## The Biopsychosocial Religion and Health Study (BRHS) AKA Adventist Religion & Health Study

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#### Presentation based in part on:

*Cohort Profile: The biopsychosocial religion and health study (BRHS)* Jerry W Lee; Kelly R Morton; James Walters; Denise L Bellinger; Terry L Butler; Colwick Wilson; Eric Walsh; Christopher G Ellison; Monica M McKenzie; Gary E Fraser

(In Press) International Journal of Epidemiology



Advanced Access: <u>http://ije.oxfordjournals.org/cgi/content/extract/dyn244v1</u>

### Specific Aims



- To examine manifestations of religious experience and their possible associations with quality of life, CHD and all-cause mortality in Seventh-day Adventists, a group characterized by general good health outcomes and considerable diversity in lifestyle.
- To investigate whether these manifestations of religious experience have different associations with quality of life, CHD and all-cause mortality in African and Euro Americans; and
- To examine the possible relationships of these manifestations of religious experience to biochemical and physiological indicators of stress, immune system function, coronary artery disease and aging.



## Cumulative Risk Exposure



- Aggregates risk exposure across
  - Physical risks such as
    - Poverty
    - Poor housing quality
    - Violence exposure
  - Psychosocial risk such as
    - Poor parental bond
    - Poor marital bond
    - Poor job satisfaction

### Allostatic Load



- Allostasis—achieving biological stability through change. May involve changes in multiple biological and behavioral systems.
- Allostatic load—cumulative burden that both acute and lifetime stress place on the organism.
- Primarily assessed by a combination of biologic, biometric, physical performance and cognitive function measures.



## Two arms of the study



#### PsyMRS

- Psychosocial Manifestations of Religion
- 20 page questionnaire sent to a random sample of AHS-2 participants

#### BioMRS

- Biological Manifestations of Religion
- Biometric, biologic, cognitive function and physical performance measures



Note: Current year 1 enrollment is 10,988 in PsyMRS and 508 in BioMRS.

PsyMRS—Questionnaire Assessment of

- Cumulative Risk Exposure
- Religious/spiritual commitment, attitudes, beliefs, and behaviors
- Psychosocial and lifestyle mediators of a religion/health connection
- Quality of life indicators
- Control variables (including demographics)

### Cumulative Risk Exposure

- Early relationships
  - Father love & abuse
  - Mother love & abuse
- Risky family (of origin)
- Adult relationships
  - Spouse or partner positive
  - Spouse or partner negative
- Trauma History
  - Last year, 1 to 5 years ago, more than 5 years ago, total impact

#### Job

- stress
- control
- satisfaction

- Unfair treatment (gender, race, age, religion, other)
   Lifetime
  - Everyday discrimination
- Housing
  - Growing up
  - Current
- Difficulty meeting expenses
  - Under 18
  - □ 18 to 35
  - Last year
- Perceived Stress

# Religious/spiritual commitment, attitudes, beliefs, and behaviors

- Church attendance
- Congregational activity
- Percent co-religionist contact
- Spouse & Children's religion
- Children's church schooling
- Congregational sense of community
- Religious support
  - Emotional Support Received
  - Emotional Support Given
  - Negative Interaction
  - Anticipated Support
- Prayer
  - Confession
  - Habit
  - Meditation/Contemplative
- Gratitude
- Forgiveness
- Spiritual meaning in Life
- Intrinsic religiosity (DUREL)
- Loving versus controlling God

- Positive and negative religious coping
  - Control:
    - Self-directed
    - Collaborative
    - Passive Deferral
    - Active surrender
  - Meaning;
  - Benevolent Reappraisal
  - Punishing God Reappraisal
  - Comfort:
    - Seeking Spiritual Support
    - Spiritual Discontent
  - Transformation
- Sabbath keeping
  - Sabbath rest
  - From social pressure/guilt
  - Builds relationship with God
  - Sacred activities
  - Secular activities
- Positive and negative eschatological attitudes



Psychosocial and lifestyle mediators of a religion/health connection (Based on Ellison & Levin, 1998)



- Health behaviors & lifestyle
  - Exercise
  - Diet
  - Sleep Hours
  - All AHS-2 lifestyle indicators
- Healthy & Unhealthy Beliefs
  - Optimism
  - Pessimism
- Positive (& negative) emotions
  - Positive & negative affect
  - Hostility
  - Depression
- Self-esteem & Personal efficacy
  - Self-esteem
  - Mastery

- Social integration & support
  - Informational support
  - Instrumental support
  - Emotional support
  - Companionship
  - Unwanted advice or intrusion
  - Failure to provide help
  - Unsympathetic or insensitive behavior
  - Rejection or neglect
- Coping resources & behaviors
  - These are included under religious coping and prayer

## Quality of life indicators



- Physical & Mental Health (SF-12)
  - Physical functioning
  - Role physical (Also SF-36)
  - Role emotional
  - Bodily pain
  - General health (Also SF-36)
  - Vitality
  - Social functioning
  - Mental Health

- SF-12 Composite scores
  - Physical Health
  - Mental Health
- Life satisfaction
- Medical History
  - Diagnosed medical conditions
  - Physical symptoms
  - Influenza
  - Upper respiratory infection
  - Sleep problems

## Control variables



- Gender
- Age
- Income
- Other demographics
- Balanced Inventory of Desirability Responding
  - Self-deception
  - Impression Management
- Neuroticism

### The Questionnaire



<ul> <li>Please fill in one bubble for each question unless otherwise directed.</li> <li>Take care that the mark does not stray near other bubbles.</li> <li>Erase cleanly any answer you with to change.</li> <li>Please use the enclosed No. 2 pencil, and please, no red pens.</li> </ul>							Shade bubbles like this – Not like this <del>– ,</del>			
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1. Your belief now	0	0	0	0	00	0	0			
2. Your spouse's	-									
belief now	0.	0	0	0	00	0	0	0		
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usually attend?			,		00	00	00	00		
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his section asks about your religious and spiritu	ial beha	viors	and be	liefs.				only
<ol> <li>On how many Sabbaths in an average month do you have scripture and prayer, teaching Sabbath School, providing</li> </ol>	responsil music, pr	oilities i eparing	n your cl for a poi	hurch? (F luck, etc	or exam ).	ple, givi	ng	
No Sabbaths     1     2     3     4	or more S	abbaths						(9)
2. On a Sabbath when you have responsibilities, now many r time on Sabbath such as preparing a lesson study, practic	ing music	, prepa	ring a m	al for po	tluck, etc	paration c.)		
I have no church responsibilities     I have no church responsibilities     S to 4 hours     S to 6 hours	O 1/2 to 1 hour O 1 to 2 hours							89
isted below are a number of statements. Read	each ite	em ane	d decid	le whet	her the	•		
ratement is frue of Palse as it pertains to you p	Not	.y.	1	Somewha			Very	
				-	2			
I keep pretty well informed about my congregation.     I have some influence on the decisions of my	0	0	0	0	0	Ó	0	133
congregation.	0	0	0	0	0	0	0	134
major source of satisfaction in my life.	0	0	0	0	0	0	0	135
'hink about <mark>your local church.</mark> How much would you a	gree wit	h the f	ollowin	g staten	nents?			
6. Members usually introduce themselves to new members. 7. The clergy know most of the members by name.	8	0	8	0	00	8	8	138 137
After services there is not enough time to talk with the ministers and other members	0	0	0	0	0	0		139
9. Members treat each other as family (for example, visiting	0	0	0	0	0	0	0	(3)
Most members are close friends with each other.	ŏ	ŏ	ö	0	ŏ	ŏ		140
<ol> <li>Members often do not notice the absence of other members.</li> </ol>	0	0	0	0	0	0	0	101
2. Activities make children feel like a part of this church. 3. New members find it hard to be accepted by the	0	0	0	0	0	0	0	142
congregation. Members have little one-to-one contact with the ministers.	8	8	8	8	8	8		143
5. Members hardly see each other outside of church.	ŏ	ŏ	ŏ	ŏ	ŏ	ŏ	ŏ	145
Celigious Support				À				
n the following questions we are asking about								
eople you worship with—people in your local hurch, Bible study class, or Sabbath school		1/20				200		
lass.	Neve	r <sup>01</sup>	athlie	often	ofter	A	<b>Iways</b>	
6. How often do people you worship with make you feel loved and cared for?	0		0	0	0		0	149
<ol><li>How often do you make the people you worship with feel loved and cared for?</li></ol>	0		0	0	0			147
8. How often do people you worship with listen to you talk about your private problems and concerns?	0		0	0	0		0	140









#### **BioMRS Clinical assessment of**

- Biometrics
  - height, weight, body fat (bioimpedance), waist/hip, B/P
- Physical performance including
  - □ gait, balance, grip strength
- Cognitive performance
  - California Verbal Learning Test—over 20 indicators including
    - Short and long-delay recall, semantic clustering, primacy and recency, total learning slope, total response bias, intrusions
- Independent Activities of Daily Living (IADLs)
- Blood, Saliva and urine including:
  - Stress—Waking salivary cortisol, urinary norepinephrine & epinephrine
  - Metabolism—HbA1c, Plasma Albumin
  - Inflammation Markers—Plasma IL-6 & C-reactive protein
  - □ Lipid Profile Total and LDL cholesterol, Triglycerides
  - Creatinine clearance
  - Additional blood and urine samples frozen in liquid nitrogen



## AHS-2 linked data

- AHS-2 questionnaire (collected up to 3 years before PsyMRS)
  - Ethnicity
  - Education: self & parents
  - Occupation
  - Diet
  - Exercise & Napping: Week day, Saturday, & Sunday
  - "Female History"
  - Sun exposure
  - Age at baptism, mother's & fathers religion
  - Rearing history (who did it & why)



- Biennial hospitalization questionnaire
- Mortality

# Samples of possible analyses

Proposed in grant application









## Characteristics of the Sample

#### Compared to the General Social Survey



Davis, J. A., Smith, T. W., & Marsden, P. V. (2007). General Social Surveys, 1972-2006. Chicago, IL: National Opinion Research Center.













# Physical and Mental Health

Compared to national norms for the SF-12 version 2



#### Composite Physical Health (SF-12) Self Report



#### Composite Mental Health (SF-12) Self-Report

