Mean or % | Mean or % | Mean or % | Mean or % |
| Cognitive Functioning | 23.07 | 24.2 | 20.1 | 20.4 | 20.9 | 20.5 |
| Religiosity | 17.6 | 19.7 | 20.4 | 21.9 | 19.7 | 20.5 |
| <i>Religious attendance</i> | | | | | | |
| Never | 34.4% | 27.6% | 19.2% | 11.2% | 24.6% | 18% |
| Infrequent | 35.8% | 34.7% | 40.3% | 32.3% | 44.4% | 37.1% |
| Frequent | 29.7% | 37.8% | 40.6% | 56.6% | 31% | 44.9% |
| <i>Mediators</i> | | | | | | |
| Purpose in Life | 32.3 | 32.3 | 33.1 | 33.2 | 31.5 | 31.2 |
| Hopelessness | 9.2 | 8.8 | 9.8 | 9.4 | 10.7 | 10.5 |
| Optimism | 26.5 | 27.3 | 25.6 | 26.3 | 25.6 | 25.8 |
| Mastery | 23.8 | 23.6 | 23.5 | 23.4 | 24.7 | 23.4 |
| Constraints | 10.5 | 10.6 | 11.2 | 11.1 | 11.8 | 12 |

Table 2: Weighted Linear Regression Models Predicting Cognitive Functioning by Religious Involvement and Race-ethnicity and gender

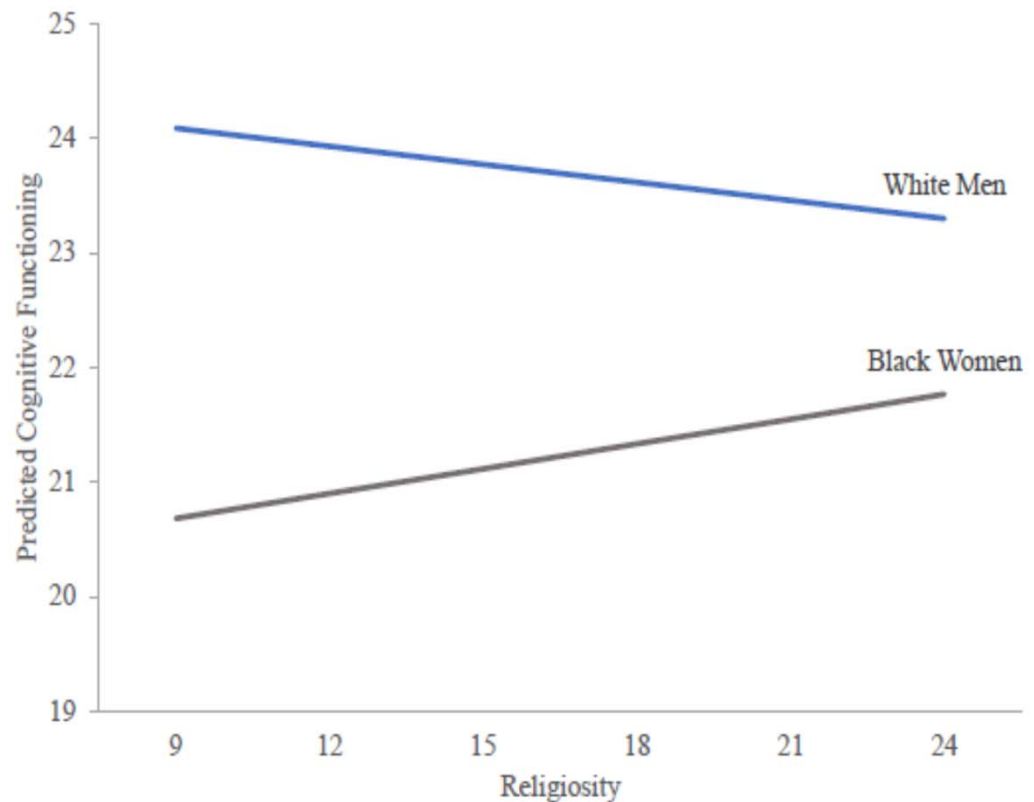
- Religiosity is inversely associated with cognitive functioning.
- Compared to individuals who frequent attend religious services, those who never attend report lower cognitive functioning.
- Compared with older White men, all race-ethnic and gender subgroups report lower cognitive functioning except for White women.

| | Main Effects Model |
|--------------------------------------|--------------------|
| Religiosity | -.03 (.01)* |
| Religious attendance ¹ | |
| Never attend | -.47 (.12)* |
| Infrequent attendance | -.09 (.10) |
| Race/ethnicity & gender ² | |
| White women | 1.00 (.09)* |
| Black men | -2.24 (.22)* |
| Black women | -1.87 (.17)* |
| Latino men | -1.41 (.25)* |
| Latino women | -1.21 (.23)* |

Note: *p<.05; All models control for: age, relationship status, birth cohort, education, income and stroke history. ¹Reference category: Frequent attendance. ²Reference category: white men

Differences in the Association between Religion and Cognitive Functioning by Race-ethnicity and Gender

Figure 1: Predicted cognitive functioning by religiosity at the intersection of race and gender



Note. Predicted values when all covariates are set to the referent group and age and household income held constant at the mean. Among Black women, slope for religiosity is significantly different from zero ($p < 0.05$).

Religion, Cognitive Functioning and Psychosocial Factors: Mediation Analysis

Table 2: Weighted Linear Regression Models Predicting Cognitive Functioning by Religiosity and Psychosocial Resources for White Men and Black Women, Stratified Estimates

| | White Men (n=3,841) | | Black Women (n=1,340) | |
|------------------|----------------------------|-------------------|------------------------------|-------------------|
| | Reduced Model | Full Model | Reduced Model | Full Model |
| Religiosity | -.04 (.01)* | -.05 (.01)* | .08 (.04)* | .06 (.03) |
| <i>Mediators</i> | | | | |
| Purpose in life | | .02 (.01) | | .06 (.02)* |
| Hopelessness | | -.04 (.02) | | -.01(.04) |
| Optimism | | .02 (.02) | | .06 (.03)* |
| Mastery | | .00 (.01) | | -.00 (.03) |
| Constraints | | -.06 (.02)* | | -.02 (.03) |

Note: *p<.05; All models control for: age, relationship status, birth cohort, education, income and stroke history

Conclusions and Future Directions

- Frequent religious service attendance protects cognitive function, while religiosity is inversely associated with cognitive health among older adults.
- Black women receive greater benefit from their religiosity
 - Results suggest a **distinct, overt importance of religion in daily life and a unique orientation and experience** with religion among Black women.^{10,11}
 - Religiosity is inversely associated with cognitive functioning among older white men. Future research examining the meaning of religion among older white men may be important.
- This work speaks to the importance of examining the social factors that influence healthy aging at the intersection of multiple identities.⁴

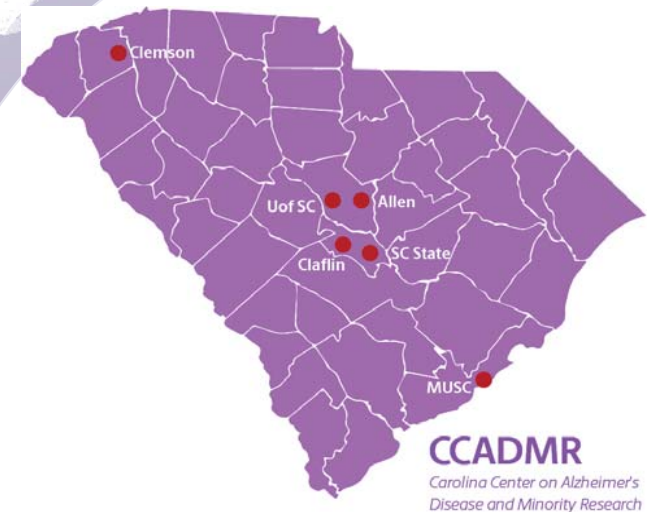


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Thank you!

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Supplemental Slides

Table 1: Characteristics of HRS Leave Behind 2010-12 Sample, Weighted estimates (n=12,296)

| | White Men n=3,841 | White Women n=5,222 | Black Men n=655 | Black Women n=1,340 | Hispanic Men n=507 | Hispanic Women n=731 |
|---------------------------|----------------------|------------------------|--------------------|------------------------|-----------------------|-------------------------|
| | Mean (SE) or % | Mean (SE) or % | Mean (SE) or % | Mean (SE) or % | Mean (SE) or % | Mean (SE) or % |
| Cognitive functioning | 23.7 (0.08) | 24.2 (0.07) | 20.1 (0.25) | 20.4 (0.19) | 20.9 (0.27) | 20.5 (0.25) |
| Religiosity | 17.6 (0.13) | 19.7 (0.10) | 20.4 (0.32) | 21.9 (0.15) | 19.7 (0.29) | 20.5 (0.27) |
| Church attendance | | | | | | |
| Not at all | 34.4% | 27.6% | 19.2% | 11.2% | 24.6% | 18.0% |
| Infrequent | 35.8% | 34.7% | 40.3% | 32.3% | 44.4% | 37.1% |
| Frequent | 29.7% | 37.8% | 40.6% | 56.5% | 31.0% | 44.9% |
| Demographics | | | | | | |
| Age | 64.6 (0.17) | 66.1 (0.17) | 62.2 (0.40) | 63.9 (0.36) | 61.7 (0.44) | 63.2 (0.43) |
| Marital status | | | | | | |
| Married | 73.1% | 57.4% | 49.7% | 29.5% | 65.8% | 50.1% |
| Unmarried | 11.0% | 7.9% | 24.3% | 20.6% | 14.7% | 10.8% |
| Separated/divorced | 10.9% | 14.3% | 19.7% | 27.2% | 15.8% | 21.9% |
| Widowed | 5.0% | 20.4% | 6.3% | 22.8% | 3.8% | 17.2% |
| Cohort | | | | | | |
| AHEAD | 2.5% | 4.7% | 1.3% | 3.1% | 1.4% | 1.9% |
| CODA | 7.0% | 9.0% | 3.6% | 5.8% | 2.5% | 4.5% |
| HRS | 19.8% | 20.8% | 16.9% | 18.3% | 15.0% | 17.9% |
| War Babies | 18.1% | 18.0% | 14.8% | 15.6% | 14.9% | 16.7% |
| Early Boomers | 25.4% | 22.6% | 26.5% | 25.5% | 28.8% | 24.6% |
| Mid Boomers | 27.3% | 24.9% | 36.8% | 31.7% | 37.3% | 34.5% |
| Education | | | | | | |
| < High school | 7.9% | 8.2% | 25.4% | 24.7% | 39.4% | 44.5% |
| HS graduate or GED | 31.3% | 36.0% | 34.2% | 32.6% | 27.1% | 27.1% |
| Some college | 25.0% | 27.9% | 27.0% | 28.3% | 19.7% | 18.2% |
| College and above | 35.8% | 27.9% | 13.4% | 14.4% | 13.8% | 10.2% |
| Household income (logged) | 11.0 (0.02) | 10.8 (0.02) | 10.1 (0.11) | 9.8 (0.07) | 10.1 (0.10) | 9.6 (0.12) |
| Ever had stroke | 5.6% | 4.6% | 12.4% | 8.0% | 6.9% | 5.1% |
| Mediators | | | | | | |
| Purpose in life | 32.3 (0.13) | 32.3 (0.11) | 33.1 (0.34) | 33.2 (0.23) | 31.5 (0.36) | 31.2 (0.35) |
| Hopelessness | 9.2 (0.10) | 8.8 (0.08) | 9.8 (0.27) | 9.4 (0.19) | 10.7 (0.33) | 10.5 (0.27) |
| Optimism | 26.5 (0.12) | 27.3 (0.10) | 25.6 (0.29) | 26.3 (0.21) | 25.6 (0.35) | 25.8 (0.28) |
| Mastery | 23.8 (0.10) | 23.6 (0.09) | 23.5 (0.30) | 23.4 (0.20) | 24.7 (0.31) | 23.4 (0.32) |
| Constraints | 10.5 (0.11) | 10.6 (0.09) | 11.2 (0.30) | 11.1 (0.21) | 11.8 (0.36) | 12.0 (0.32) |

Table 2: Weighted linear regression models predicting cognitive functioning in 2010/12 by religiosity and race/gender

| | Model 1 | Model 2 | Model 3 |
|---|----------------------|----------------------|----------------------|
| | b (SE) | b (SE) | b (SE) |
| Religiosity | -0.03 (0.01)* | -0.05 (0.01)* | -0.06 (0.01)* |
| Religious attendance (Ref=frequent) | | | |
| Never attend | -0.47 (0.12)* | -0.50 (0.12)* | -0.36 (0.12)* |
| Infrequent | -0.09 (0.10) | -0.10 (0.10) | -0.01 (0.10) |
| Race/ethnicity & gender (Ref=White men) | | | |
| White women | 1.00 (0.09)* | 0.59 (0.28)* | 0.45 (0.28) |
| Black men | -2.42 (0.22)* | -2.95 (0.84)* | -3.12 (0.84)* |
| Black women | -1.87 (0.17)* | -4.53 (0.85)* | -4.40 (0.80)* |
| Hispanic men | -1.41 (0.25)* | -2.68 (0.90)* | -2.65 (0.86)* |
| Hispanic women | -1.21 (0.23)* | -2.49 (0.87)* | -2.57 (0.93)* |
| <i>Interactions</i> | | | |
| White women x religiosity | | 0.02 (0.01) | 0.03 (0.01) |
| Black men x religiosity | | 0.03 (0.04) | 0.03 (0.04) |
| Black women x religiosity | | 0.12 (0.04)* | 0.11 (0.04)* |
| Hispanic men x religiosity | | 0.07 (0.04) | 0.06 (0.04) |
| Hispanic women x religiosity | | 0.06 (0.04) | 0.07 (0.04) |
| <i>Mediators</i> | | | |
| Purpose in life | | | 0.03 (0.01)* |
| Hopelessness | | | -0.02 (0.01) |
| Optimism | | | 0.05 (0.01)* |
| Mastery | | | 0.01 (0.01) |
| Constraints | | | -0.04 (0.01)* |
| Intercept | 24.19 (0.25)* | 24.56 (0.28)* | 24.70 (0.28)* |

Note: *p<.05; **p<.01; ***p<.001; All models control for: age, relationship status, birth cohort, education, income and stroke history.