Religion, Spirituality and Health
Research Establishing the Connections

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Overview

1. Prevalence of religious belief
2. Role of religion in coping
3. Research on religion and mental health
4. Research on religion and physical health
5. Theoretical model explaining effects
6. Conclusions
7. Further resources
Religious Belief in the United States
Do you happen to be a member of a church, synagogue or mosque?

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% Yes

Year | % Yes
---|---
1938 | 73
1944 | 72
1950 | 75
1956 | 76
1962 | 73
1968 | 73
1974 | 71
1980 | 71
1986 | 68
1992 | 67
1998 | 65
2004 | 65
2010 | 61
2016 | 54

GALLUP
Did you, yourself, happen to attend church, synagogue or mosque in the last seven days, or not?

% Yes, attended

GALLUP
How important would you say religion is in your own life -- very important, fairly important or not very important?

% Very important

1968: 70
1972: 52
1976: 55
1980: 55
1984: 53
1988: 55
1992: 58
1996: 59
2000: 61
2004: 61
2008: 56
2012: 56
2016: 53

GALLUP
The Z Generation (ages 13-18 in 2016) in U.S.

Religious affiliation

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Affiliation</th>
</tr>
</thead>
<tbody>
<tr>
<td>9%</td>
<td>Engaged Christian</td>
</tr>
<tr>
<td>33%</td>
<td>Churched Christian</td>
</tr>
<tr>
<td>16%</td>
<td>Unchurched Christian</td>
</tr>
<tr>
<td>7%</td>
<td>Other Faith</td>
</tr>
<tr>
<td>34%</td>
<td>No religious affiliation</td>
</tr>
<tr>
<td>(13%)</td>
<td>Atheist vs. 6% of all adults</td>
</tr>
</tbody>
</table>

Religious beliefs very important to sense of self = 34%
Convinced that God exists = 54% (vs. 64% of adults; 71% in Pew Study)
Not possible to know that God is real = 37%

Reasons for doubting:

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Reason</th>
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</thead>
<tbody>
<tr>
<td>29%</td>
<td>Good God allows too much suffering</td>
</tr>
<tr>
<td>23%</td>
<td>Christians are hypocrites (don’t practice what preach)</td>
</tr>
<tr>
<td>20%</td>
<td><strong>Science refutes too much of the Bible</strong></td>
</tr>
</tbody>
</table>

Source: 2016 Barna research group: [https://www.barna.com/research](https://www.barna.com/research)
Research on Religion, Spirituality and Mental Health
Religion as a Coping Behavior

1. Many persons turn to religion for comfort

2. Religion used to cope with common problems in life, especially highly stressful situations

3. Religion often used to cope with challenges such as:
   - uncertainty
   - fear
   - loss of control
   - discouragement and loss of hope

“When you have no where to go, go to your knees”
Stress-induced Religious Coping

America’s Coping Response to Sept 11th:

1. Talking with others (98%)
2. Turning to religion (90%)
3. Checked safety of family/friends (75%)
4. Participating in group activities (60%)
5. Avoiding reminders (watching TV) (39%)
6. Making donations (36%)

Based on a random-digit dialing survey of the U.S. on Sept 14-16

*New England Journal of Medicine* 2001; 345:1507-1512
Religious Coping – does it help?
Review of the Research
1887 to 2018

Handbook of Religion and Health

Religion and Mental Health: Research & Clinical Applications
(Academic Press, 2018)
Religious involvement is related to:

Less depression, faster recovery from depression
272 of 444 studies (61%)
[67% of best]

More depression (6%)
Neuroanatomical Correlates of Religiosity and Spirituality

A Study in Adults at High and Low Familial Risk for Depression

Lisa Miller, PhD1,2; Ravi Bansal, PhD2,3; Priya Wickramaratne, PhD2,4,5; Xuejun Hao, PhD2,3; Craig E. Tenke, PhD6; Myrna M. Weissman, PhD2,4,5; Bradley S. Peterson, MD2,3

Religion/Spirituality and Cortical Thickness: A functional *MRI Study*

Areas in **red** indicate reduced cortical thickness

Citation: Miller L et al (2014). Neuroanatomical correlates of religiosity and spirituality in adults at high and low familial risk for depression. *JAMA Psychiatry* 71(2):128-35
Religious involvement is related to:

Less suicide and more negative attitudes toward suicide (106 of 141 or 75% of studies)
Nurses Health Study: 89,708 women followed from 1996 to 2010 (HR=0.16, 95% CI 0.06-0.46) \textsuperscript{\textregistered} VanderWeele et al (2016). \textit{JAMA Psychiatry} (Archives of General Psychiatry) 73(8):845-851
Religious involvement is related to:

Less alcohol use / abuse / dependence
240 of 278 studies (86%)

[90% of best designed studies]
Religious involvement is related to:

Less drug use / abuse / dependence
155 of 185 studies (84%)

[86% of best designed studies]
[95% of RCT or experimental studies]
Well-being and Happiness
(systematic review)

Religious involvement is related to:

Greater well-being and happiness
256 of 326 studies (79%)

[82% of best]

Lower well-being or happiness (3 of 326 studies, <1%)
Religious involvement is related to:

Greater meaning and purpose
42 of 45 studies (93%)
[100% of best]

Greater hope
29 of 40 studies (73%)

Great optimism
26 of 32 studies (81%)

*All of the above have consequences for patients’ motivation for self-care and efforts toward recovery*
Religious involvement is related to:

- Great social support
  (61 of 74 studies) (82%)
At least 104 quantitative peer-reviewed studies have now been published that have examined the spirituality-delinquency/crime relationship. Of those, 82 (79%) reported inverse relationships between spiritual involvement and delinquency or crime.

Of the 60 best studies, 82% found significant inverse relationships.

Of the studies published during the past 10 years that have examined relationships between spiritual involvement and school performance (GPA or persistence to graduation), all 11 (100%) indicated that spiritual students performed significantly better.
Divorce, domestic abuse, single-parent families
(systematic review)

Religious involvement is related to:

Great marital stability - less divorce, greater satisfaction, less spousal abuse, more likely to have intact family with two parents in home (68 of 79 studies or 86%)
Conclusions

1. Religion is commonly used to cope in response to stress, loss, or sickness

2. Religious involvement is associated with less depression, lower suicide, faster recovery from PTSD, greater happiness and emotional well-being, less substance use and abuse, and better social and marital health
Research on Religion, Spirituality and Physical Health
Research on Religion & Health Behaviors
Religion is related to:

- More exercise/physical activity (25 of 37 studies) (68%)
- Less extra-marital sex, safer sexual practices (fewer partners) (82 of 95 studies) (86%)
- Lower weight (7 of 36 studies) (19%)
- Heavier weight (14 of 36 studies) (39%)
Religious involvement is related to:

Less cigarette smoking, especially among the young (122 of 135 studies) (90%)
Religion and Physical Health
The Mind-Body Relationship
Interaction of the Brain and Immune System

- Hypothalamus
- CRH
- Locus Ceruleus
- Nucleus of the Tractus Solitarius
- Pituitary Gland
- Adrenal Glands
- Cytokines
- Sympathetic Nervous System
- Immune Organs
- Immune Cells
- Vagus Nerve
- ACTH
- Cortisol
Immune and Endocrine Functions
(systematic review)

Religious involvement is related to:

Better immune functions
(14 of 25 studies) (56%)

Better endocrine functions
(23 of 31 studies) (74%) (majority involving meditation)
Serum IL-6 and Attendance at Religious Services
(1675 persons age 65 or over living in North Carolina, USA)

* bivariate analyses
** analyses controlled for age, sex, race, education, and physical functioning (ADLs)

Citation: International Journal of Psychiatry in Medicine 1997; 27:233-250
Attending religious services more than once weekly was a significant predictor of lower subsequent 12-year mortality and elevated IL-6 levels (> 3.19 pg/mL). Mortality was lower by 68% (OR=0.32, 95% CI = 0.15-0.72; p <.01) and likelihood of having high IL-6 levels was reduced by 66% (OR=0.34, 95% CI = 0.16-0.73, p <.01) among weekly attendees, compared with those never attending religious services. Results were independent of covariates including age, sex, health behaviors, chronic illness, social support, and depression.

Religious involvement is related to:

- Lower blood pressure
  (36 of 63 studies) (57%)

- Better cardiovascular functions (CVR, HRV, CRP)
  (10 of 16 studies overall) (63%)

- Less coronary artery disease
  (12 of 19 studies overall) (63%)
Religious Activity and Diastolic Blood Pressure
(n=3,632 persons aged 65 or over)

Citation: International Journal of Psychiatry in Medicine 1998; 28:189-213

* Analyses weighted & controlled for age, sex, race, smoking, education, physical functioning, and body mass index

High = weekly or more for attendance; daily or more for prayer
Low = less than weekly for attendance; less than once/day for prayer
Mortality From Heart Disease and Religious Orthodoxy
(based on 10,059 civil servants and municipal employees)

Kaplan-Meier life table curves (adapted from Goldbourt et al. 1993. Cardiology 82:100-121)

Differences remain significant after controlling for blood pressure, diabetes, cholesterol, smoking, weight, and baseline heart disease.

Follow-up time, years
Survival probability
Most Orthodox
Non-Believers
Kaplan-Meier life table curves (adapted from Goldbourt et al. 1993. Cardiology 82:100-121)
Six-Month Mortality After Open Heart Surgery

(232 patients at Dartmouth Medical Center, Lebanon, New Hampshire)

Citation: Psychosomatic Medicine 1995; 57:5-15

% Dead

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<tbody>
<tr>
<td>Hi Religion LO</td>
<td>(7 of 86)</td>
<td>(2 of 25)</td>
<td>(2 of 72)</td>
<td>(10 of 49)</td>
</tr>
<tr>
<td>Lo Religion HI</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High Religion</td>
<td></td>
<td></td>
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<tr>
<td>High Social Support</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Low Religion</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Low Social Support</td>
<td></td>
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Mortality (all-cause) (systematic review)

Religious involvement related to:

• Greater longevity in 82 of 120 studies (68%)

• Shorter longevity in 7 of 120 studies (6%)
Multivariable Adjusted Hazard Ratio with 95% Confidence Intervals
(reference category "never attend", with gradient of effect p<0.001)

Nurses Health Study: 74,534 women followed from 1996-2012
Multivariable-Adjusted Hazard Ratios and 95% Confidence Intervals (reference category "never attend" with gradient of effect p<0.001)

Cardiovascular Mortality (HR)

- >Once/Week: HR=0.73
- Once/Week: HR=0.80
- <Once/Week: HR=0.92

Cancer Mortality (HR)

Multivariable-adjusted Hazard Ratios and 95% Confidence Intervals
(reference category "never attend" with gradient of effect $p<0.001$)

<table>
<thead>
<tr>
<th>Religious Attendance</th>
<th>Hazard Ratio (HR)</th>
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<tr>
<td>&gt;Once/Week</td>
<td>0.79</td>
</tr>
<tr>
<td>Once/Week</td>
<td>0.86</td>
</tr>
<tr>
<td>&lt;Once/Week</td>
<td>0.91</td>
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### Mediation Analysis for the Religious Attendance – All-Cause Mortality Effect

<table>
<thead>
<tr>
<th>Variable</th>
<th>Effect Size</th>
<th>p-value</th>
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<tr>
<td>Depressive Symptoms (CES-D)</td>
<td>11%</td>
<td>p&lt;0.001</td>
</tr>
<tr>
<td>Current Smoking</td>
<td>22%</td>
<td>p&lt;0.001</td>
</tr>
<tr>
<td>Optimism</td>
<td>9%</td>
<td>p&lt;0.001</td>
</tr>
<tr>
<td>Social Integration</td>
<td>23%</td>
<td>p=0.003</td>
</tr>
<tr>
<td>Unexplained</td>
<td>35%</td>
<td></td>
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</tbody>
</table>

(no mediation for alcohol use, diet quality, phobic anxiety)

The Relationship between Religion and Health: All Studies

Number of studies includes some studies counted more than once (see Appendices of 1st and 2nd editions). Prepared by Dr. Wolfgang v. Ungern-Sternberg
Belief in, attachment to God
Public prac, rit
Private prac, rit
R commitment
R coping

Positive Emotions
Social Connections
Negative Emotions
Mental Disorders

Psychological Traits / Virtues
Forgiveness
Honesty
Courage
Self-discipline
Altruism
Humility
Gratefulness
Patience
Dependability

Immune, Endocrine, Cardiovascular Functions
Physical Health and Longevity

Genetics, Developmental Experiences, Personality

Theological Virtues: faith, hope, love

*Model for Western monotheistic religions (Christianity, Judaism, and Islam)
Conclusions

1. Religious involvement (RI) is related to better mental, social, and behavioral health, and improves these aspects of health over time.

2. As RI lessens in the U.S. and Western world (the result of increasing secularization), crime rates, alcohol & drug use, and addiction are increasing.

3. RI is also related to better physical health, less functional disability, and less cognitive decline with aging.

4. These findings have huge implications for public health and healthcare costs as RI becomes less common with each younger cohort.

5. The clinical applications are vast in terms of provision of mental and physical health care (I will be describing those applications during my next session at 1:30-2:30 this afternoon).
Relevance to Loma Linda University

• Loma Linda University should be at the forefront of academic institutions conducting research in this area, educating health professionals about the results of that research, and advancing our knowledge about the effectiveness of integrating spirituality into patient care.

• Of all healthcare systems in the world, the Adventist Health System should be the first to assess and address the spiritual needs of all patients in a systematic manner, both outpatients and inpatients (as this is central to their mission).

I will be making specific recommendations with regard to research, education, and clinical applications for Loma Linda University at the session this afternoon from 4:30-5:00.

Tomorrow morning from 9:00-12:00 noon, I will be describing how researchers at LLU can proceed in achieving these goals.
Further Resources
Monthly FREE e-Newsletter

CROSSROADS… Exploring Research on Religion, Spirituality & Health

- Summarizes latest research
- Latest news
- Resources
- Events (lectures and conferences)
- Funding opportunities

To sign up, go to website: http://www.spiritualityandhealth.duke.edu/
Spirituality & Health Research

Methods
Measurement
Statistics
and Resources

Harold G. Koenig, MD
Summer Research Workshop
August 12-16, 2019
Durham, North Carolina

5-day intensive research workshop focus on what we know about the relationship between spirituality and health, clinical applications, how to conduct research, and how to develop an academic career in this area. Faculty includes leading spirituality-health researchers at Duke, Yale University, Emory, and elsewhere.

- Strengths and weaknesses of previous research
- Theological considerations and concerns
- Highest priority studies for future research
- Strengths and weaknesses of measures of religion/spirituality
- Designing different types of research projects
- Primer on statistical analysis of religious/spiritual variables
- Carrying out and managing a research project
- Writing a grant to NIH or private foundations
- Where to obtain funding for research in this area
- Writing a research paper for publication; getting it published
- Presenting research to professional and public audiences; working with the media

**Partial tuition Scholarships are available**

If interested, contact Dr. Koenig: Harold.Koenig@duke.edu
Welcome

The Center was founded in 1998, and is focused on conducting research, training others to conduct research, and promoting scholarly field-building activities related to religion, spirituality, and health. The Center serves as a clearinghouse for information on this topic, and seeks to support and encourage dialogue between researchers, clinicians, theologians, clergy, and others interested in the intersection.

Mission

The five main goals of the Center are to:

- Conduct research on religion, spirituality and health
- Train those wishing to do research on this topic
- Interpret the research for clinical and societal applications
- Explore the meaning of the research for pastors and theologians
- Discuss how theological input can advance the research

Upcoming Events

16th Annual 5-day Spirituality and Health Research Workshop (August 12-16, 2019)

Recent News

Religion and Mental Health Review (new)

Resources on Moral Injury

2017 Mental Health and Religion Book Series

Health and Well-being in Islamic Societies

Latest Research on Spirituality and Well-being in Duke Health
Questions and Discussion