Religion/Spirituality and Depression in Adolescent Psychiatric Patients

Rachel E. Dew MD MHSc
June 25, 2008

Co-Investigators

- Stephanie S. Daniel PhD, UNCG
- David B. Goldston PhD, DUMC
- W. Vaughn McCall MD MS, WFUBMC
- Maragatha Kuchibhatla, PhD, DUMC
- Harold G. Koenig MD MHSc, DUMC

Data Collectors

- Cyrus Schleifer BA
- Mary Frances Triplett MA
Acknowledgements

- Funded by the John Templeton Foundation as part of Dr. Dew’s post-doctoral fellowship
- Dr. Dew thanks Dr. David Steffens for assistance with this project

Data Collectors

- Cyrus Schleifer BA
- Mary Frances Triplett MA

Sociocultural Factors in Adolescent Depression

- Observational study
- Adolescent psychiatric patients
- Wake Forest and Duke CDBH outpatients
- Prospective design; two data points six months apart
Review of the literature on adolescent depression and religion/spirituality

<table>
<thead>
<tr>
<th></th>
<th>All Articles</th>
<th>Public Religious Activities</th>
<th>Religious Importance</th>
<th>Religious Beliefs</th>
<th>Denomination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive Results Only</td>
<td>5</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Mixed Positive/Non-significant</td>
<td>9</td>
<td>2</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Non-significant Only</td>
<td>3</td>
<td>1</td>
<td>4</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Negative Results</td>
<td>4</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>21</td>
<td>7</td>
<td>6</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

Hypotheses

- **Hypothesis 1:** Lower levels of R/S will correlate with increased depressive symptoms, both cross-sectionally and longitudinally.

- **Hypothesis 2:** A significant portion of the variance in the relationship between R/S variables and depressive symptoms will be attributable to substance abuse and social support.
Methods

- Approved by the IRBs of Duke University and Wake Forest University
- Participants recruited consecutively from clinic schedules at two psychiatric outpatient clinics
- Informed consent/assent
- $5 compensation per data point

Entry Criteria

**Inclusion**
- Age 12-18 at entry
- Psychiatric outpatient
- Informed consent and assent available

**Exclusion**
- Mental Retardation
- Unable to understand questions (reading assistance given if needed)
Recruitment

267 potential subjects identified from clinic schedules

- 75 excluded
- 51 refused
- 147 participated

2 later found Dx MR

Measures

<table>
<thead>
<tr>
<th>Instrument</th>
<th># items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beck Depression Inventory-II (BDI-II)</td>
<td>21</td>
</tr>
<tr>
<td>Multidimensional Scale of Perceived Social Support (MSPSS)</td>
<td>12</td>
</tr>
<tr>
<td>Problem Oriented Screening Instrument for Teenagers-Substance Abuse Subscale (POSIT)</td>
<td>17</td>
</tr>
<tr>
<td>Brief Multidimensional Measure of Religiousness /Spirituality (BMMRS)</td>
<td>40</td>
</tr>
</tbody>
</table>
Measures

Brief Multidimensional Measure of Religiousness/Spirituality
- 40 items
- 13 subscales
- Developed by expert panel through NIA
- Validated in adolescent clinical population (Harris et al 2007)

BMMRS Subscales

- Daily Spiritual Experiences
  - ex. “I feel God’s presence” “I am spiritually touched by the beauty of creation”
- Forgiveness
  - ex. “I have forgiven those who hurt me”
- Private Religious Practices
  - ex. “How often do you pray privately in places other than at a church, synagogue, or temple?”
BMMRS Subscales

-- Religious and Spiritual Coping
  - ex. "I look to God for strength, support, and guidance"

-- Negative Religious and Spiritual Coping
  - ex. "I feel God is punishing me for my sins or lack of spirituality"

BMMRS Subscales

-- Religious Support
  - ex. "If you had a problem or were faced with a difficult situation, how much comfort would the people in your congregation be willing to give you?"

-- Negative Religious Support
  - ex. "How often are the people in your congregation critical of you and the things you do?"
BMMRS Subscales

- Positive Religious History
  - ex. “Have you ever had a significant gain in your faith?”

- Loss of Faith
  - “Have you ever had a significant loss in your faith?”

BMMRS Subscales

- Organizational Religiousness
  - ex. “How often do you go to religious services?”

- Self-Ranking
  - ex. “To what extent do you consider yourself a spiritual person?”

- Meaning
  - ex. “I have a sense of mission or calling in my own life”
Analysis

- Simple linear regression predicting BDI-II score
- Multiple regression predicting BDI-II score
- Social support, substance abuse, and gender entered as control variables
- Multiple regression predicting change in BDI-II after 6 months, controlling for BDI-II at Time 1

Results: Demographics

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>145</td>
</tr>
<tr>
<td>Mean Age</td>
<td>14.3 (SD1.8)</td>
</tr>
<tr>
<td>Duke/Wake Forest</td>
<td>78/67 (54% / 46%)</td>
</tr>
<tr>
<td>Female</td>
<td>61 (42%)</td>
</tr>
<tr>
<td>Race: Caucasian</td>
<td>82 (56%)</td>
</tr>
<tr>
<td>African American</td>
<td>50 (35%)</td>
</tr>
<tr>
<td>Other</td>
<td>13 (9%)</td>
</tr>
<tr>
<td>Mean family income</td>
<td>40-60K</td>
</tr>
<tr>
<td>Mean parental education</td>
<td>“some college”</td>
</tr>
</tbody>
</table>
Results: Demographics

<table>
<thead>
<tr>
<th>Denomination</th>
<th>Count (Percentage)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conservative Prot.</td>
<td>102 (71%)</td>
</tr>
<tr>
<td>Liberal Protestant</td>
<td>22 (15%)</td>
</tr>
<tr>
<td>Catholic</td>
<td>9 (6%)</td>
</tr>
<tr>
<td>Other</td>
<td>5 (4%)</td>
</tr>
<tr>
<td>None</td>
<td>8 (6%)</td>
</tr>
</tbody>
</table>

Results: Illness/Treatment

<table>
<thead>
<tr>
<th>Diagnosis from chart:</th>
<th>Count (Percentage)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean BDI-II</td>
<td>13.5 (SD 9.6)</td>
</tr>
<tr>
<td>Depression</td>
<td>52 (38%)</td>
</tr>
<tr>
<td>Any Mood D/O</td>
<td>64 (47%)</td>
</tr>
<tr>
<td>ADHD</td>
<td>75 (55%)</td>
</tr>
<tr>
<td>Any DBD</td>
<td>41 (30%)</td>
</tr>
<tr>
<td>Any Anxiety D/O</td>
<td>44 (32%)</td>
</tr>
</tbody>
</table>
Results: Illness/Treatment

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Substance Abuse scale &gt; 1</td>
<td>32 (22%)</td>
</tr>
<tr>
<td>History of psychotropic use</td>
<td>116 (81%)</td>
</tr>
<tr>
<td>History of psychiatric hospitalization</td>
<td>44 (31%)</td>
</tr>
</tbody>
</table>

Cross-sectional Results: Bivariable

<table>
<thead>
<tr>
<th>Subscale</th>
<th>β</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily Spiritual Experiences</td>
<td>-0.35</td>
<td>0.0032</td>
</tr>
<tr>
<td>Forgiveness</td>
<td>-1.84</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Religious Coping</td>
<td>-0.60</td>
<td>0.0176</td>
</tr>
<tr>
<td>Negative Religious Coping</td>
<td>2.00</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Religious Support</td>
<td>-0.98</td>
<td>0.0171</td>
</tr>
<tr>
<td>Negative Religious Support</td>
<td>1.00</td>
<td>0.0360</td>
</tr>
<tr>
<td>Loss of Faith</td>
<td>5.81</td>
<td>0.0006</td>
</tr>
<tr>
<td>Organizational Religiousness</td>
<td>-0.71</td>
<td>0.0066</td>
</tr>
<tr>
<td>Overall Self-Ranking</td>
<td>-1.41</td>
<td>0.0063</td>
</tr>
<tr>
<td>Substance Abuse</td>
<td>6.05</td>
<td>0.0022</td>
</tr>
<tr>
<td>Social Support</td>
<td>-0.29</td>
<td>&lt;.0001</td>
</tr>
</tbody>
</table>
Cross-sectional Results: Controlled

- Religious variables controlled for gender, substance abuse, and social support
- Significantly related to BDI-II at Time 1
  - Forgiveness ($\beta=-1.13; p=0.0034$)
  - Negative Religious Coping ($\beta=1.53; p=0.0006$)
  - Negative Religious Support ($\beta=1.22; p=0.0045$)
  - Loss of Faith ($\beta=3.73; p=0.0185$)

Cross-Sectional Results: Multivariable

- Religious variables allowed to compete in single model
  - Forgiveness, Negative Coping, and Loss of Faith retained and each contributes unique variance
  - Significance persists when controlled for gender, substance abuse, and social support
Hypothesis 1: Lower levels of R/S will correlate with increased depressive symptoms
- True for most R/S variables:
  - Daily Spiritual Experiences
  - Forgiveness
  - Religious/Spiritual Coping
  - Religious Support
  - Organizational Religiousness
  - Overall Self-Ranking
- Reversed for some R/S variables:
  - Negative Religious Coping
  - Negative Religious Support
  - Loss of Faith
- Unrelated to depressive symptoms:
  - Private Religious Practices
  - Positive Religious History
  - Meaning
  - Denomination
Cross-Sectional Summary

Hypothesis 2: A significant portion of the variance in the relationship between R/S variables and depressive symptoms will be attributable to social support and substance abuse.

- Supported for:
  - Daily Spiritual Experiences
  - Religious/Spiritual Coping
  - Religious Support
  - Organizational Religiousness
  - Overall Self-Ranking

Cross-Sectional Summary

Hypothesis 2: A significant portion of the variance in the relationship between R/S variables and depressive symptoms will be attributable to social support and substance abuse.

- **Negative Religious Coping, Loss of Faith, and Forgiveness** contribute to variance in BDI-II independent of social support and substance abuse.
Completer Demographics

<table>
<thead>
<tr>
<th></th>
<th>Full Sample</th>
<th>Completers</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>145</td>
<td>104</td>
</tr>
<tr>
<td>Mean Age</td>
<td>14.3 (SD1.8)</td>
<td>14.3 (SD1.8)</td>
</tr>
<tr>
<td>Duke/Wake Forest</td>
<td>78/67 (54%/46%)</td>
<td>57/47 (55%/45%)</td>
</tr>
<tr>
<td>Female</td>
<td>61 (42%)</td>
<td>46 (44%)</td>
</tr>
<tr>
<td>Race: Caucasian</td>
<td>82 (56%)</td>
<td>56 (54%)</td>
</tr>
<tr>
<td>African American</td>
<td>50 (35%)</td>
<td>38 (36%)</td>
</tr>
<tr>
<td>Other</td>
<td>13 (9%)</td>
<td>10 (10%)</td>
</tr>
<tr>
<td>Mean income</td>
<td>40-60K</td>
<td>40-60K</td>
</tr>
<tr>
<td>Mean parental education</td>
<td>“some college”</td>
<td>“some college”</td>
</tr>
</tbody>
</table>

Longitudinal Results

- Loss of Faith predicts lower change in BDI score, controlling for BDI-II at Time 1 ($\beta=4.69$, $p=0.0066$)
- This persists when controlled for gender, substance abuse, and social support ($\beta=4.94$, $p=0.0049$)
- No other significant predictors
- Loss of Faith may predict lack of improvement (OR=4.4; CI 1.3-15.0 among entire sample; ns among those with initial BDI-II $\geq 10$)
Post-hoc Remitter Analysis

- Analyzed subgroup with BDI-II at Time 1 ≥ 10 (N=56)
- Remitters defined as those in this subgroup who subsequently had BDI-II < 10
- In this subgroup Loss of Faith predicts not achieving remission ($\chi^2=5.98; p=0.0145$)

Is this atheism?

- No: 87% of those endorsing a loss of faith answered “agree” or “strongly agree” to item “I believe in a God who watches over me.”
- Answer to “I believe in a God who watches over me” has no relationship to achieving remission ($\chi^2=1.99; p=0.1640$)
Longitudinal Summary

- **Hypothesis 1**: Lower levels of R/S will correlate with increased depressive symptoms
  - Loss of Faith is only variable related to change in BDI-II score after 6 months

- **Hypothesis 2**: A significant portion of the variance in the relationship between R/S variables and depressive symptoms will be attributable to social support and substance abuse
  - Social support and substance abuse not related to change in BDI-II score after 6 months
Limitations

- Clinical sample, may not generalize
- No standardized diagnosis
- Lack of geographic or denominational variation
- Small sample size
- Low variability on substance abuse measure

Interpretation

- Better social support and lower levels of substance abuse are likely ways in which some aspects of religion relate to better mental health in adolescent psychiatric patients
- Lack of forgiveness, Negative Religious Coping, and Loss of Faith contribute unique variance to depressive symptoms
- Loss of Faith independently predicts depressive symptoms 6 months later and may be a marker of poorer prognosis
Interpretation

- These phenomena may cause or result from depression
- May be symptoms of depression and can be monitored as such
- Intervention in the form of referral to clergy or pastoral counseling may be useful if these phenomena detected
- Clergy may consider referral of young congregants with spiritual struggle