Religion, Life and Active Life Expectancy in the United States

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Background

- Previous studies have documented a positive association between religion and physical and mental health and survival in the U.S.
- Most have found that the association is stronger for public religious activity compared to private religious expression or beliefs.
- Previous studies have some limitations:
  - Most are based on cross-sectional data.
  - Examined health outcomes or mortality separately, but not in combination.
Research Questions

• Is religiosity associated with active life expectancy among older adults in the US?
• Does the association vary across different dimensions of religion and religiosity?
• Is the association explained by sociodemographic and health covariates?
Health and Retirement Study

- Nationally representative longitudinal study of people over age 50 in the U.S.
- Biennial interviews beginning in 1992
- Data from 9 waves: 1998-2014
- Relatively high baseline (70-81%) and followup (87-89%) response rates
- Comprehensive mortality data; linkage to National Death Index
Religion/Religiosity Measures

• Religious affiliation (1998)
  – What is your religious preference; is it Protestant, Catholic, Jewish, some other religion, or do you have no preference?
    • Two classifications: Any vs. No affiliation; Protestant vs. Catholic

• Importance of religion (1998)
  – How important would you say religion is in your life; is it very important, somewhat important, or not too important?

• Frequency of service attendance (2004)
  – About how often have you attended religious services during the past year?
    • Once a week or more, less than once a week, never
Outcome Measure

Inactive = difficulty with any ADL or IADL, or unable to do or doesn’t do for health reason

**ADLs**
- Dressing
- Walking across a room
- Bathing or showering
- Eating
- Getting in/out of bed
- Using a toilet

**IADLs**
- Using a map
- Preparing a hot meal
- Shopping for groceries
- Making a phone call
- Taking medications
Methods

• Use SPACE to estimate expectancies and SEs

• Fit series of nested models
  • Model 1: gender and age only
  • Model 2: Model 1+ race/ethnicity, coupleness and region
  • Model 3: Model 2 + education and income
  • Model 4: Model 3 + health covariates (chronic diseases and health behaviors)

• Analysis samples
  • 1998-2014: age 55+ in 1998, n=20,017, median age=65
  • 2004-2014: age 55+ in 2004, n=20,029, median age=67
Transitions by Sample Persons (1998-2014)

<table>
<thead>
<tr>
<th></th>
<th>Active</th>
<th>Inactive</th>
<th>Dead</th>
<th>Total</th>
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<tbody>
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<td>56,609</td>
<td>9,424</td>
<td>3,004</td>
<td>69,037</td>
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<tr>
<td>Inactive</td>
<td>5,358</td>
<td>15,280</td>
<td>5,296</td>
<td>25,934</td>
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<tr>
<td>Total</td>
<td>61,967</td>
<td>24,704</td>
<td>8,300</td>
<td>94,971</td>
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## Published vs. Estimated Life Expectancy at Age 55

<table>
<thead>
<tr>
<th></th>
<th>Males</th>
<th>Females</th>
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<tbody>
<tr>
<td>2006 published</td>
<td>24.7</td>
<td>28.8</td>
</tr>
<tr>
<td>Estimated (1998-2014)</td>
<td>25.0</td>
<td>28.8</td>
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</tbody>
</table>
## Distributions for Religion Measures, by Sex (weighted)

<table>
<thead>
<tr>
<th>Affiliation</th>
<th>%</th>
<th>Attendance</th>
<th>%</th>
<th>Importance</th>
<th>%</th>
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<tr>
<td></td>
<td>M</td>
<td>F</td>
<td>M</td>
<td>F</td>
<td>M</td>
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<tr>
<td>Protestant</td>
<td>59.5</td>
<td>64.8</td>
<td>11.4</td>
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<td>Catholic</td>
<td>27.6</td>
<td>27.6</td>
<td>21.1</td>
<td>27.4</td>
<td>31.5</td>
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<tr>
<td>Jewish</td>
<td>2.7</td>
<td>2.4</td>
<td>12.1</td>
<td>12.4</td>
<td>17.6</td>
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<td>Other</td>
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<td>1.3</td>
<td>24.5</td>
<td>21.5</td>
<td></td>
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<tr>
<td>No affiliation</td>
<td>8.7</td>
<td>3.9</td>
<td>30.9</td>
<td>22.9</td>
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Expected years of disability-free and disabled life at age 65 for men, by religiosity measures
Expected years of disability-free and disabled life at age 65 for women, by religiosity measures.
Point estimates and 95% confidence intervals for total life expectancy at age 65 for men, by religiosity measures.
Point estimates and 95% confidence intervals for disability-free life expectancy at age 65 for men, by religiosity measures.
Point estimates and 95% confidence intervals for disabled life expectancy at age 65 for men, by religiosity measures

![Graph showing point estimates and 95% confidence intervals for disabled life expectancy at age 65 for men, by religiosity measures. The x-axis represents different religiosity measures: Unaffiliated, Affiliated, Protestant, Catholic, Low, Medium, High for both Importance and Attendance. The y-axis represents years.](image-url)
Point estimates and 95% confidence intervals for total life expectancy at age 65 for women, by religiosity measures.
Point estimates and 95% confidence intervals for disability-free life expectancy at age 65 for women, by religiosity measures.
Point estimates and 95% confidence intervals for disabled life expectancy at age 65 for women, by religiosity measures
Expected years of disability-free and disabled life at age 65 for men, by religiosity measures.
Expected years of disability-free and disabled life at age 65 for women, by religiosity measures

- **Attendance**: Unaffiliated, Low, Medium, High
- **Importance**: Unaffiliated, Low, Medium, High

**Graph Details**
- **Y-axis**: Years
- **X-axis**: Religiosity measures (Unaffiliated, Low, Medium, High)
- **Legend**: Disability free (blue), Disabled (red), % DF (black line)
- **Y-axis Values**: 0.00, 5.00, 10.00, 15.00, 20.00, 25.00, 30.00, 35.00, 40.00, 45.00, 50.00, 55.00, 60.00, 65.00, 70.00, 75.00, 80.00

**Legend Colors**
- Blue: Disability free
- Red: Disabled
- Black: % DF
Years gained at age 65, moving from lowest to highest level of attendance, by sex:

Model comparisons

<table>
<thead>
<tr>
<th></th>
<th>Models</th>
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<th>+ Dem</th>
<th>+ SES</th>
<th>Full</th>
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<tr>
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<td>Base</td>
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<td></td>
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<tr>
<td>Men</td>
<td>TLE</td>
<td>3.7*</td>
<td>3.6*</td>
<td>2.9*</td>
<td>2.2*</td>
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<tr>
<td></td>
<td>DFLE</td>
<td>3.0*</td>
<td>3.1*</td>
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<td>0.7</td>
<td>0.6</td>
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<td>Women</td>
<td>TLE</td>
<td>5.2*</td>
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<td>5.0*</td>
<td>3.8*</td>
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<tr>
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<td>DFLE</td>
<td>4.0*</td>
<td>4.6*</td>
<td>4.0*</td>
<td>3.2*</td>
</tr>
<tr>
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<td>DLE</td>
<td>1.2*</td>
<td>0.9*</td>
<td>1.0*</td>
<td>0.6</td>
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### Years gained at age 65, moving from medium to high importance, by sex: Model comparisons

<table>
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<tr>
<td></td>
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<td>Base</td>
<td>+ Dem</td>
<td>+ SES</td>
<td>Full</td>
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<tr>
<td>Men</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TLE</td>
<td>0.9*</td>
<td>1.2*</td>
<td>0.7</td>
<td>0.8</td>
<td></td>
</tr>
<tr>
<td>DFLE</td>
<td>0.4</td>
<td>0.7</td>
<td>0.3</td>
<td>0.5</td>
<td></td>
</tr>
<tr>
<td>DLE</td>
<td>0.5*</td>
<td>0.5*</td>
<td>0.4</td>
<td>0.3</td>
<td></td>
</tr>
<tr>
<td>Women</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TLE</td>
<td>0.7</td>
<td>1.0</td>
<td>1.2*</td>
<td>0.7</td>
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<td>DFLE</td>
<td>-0.1</td>
<td>0.4</td>
<td>0.6</td>
<td>0.3</td>
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<td>DLE</td>
<td>0.8*</td>
<td>0.6</td>
<td>0.6*</td>
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Summary

• Q1: Is religiosity associated with active life expectancy among older adults in the US?
  – Yes

• Q2: Does the association vary across different dimensions of religion and religiosity?
  – Yes. The association is strongest for religious service attendance and weaker and/or more variable for affiliation and importance.

• Q3: Is the association explained by sociodemographic and health covariates?
  – To some extent. For attendance, the differentials are reduced but remain statistically significant.
Limitations

- Results are preliminary, need to rerun models with more rigorous specifications
  - Higher # bootstraps, larger simulation cohort size
- Limited measures of religiosity in HRS
  - Additional measures in 2016 experimental module
- Used a single, broad outcome variable (any ADL or IADL limitation)
  - Examine other disability and health outcomes
Acknowledgements

• This research is supported by a grant from the John Templeton Foundation (grant Number 57521) entitled: “Linking spirituality and religiosity to life and health expectancy: A global comparative study.”

• The Health and Retirement Study is funded by the U.S. National Institute on Aging (U01AG009740), with supplemental support from the Social Security Administration.
Gracias!

Project website:
https://globalagingandcommunity.com/religion-and-health-expectancy/

HRS website:
http://hrsonline.isr.umich.edu
Point estimates and 95% confidence intervals for TLE at age 65 for men, by combined religiosity measures.
Point estimates and 95% confidence intervals for TLE at age 65 for women, by combined religiosity measures
Comparison of expectancies and standard errors from preliminary and final models: Men, age 65

<table>
<thead>
<tr>
<th>Importance of religion</th>
<th>Model</th>
<th>TLE</th>
<th>SE</th>
<th>DFLE</th>
<th>SE</th>
<th>DLE</th>
<th>SE</th>
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<tbody>
<tr>
<td>Very</td>
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<td>16.97</td>
<td>0.11</td>
<td>12.40</td>
<td>0.13</td>
<td>4.57</td>
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<td></td>
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<td>17.02</td>
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<td>12.39</td>
<td>0.19</td>
<td>4.63</td>
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<td>Somewhat</td>
<td>Prelim</td>
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<td>Final</td>
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<td>13.11</td>
<td>0.16</td>
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<td>0.09</td>
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<td>Not very</td>
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<td>8.35</td>
<td>0.22</td>
<td>6.88</td>
<td>0.16</td>
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