

Religiousness, Spirituality and Survival in Two Longitudinal Studies

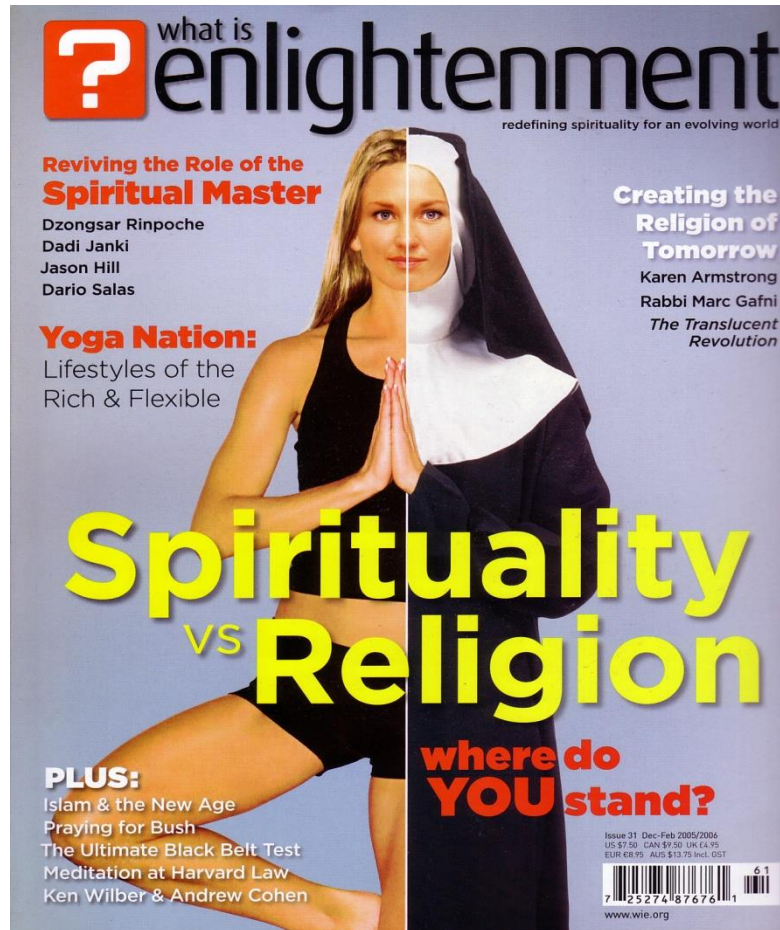
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University of Miami
Talk given for Duke University
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Importance of Spirituality and Religion

- ▶ Crisis points are times when people turn to spirituality to cope
- ▶ A national survey showed after 9/11 90% turned to religion/God to cope (Schuster, 2001.)
- ▶ In a US survey 55% pray at least daily (Pew,2022). Prayer for oneself (43%) and for others (24.4%) were the most commonly used “alternative” medicine technique used (Barnes et al, 2002).
- ▶ The vast majority of U.S. adults believe in God, but the 81% who do so is down six percentage points from 2017 and is the lowest in Gallup's trend. Between 1944 and 2011, more than 90% of Americans believed in God.
- ▶ After HIV diagnosis, far more increased in spirituality (45%) than decreased (about 15%). This increase in spirituality predicted slower disease progression over 4 years.

Ironson, Stuetzle, Fletcher(2006), JGIM

When I saw the (research) light: Interest burgeoned in the mid-1990's:



- ▶ Number of articles on spirituality and health doubled between 1994 and 1997,
 - ▶ 58% to 82% people saying want to experience spiritual growth 1994 - 1998
- Gallup

Spirituality/Religiosity and Mortality

- - ▶ In initially healthy people, 69 prospective studies :Following people over time, there is a lower mortality risk ($HR = .82$) for those who are R/S. **Most studies used religious service attendance and/or church activity as the predictor (about 75%).** Studies measuring multidimensional aspects of R/S had the greatest effect Hazard Ratio = .55, $p = .002$, but only 3 studies. Chida, Steptoe, and Powell (Psychotherapy and Psychosomatics, 2009; 78:81-90).
 - ▶ Powell et al.(2003) Am Psychologist Church/service attendance predicts approximately 25% reduction in mortality risk after adjusting for confounders. Health behaviors account for about half of this effect.
 - ▶ McCullough et al (2000) Religious involvement predicts lower all cause mortality (42 studies, $OR = 1.29$)

Research Findings

Spirituality and Mental Health

- ▶ Koenig reviewed over 1,000 studies
- ▶ Buffers from worry, less anxious
- ▶ Less depressed, less suicidal (small effect)
- ▶ less substance use, used in AA programs
- ▶ Better able to cope with crisis such as illness, divorce, bereavement
- ▶ Higher on happiness (positive emotions, satisfaction with life) - attending services, reading inspirational passages, praying
- ▶ J. Appl Psychoanal Studies, 2010; 7(2)

Overview

- ▶ Background for the two longitudinal studies _ Nationwide Landmark Study and HIV study
- ▶ Religiousness, Spirituality, and Survival Findings
 - ▶ Religious Identities
 - ▶ Traditional Variables - Church Attendance, Prayer
 - ▶ Use of Spirituality/Religiousness to Cope
 - ▶ Hope
 - ▶ Meaning
 - ▶ Beliefs - View of God; Spiritual struggles
 - ▶ The Golden Rule - Compassion for others, Acts of Kindness
 - ▶ Which comes first? Health or S/R engagement

Two major Longitudinal Studies

Stress and Coping with HIV -
17 year follow-up

Funded by NIMH two RO1's

Landmark Study on Spirituality,
Positive Psychology and Health:
6 year follow-up

Funded by the Templeton Foundation

Why HIV?

- ▶ Group of marginalized people with severe stressors
- ▶ We can learn from their ability to deal with stress
- ▶ Very clear biological markers of disease progression (CD4 and VL)
- ▶ It's a virus (and we know psych influences viruses - e.g. Sheldon Cohen's tightly controlled studies)
- ▶ Can control for initial disease status.
- ▶ With the advent of good medications, we are able to see if psychological factors still predict when controlling for medications.
- ▶ Timing.

Overview Stress and Coping in HIV (Long Term Survivor Study): Perhaps psychological factors most important in the mid-range of illness

- ▶ 177 people with HIV in the mid-range of illness (CD4 between 150 and 500), never had category C sx (no clinical AIDS), CD4 nadar not below 75 CD4's
- ▶ Diverse sample of people with HIV (men, women; black, hisp, non-hisp white)
- ▶ Interview and questionnaires every 6 months for 12 years.
- ▶ Blood draw for immune measures: CD4, VL, NK # and NK cyto
- ▶ Urine for cortisol and NE. (NE and cortisol predicted DP[CD4,VL/VL] in HIV.)
- ▶ Essay at baseline about most traumatic event.
- ▶ Predicting to survival 17 year follow-up

Stress and Coping in HIV - LTS Study

Measures of some Spirituality Variables

- ▶ S/R Index - 4 aspects of R/S: sense of peace, faith, religious behavior, compassion for others
- ▶ Prayer
- ▶ View of God
- ▶ Compassion for Self and Others
- ▶ Spiritual Coping
- ▶ Meaning -
 - ▶ interviewer had 4 items to rate (over 4 interviews)
 - ▶ engaging in meaningful activities;
 - ▶ unfinished business, unmet goals, experiences;
 - ▶ sense of meaning and purpose;
 - ▶ new meaning as a result of illness
 - ▶ Transcript of interview rated by 2 raters
 - ▶ Rated on 4 items above; Focused on interview questions related to activities participants were looking forward to, their daily lives, and what enables them to keep going in the face of HIV.



Students & Staff - HIV Study

Overview Landmark study on Spirituality (Positive Psychology) and Health

Templeton funding; Neal Krause PI Wave 1; Ironson PI, Wave2

- ▶ Representative sample of adults, >18 yr. from the US (n=3010)
- ▶ Purpose was to measure spirituality well rather than superficially
- ▶ Used Clustered random household sampling
- ▶ Sampling and data collection conducted by NORC
- ▶ In-person interviews in respondent's homes
- ▶ Blood spot collected for CRP, EBV, HgA1c, Cholesterol fractions, IL-6
- ▶ 1312 men, 1698 women; White 67% ; Blacks 14%, Hispanics 16%

Religion/Spirituality measures - Landmark

- ▶ Religious identities - religious, spiritual both, neither
- ▶ Church attendance
- ▶ Prayer
- ▶ R/S Engagement - Service attendance, prayer, identity, commitment, use of R/S to cope
- ▶ Spiritual Struggles
- ▶ Religious Hope and General Hope (Optimism)
- ▶ Meaning in life 6 items “I have a philosophy of life that helps me understand who I am” (Krause, 2004) .831

Graduate Students who have worked on the Templeton Grant



Emily Hylton

Atlanta VA
Emory



Rachel Verhagen

Aspects of R/S
and depression
and anxiety



Yasmin Shemali

Positive Emotional
Well-being and
HgA1c, BP, HDL



Salman Ahmad

Prayer & Survival,
which comes first
S/R or Health

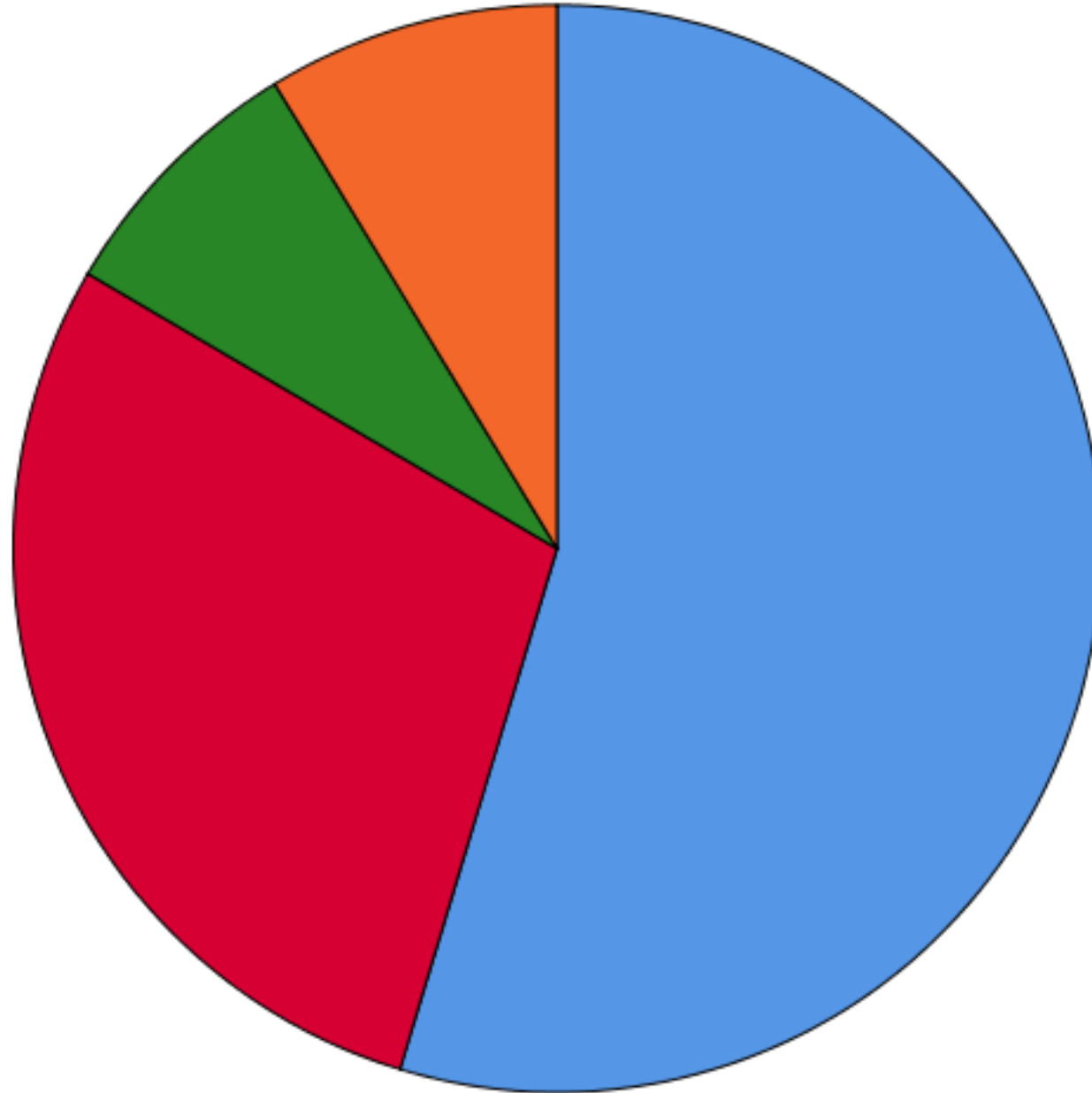
Cox Regression Analysis used for survival

- ▶ Block 1 Biomedical Variables age, (CD4, VL, antiretroviral medications in the HIV study, symptoms at Wave 1 in the Landmark study)
- ▶ Block 2 Sociodemographic Variables: Sex, Race, Education
- ▶ Block 3: social support, depression
- ▶ Block 4: health behaviors (alcohol use, exercise, BMI, smoking)

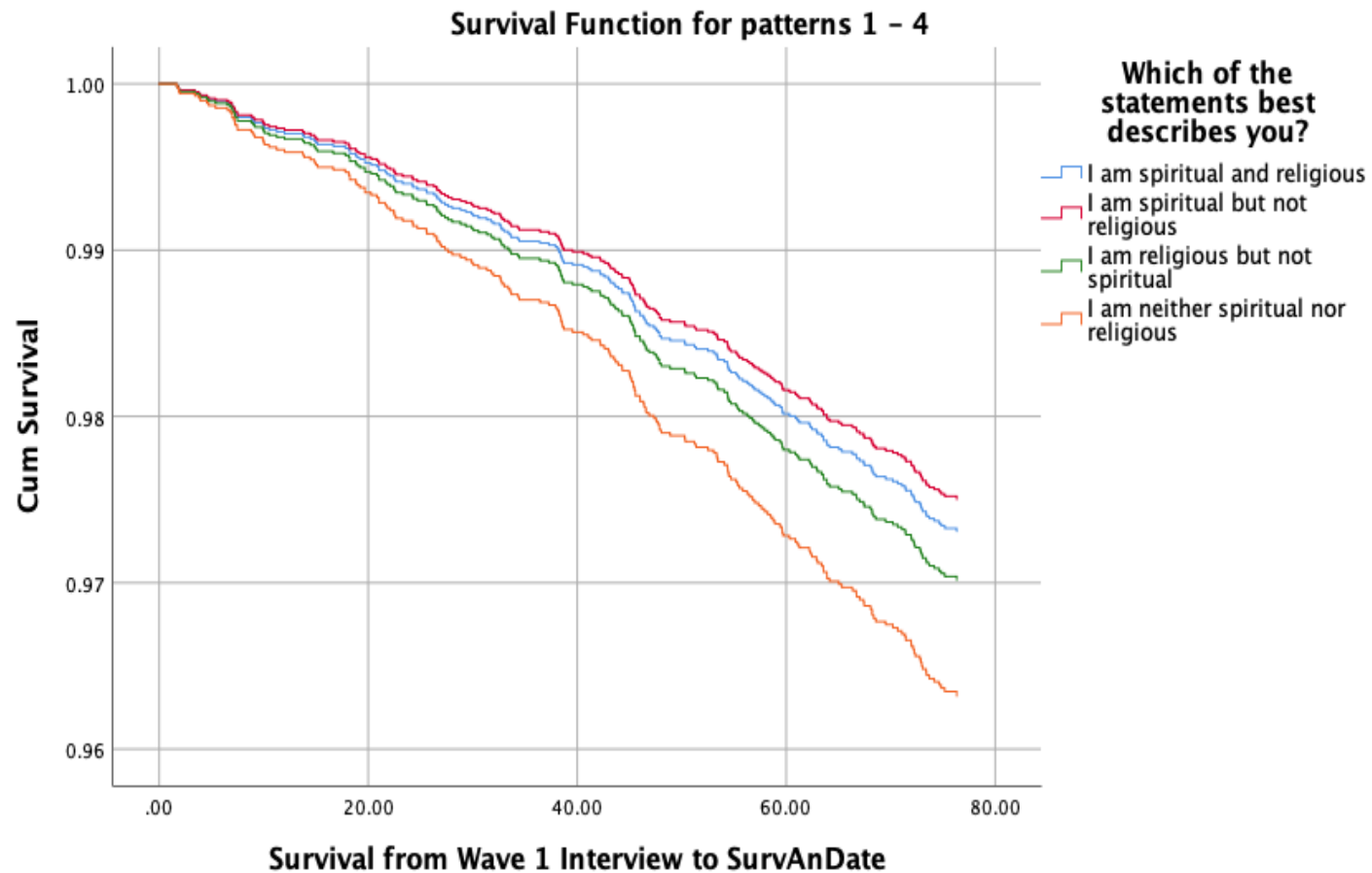


RESULTS:
Religiousness,
Spirituality and
Survival in two
Longitudinal
Studies:
the Landmark
and HIV Studies

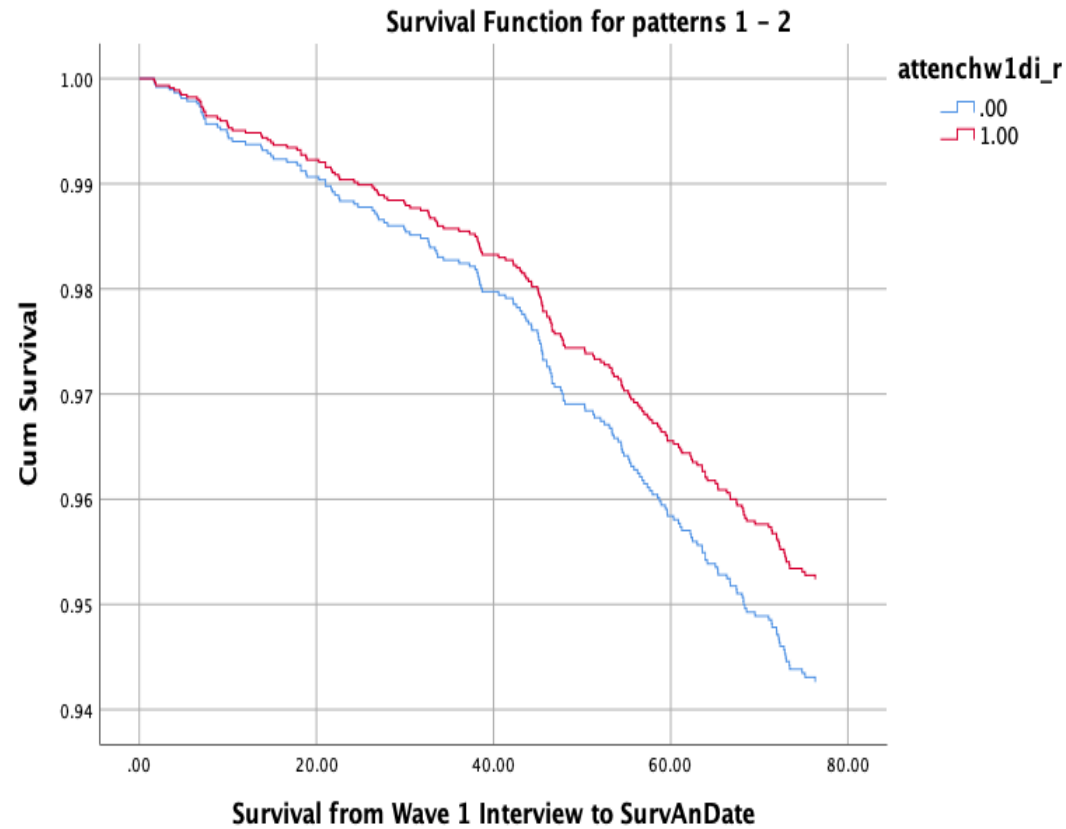
Which of the statements best describes you?



- I am spiritual and religious
- I am spiritual but not religious
- I am religious but not spiritual
- I am neither spiritual nor religious



Spirituality and mortality by R/S identity
Landmark Study



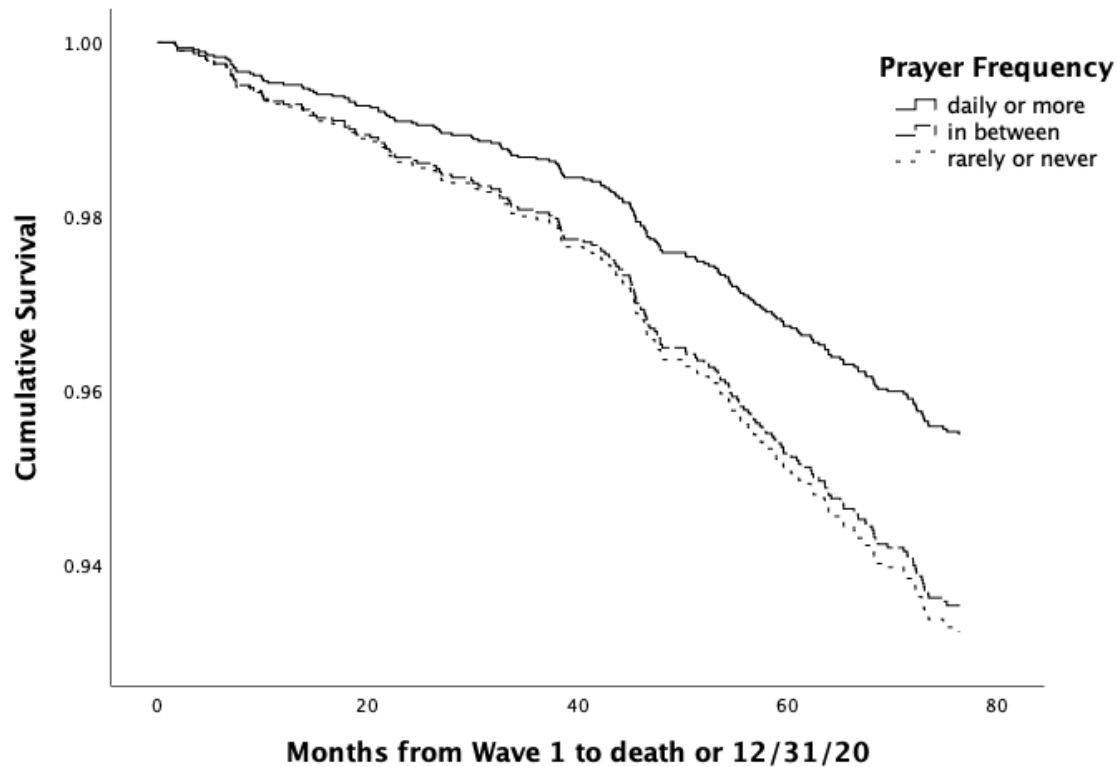
Church Attendance and Survival
Landmark Study, HR= 1.21

Church Attendance & CRP - Landmark

- ▶ Greater frequency of **church attendance** was significantly associated with lower CRP.
- ▶ Those with frequent church attendance were 38% less likely to have clinically elevated CRP than those who attended rarely or never.

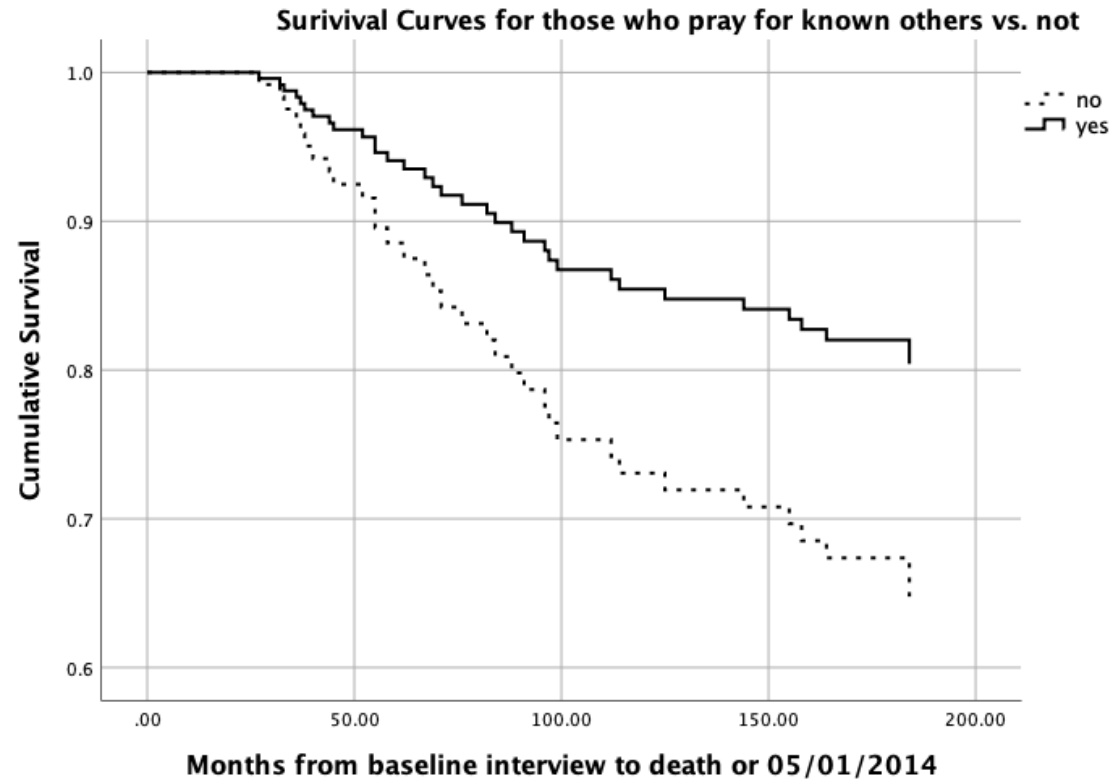
Predictor Variable	Proportion with CRP levels \geq 3.0 mg/L	Odds ratio	95% CI
At least monthly religious service attendance	25%	0.621	0.422, 0.913
No religious service attendance through several times per year	33.8%	1.610	1.095, 2.367

Praying Predicts Survival in the Landmark Study (in people with at least 1 chronic illness, n=1931)



- ▶ Those who prayed on a daily basis or more were significantly more likely to survive over 6 years (Hazard Ratio = 1.48) compared with those who prayed less often, after controlling for biomedical variables (age, medical symptoms), sociodemographics (sex, race, and education), psychosocial variables (depression, social support), and health behaviors (alcohol use, smoking, exercise, and body mass index/weight).
- ▶ Ironson and Ahmad, JORH, Sept 2023

Prayer in the HIV study



Most studies predicting the effects of prayer on health have examined intercessory prayer (prayers by others who often don't know you), yet most people pray for their own health or the health of others who they know.

People with HIV who prayed for known others were twice as likely to survive over 17 years as compared with those who did not.

Using Spirituality to Cope:

Why may using spirituality to cope be effective? Fits in with Coping theory

- ▶ May be effective because it impacts on both primary appraisal (Is the event threatening, controllable, and predictable) - and Secondary Appraisal (deciding what can be done, I'm not alone, God will help me).
- ▶ It may lessen the toxicity of the stressor and one's perceived ability to handle it.
- ▶ Useful in both transactional model (Lazarus and Folkman) and meaning making model (Park 2005).

Sara

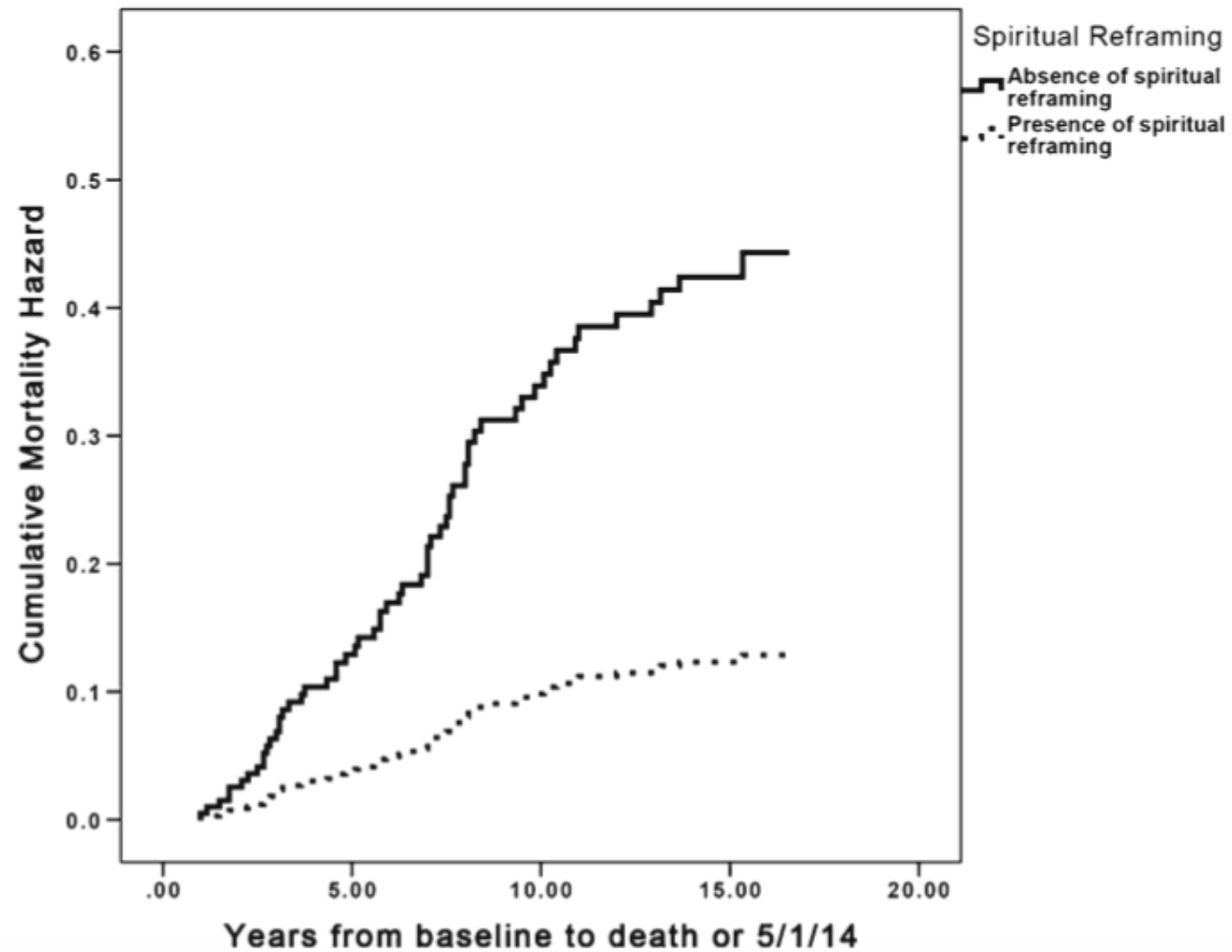
- ▶ Maybe God chose me for a purpose

What aspects of spiritual coping predicted lower mortality in HIV?

- **Spiritual practices** such as prayer, meditation, attending religious services
- **Spiritual reframing** such as believing things happen for a divine reason,
➤ or that God will help you handle the situation
- **Overcoming spiritual guilt:** e.g. believing a higher power will forgive you for any wrongdoing
- **Spiritual gratitude:** appreciation to a higher power for what you have
- **Spiritual empowerment:** the belief that spirituality will help you cope with stressors
- People using these strategies were **2-4 times more likely to survive over 17 years** than people not using these strategies.

From Ironson et al, 2016, JGIM

Spiritual reframing and mortality



Michaelangelo's View of God



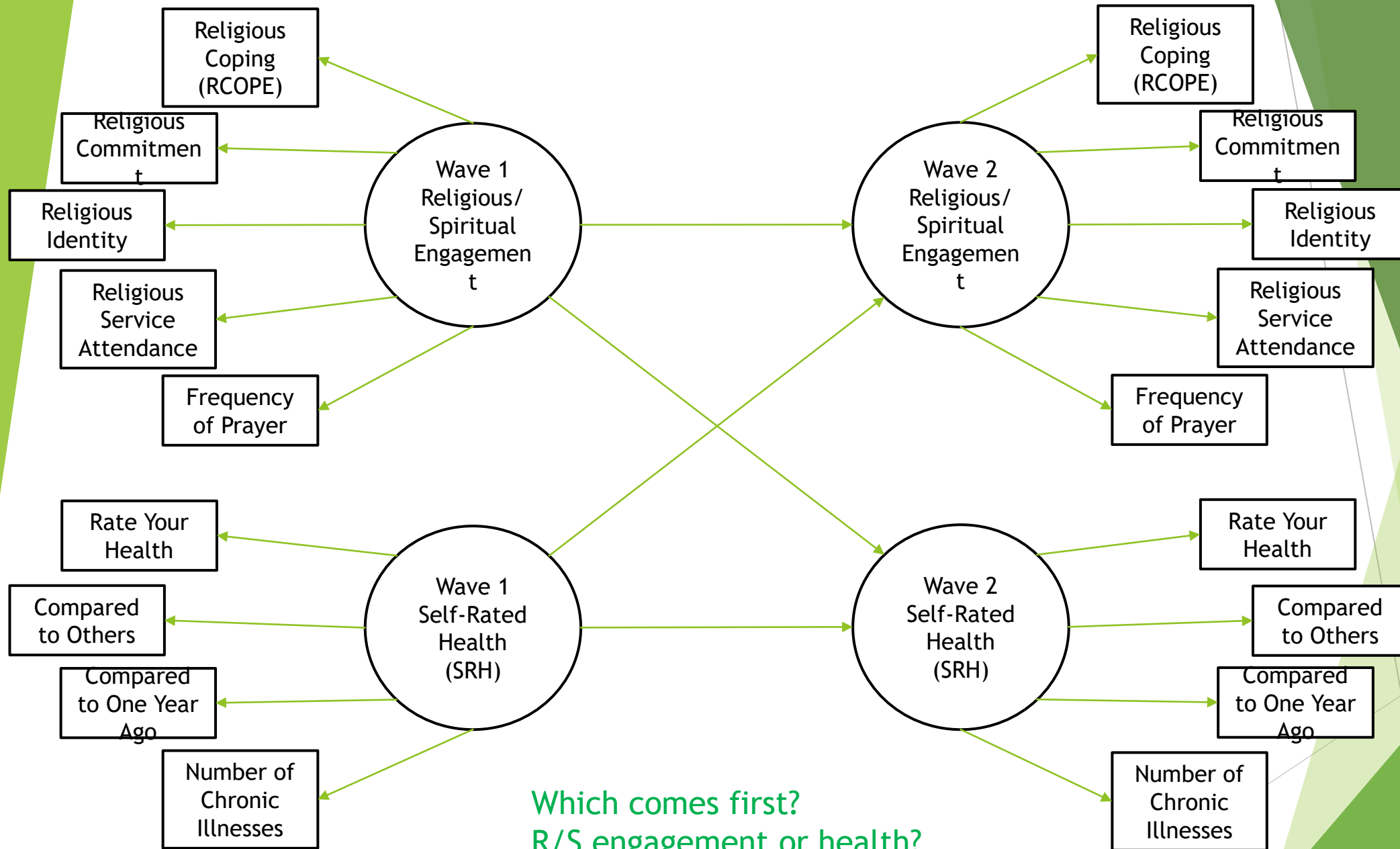
- ▶ What do you see in this view of God?
- ▶ Loving God?
- ▶ Judging God?

Positive and Negative View of God, and Spiritual Struggles

- ▶ Positive View of God predicted slower disease progression in HIV. Conversely negative View of God predicted faster disease progression
 - ▶ (Ironson et al., JBM 2011). Chosen as the article of the month by a clergy magazine.
- ▶ Pargament, K. I., Koenig, H. G., Tarakeshwar, N., et al. . Religious struggle as a predictor of mortality among medically ill elderly patients. A 2-year longitudinal study *Arch Intern Med*, 2001: 161(15),1881-1885.
 - ▶ Wonder whether God had abandoned me
 - ▶ Questioned God's love for me
 - ▶ Decided the devil made this happen

Carlos - change in belief

- ▶ Minister said - You don't have to believe in a God that doesn't love you.



The Golden Rule: Compassion for others in HIV

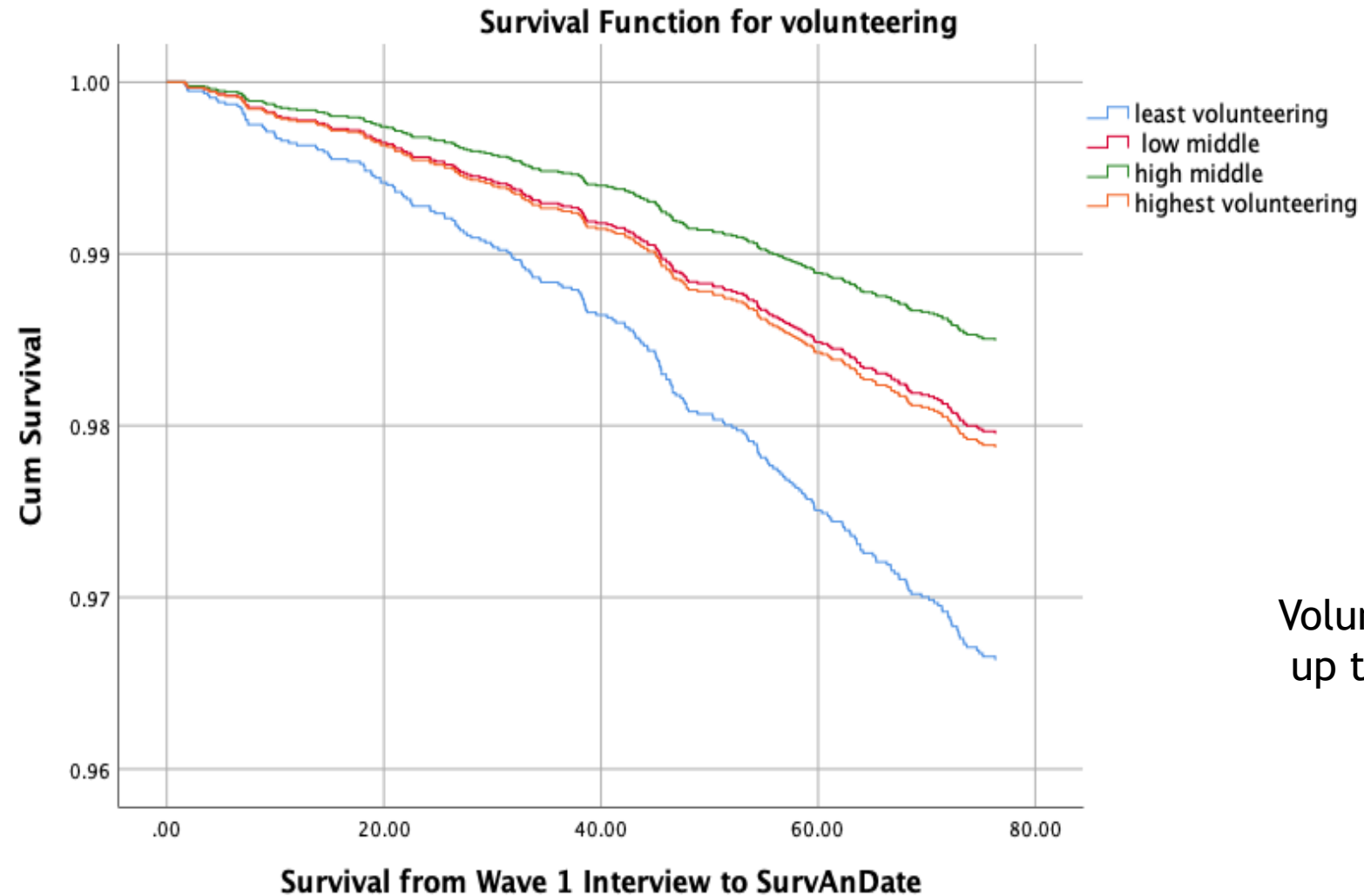
- ▶ Using transcribed interviews and essays from the stress and coping study, Being compassionate towards others as well as having self compassion predicted greater survival, even after controlling for substance use and social support.
- ▶ Interestingly receiving compassion did not predict better survival.
- ▶ After controlling for adherence, self-compassion was no longer significant, but Compassion towards others was.

Acts of Kindness and Gene expression

Steve Cole, 2017 (PNEC), 2022(BBI)

- ▶ Two randomized studies compared groups of people who engaged in acts of kindness towards others, towards themselves, or a neutral condition
- ▶ Those who engaged in acts of kindness towards others had more beneficial gene expression of CTRA (Conserved transcriptional Response to Adversity) stress indicator genes.
- ▶ 3 kind acts/wk over 4 weeks

Volunteering and Survival - Landmark



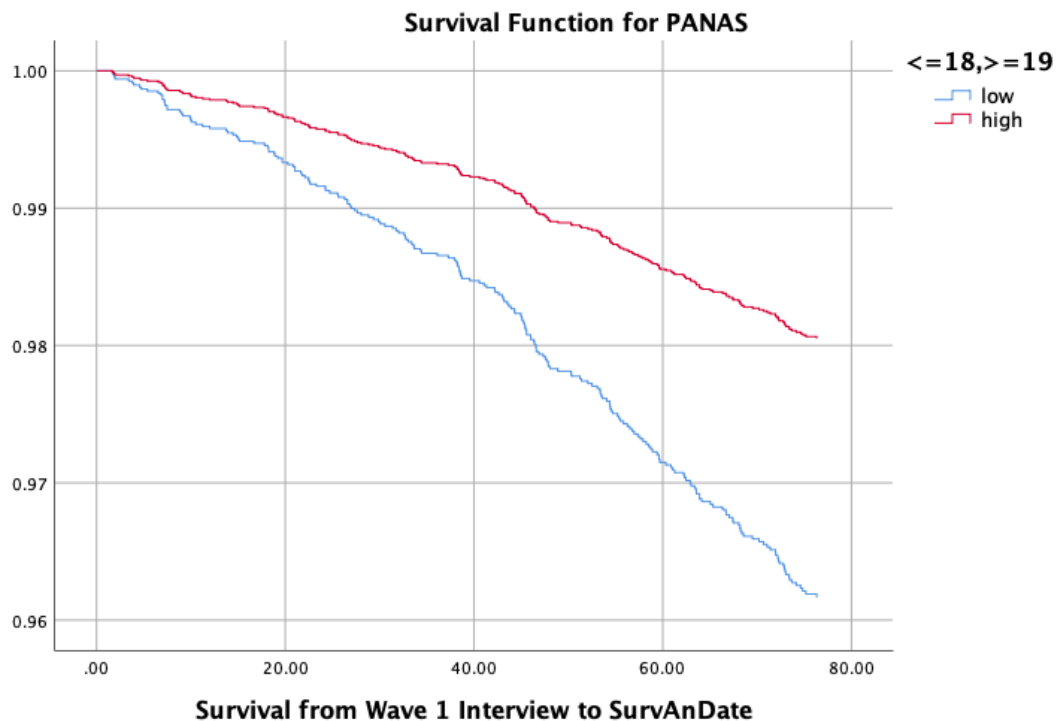
Volunteering is good,
up to a point.

Correlates of R/S:

Possible psychological mediators of R/S effect on survival

- ▶ Positive Affect
- ▶ Hope/Optimism
- ▶ Meaning

Positive Affect Predicts Survival in Landmark Study over 6 years



- ▶ With PANAS dichotomized at the median
- ▶ Controlling for age, sex, race, and education
- ▶ Beta = .687, Wald = 22.29, p = .000
- ▶ **Exp(b) = 1.99**, CI = 1.50-2.64
- ▶ Be careful, the Y axis does not start at 0

Positive Affect, Life Satisfaction, & CRP

Landmark-Templeton Study

- ▶ Higher **positive affect** and **life satisfaction** were significantly related to lower CRP
- ▶ Individuals with low positive affect or low life satisfaction were at increased odds (OR = 1.40 and OR = 1.54, respectively) of having clinically elevated CRP

	Proportion (%) with CRP levels ≥ 3.0 mg/L		Odds Ratio ^a		95% Confidence Interval	
	Overall	Chronic	Overall	Chronic	Overall	Chronic
Positive Affect						
High	22.3	25.9	1.00	1.00		
Moderate	27.7	31.4	1.49	1.45	1.16, 1.92	1.07, 1.95
Low	27.8	32.3	1.40	1.43	1.07, 1.83	1.05, 1.95
Life Satisfaction						
High	22.4	25.9	1.00	1.00		
Moderate	24.9	29.2	1.09	1.10	0.84, 1.43	0.80, 1.50
Low	31.5	35.7	1.54	1.50	1.20, 1.98	1.12, 2.00

Notes. Chronic = chronic illness group. CRP = C-Reactive Protein.

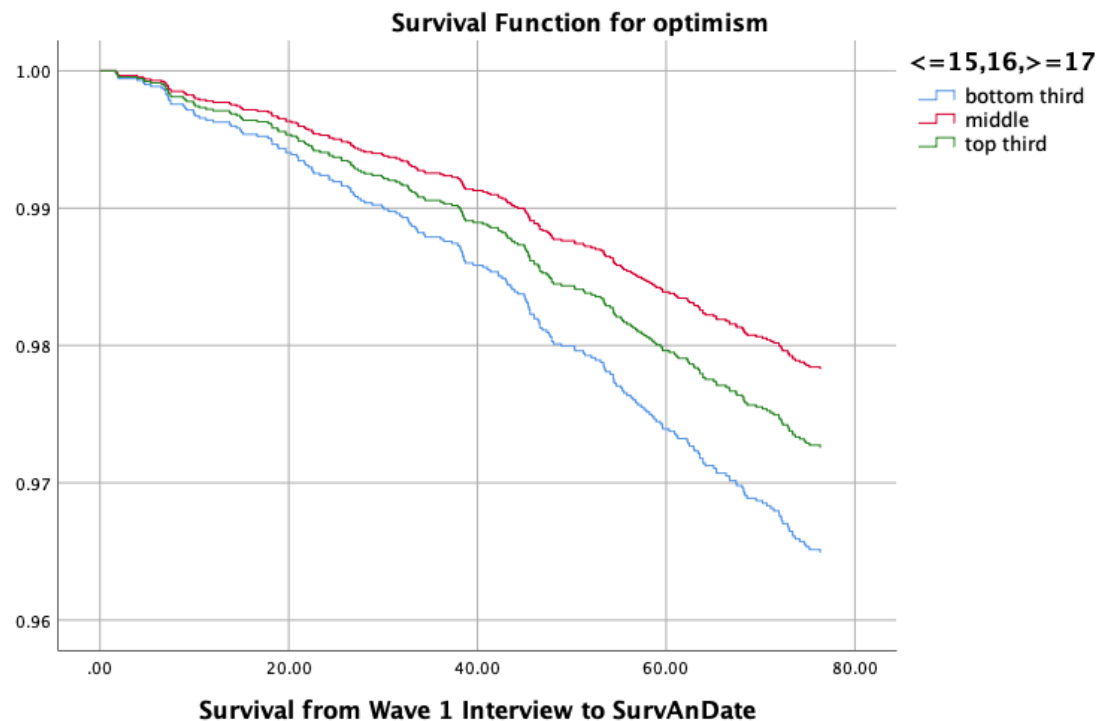
^a Adjusted for age, sex, race/ethnicity, education.

Dispositional Optimism and Disease Progression in HIV

Ironson, Balbin et al. IJBM, (2005), 12(2), 86.

- ▶ Disposition Optimism predicted slower disease progression (less decrease in CD4 and less increase in VL) over 2 years.
- ▶ Controlled for baseline CD4, baseline VL, antiretroviral treatment, sex, race education, drug use). Used HLM models.
- ▶ Those low on optimism (75th percentile) lost CD4 cells at a rate **1.55** times faster than those high (25th percentile) on optimism.
- ▶ How does this work? Optimists may reap health benefits through these pathways (mediators):
 - ▶ Behavioral (greater proactive behavior)
 - ▶ Cognitive (less avoidant coping)
 - ▶ Affective (less depression)

Dispositional Optimism and Survival in the Landmark Study - Curvilinear relationship



- ▶ Those in the middle on optimism (red) had the greatest survival!
- ▶ Those in the top third (green) did better than those in the bottom third (blue).
- ▶ Wald = 8.24(2), $p = .013$
- ▶ Middle(red) vs. bottom(blue), HR = 1.63 (CI = 1.17, 2.27)

Secular vs. Religious hope

- Krause N, and Ironson G. Religious hope, but not a general sense of hope, is associated with change in chronic conditions over time. *Current Psychology* (2023). <https://doi.org/10.1007/s12144-023-04581-6>

Studies of Meaning and Purpose in Life

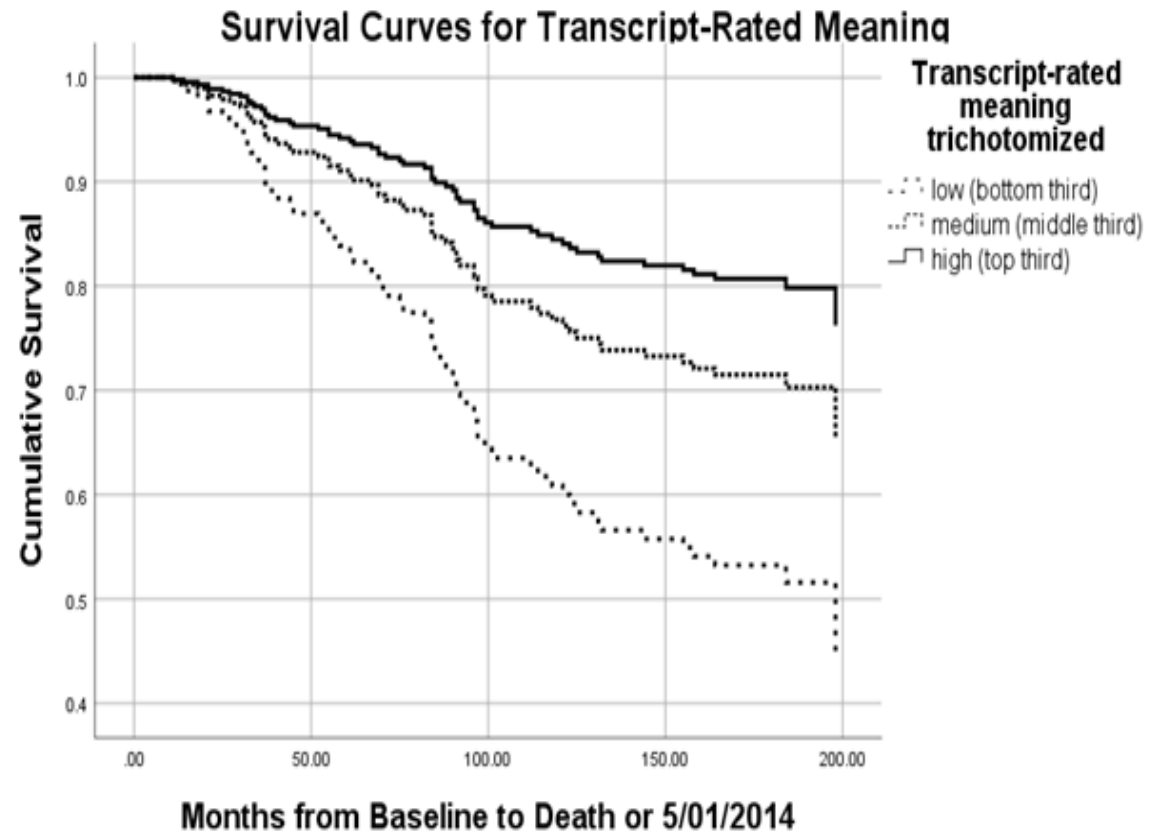
Collective wisdom suggests that finding meaning in life is a powerful force for human flourishing, well-being, and survival. What is the evidence for survival?

- ▶ People are less likely to die right before birthday, holidays, special events (Phillip Smith) replicated many times.
- ▶ A meta-analysis of 62 studies found that eudaimonic well-being (including judgements about meaning in life) was associated with increased survival (Martin-Maria et al, 2017).
- ▶ Meta-analysis of purpose in life and mortality $RR=.83^{**}$ (n=8), Purpose in life and CV events $RR=.83^{**}$ (n=4) Cohen, Bavashi, Rozanski, 2016

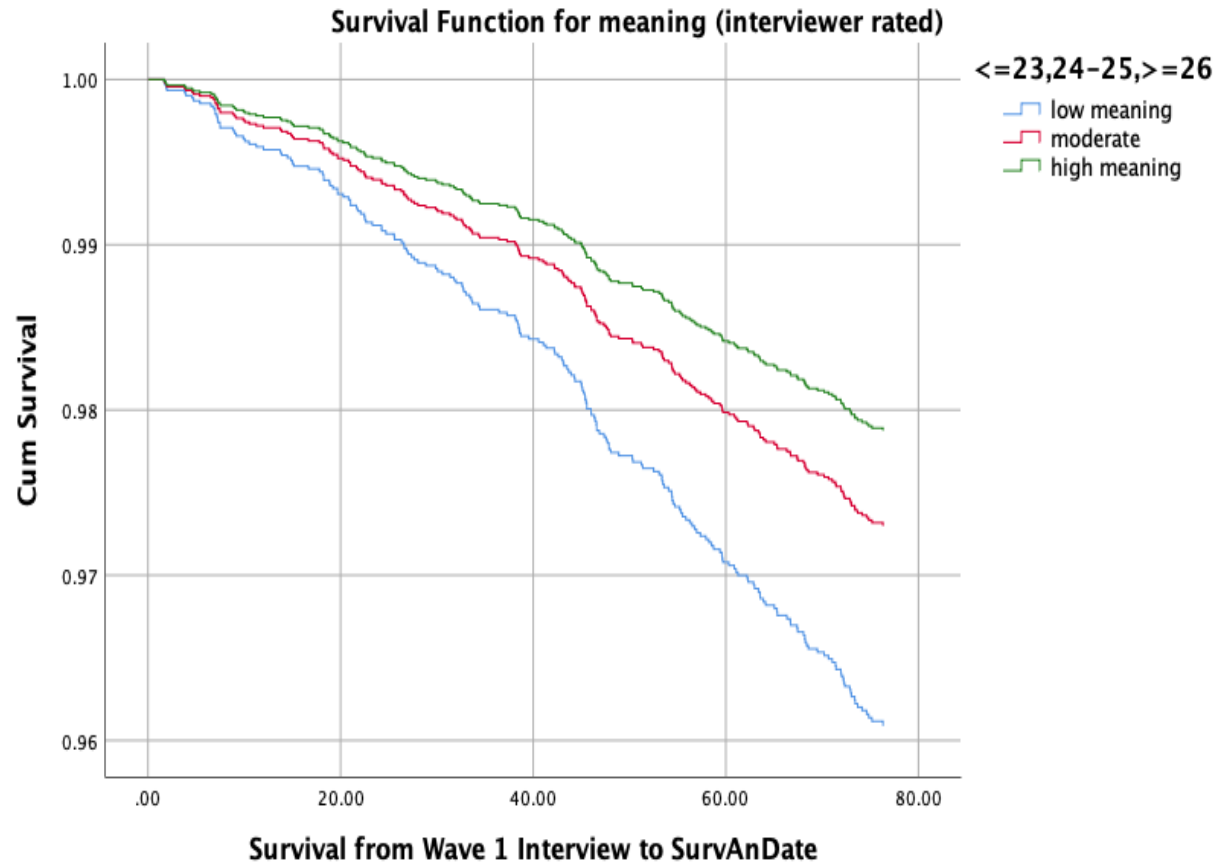
Meaning predicts survival in HIV

Ironson, Verhagen, DeRosa, Hylton (Psych.Med (2021),83(7).

- ▶ Higher levels of meaning in life - whether assessed by interviewer or transcript raters predicted significantly greater survival **and did so over and above positive emotion**.
- ▶ The strength of association was moderate to large (HR 2.05 to 3.45).
- ▶ Interviewer items:
engaging in meaningful activities;
unfinished business, unmet goals, experiences;
sense of meaning and purpose;
new meaning as a result of illness



Meaning predicts survival- Landmark Study



- ▶ Meaning measured by self-report questions, and trichotomized predicted greater survival over 6 years
- ▶ Wald(2) = 11.623; $p=.001$
- ▶ HR survival =
 - ▶ top vs. bottom = 1.82 (CI=1.27-2.61)

An example of meaning and survival in HIV:

Vanessa (not her real name) was a crack addict and prostitute. She got pregnant.

God doesn't want me to live like this.

Summary and Conclusions

- ▶ Religion and Spirituality are an important part of many peoples lives.
- ▶ Traditional variables such as religious service attendance predict greater survival confirming many others' studies
- ▶ Prayer as it is often used (to pray for one's health when ill) predicts greater survival
- ▶ Other aspects of R/S such as R/S identity, compassion for others, praying for others also predict survival
- ▶ Many people use S/R to cope. We identified several aspects of R/S that are related to survival: Practices, reframing, overcoming guilt, gratitude, and empowerment that are related to survival. Some of these may be particularly useful when doing therapy.
- ▶ Which comes first? S/R engagement and health appear to be bidirectional
- ▶ Psychological variables related to R/S such as hope, meaning, and positive emotions, also predict greater survival

Concluding Remarks

- ▶ Thank you Dr. Koenig
- ▶ It takes a village - Thanks to my colleague Neal Krause, the University of Miami, students and staff that made these studies possible, and to the Templeton Foundation and NIH for funding these studies.
- ▶ Enjoy this important field
- ▶ Here's how to contact me:
- ▶ g.ironson@miami.edu please put “Duke Talk” in the subject line”