The Association of Spirituality, Religiosity, Depression, Anxiety, and Drug Use Among Persons Undergoing Methadone Maintenance Therapy

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Substance Addiction

- Substance abuse and dependence are problematic (Manchikanti, 2007; ONDCP, 2004; SAMHSA, 2006)
- 62.5% increase in deaths from opioids in 5 years
- Person with addiction
  - Vulnerable to poor physical, psychological, and social health
  - Often suffers depression and anxiety
Current knowledge

- Religiosity—inversely related to substance use
  (Pullen et al., 1999; Kendler et al., 2003; Walker et al., 2007)

- Spirituality/religiosity
  - protective factors inhibiting use or predictors of future use
    (Hodge, 2001; Marsiglia et al., 2005)
  - associated with recovery, prevention of relapse, improved mental health
    (Brome, et al., 2000; Green, Fullilove, & Fullilove, 1998; Miller, 1998; Pardini et al., 2000)
Study Purpose

To increase understanding of spiritual well-being, religiosity, depression, and anxiety among persons with addicted to opioids
Study Aims

1. Increase understanding of spiritual well-being (SWB) and religiosity among persons with opioid addiction when undergoing MMT.

2. Increase understanding of the relationships among spiritual well-being, religiosity, depression, anxiety, and the negative consequences of drug use among persons with opioid addiction.

3. To evaluate the association of spiritual well-being, religiosity, anxiety, and depression, with continued drug use among persons with opioid addiction during MMT.
Conceptualization of Neuman Model
Study Design/Methods

- Descriptive, Cross-sectional, correlational
- 5 computerized questionnaires

Data analysis
- Descriptive analysis of demographics
- Correlations among instruments
- Multiple regression of inventory of drug use consequences, methadone levels
- Logistic regression of presence of illicit drugs in urine
Instruments

- **Spiritual Well-Being Scale**
  (Ellison & Paloutzian, 1982)
  - 20 items ($\alpha = 0.82-0.94$)
    - Existential Well-Being (10 items, $\alpha = 0.78-0.86$)
    - Religious Well-Being (10 items, $\alpha = 0.89-0.94$)

- **Religious Background and Behavior Questionnaire**
  (Connors, 1996)
  - 13 items ($\alpha = 0.86$)
    - God Consciousness (5 items, $\alpha = 0.76$)
    - Formal Practices (8 items, $\alpha = 0.81$)
Instruments

- **Patient Health Questionnaire 9-Item Depression Module**
  (Kroenke, Spitzer, & Williams, 2001)
  - 9 items ($\alpha = 0.90$)

- **State-Trait Anxiety Inventory**
  (Spielberger & Vagg, 1984)
  - 40 items (20 item subscales)
    - State ($\alpha = 0.92$)
    - Trait ($\alpha = 0.90$)

- **Inventory of Drug Use Consequences**
  (Tonigan & Miller, 2002)
  - 50 items ($\alpha = 0.82-0.96$)
## Sample Description

n=108

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean (SD)</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>34.8 (11.5)</td>
<td>21-65</td>
</tr>
<tr>
<td>Length of time in MMT (years)</td>
<td>3.1 (4.53)</td>
<td>0-28</td>
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</table>

<table>
<thead>
<tr>
<th></th>
<th>Number</th>
<th>Percent</th>
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<tbody>
<tr>
<td>Race-White</td>
<td>96</td>
<td>90</td>
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<tr>
<td>Ethnicity-Hispanic</td>
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<td>11</td>
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<tr>
<td>Sex-Female</td>
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<td>50</td>
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<table>
<thead>
<tr>
<th>Education</th>
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<tbody>
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<td>Less than H.S.</td>
<td>27</td>
<td>25</td>
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<tr>
<td>High School</td>
<td>69</td>
<td>64</td>
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<table>
<thead>
<tr>
<th>Years in MMT</th>
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<tbody>
<tr>
<td>&lt;1</td>
<td>40</td>
<td>37</td>
</tr>
<tr>
<td>1-2</td>
<td>19</td>
<td>17</td>
</tr>
<tr>
<td>2-3</td>
<td>13</td>
<td>12</td>
</tr>
<tr>
<td>3-5</td>
<td>13</td>
<td>12</td>
</tr>
<tr>
<td>5 or more</td>
<td>22</td>
<td>20</td>
</tr>
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</table>
## Sample Description

<table>
<thead>
<tr>
<th>Variables</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary Drug of Addiction</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heroin</td>
<td>46</td>
<td>43</td>
</tr>
<tr>
<td>Prescription opiates</td>
<td>36</td>
<td>33</td>
</tr>
<tr>
<td>Illegal Methadone</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>All opiates</td>
<td>17</td>
<td>16</td>
</tr>
<tr>
<td>Data not available</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>No previous drug treatment</td>
<td>30</td>
<td>28</td>
</tr>
</tbody>
</table>
## Results

<table>
<thead>
<tr>
<th>Scale</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Spiritual Well-Being Scale (SWBS)</strong></td>
<td>86.7</td>
<td>16.41</td>
<td>51-120</td>
</tr>
<tr>
<td>Existential Well-Being (EWB)</td>
<td>41.4</td>
<td>8.76</td>
<td>20-60</td>
</tr>
<tr>
<td>Religious Well-Being (RWB)</td>
<td>45.3</td>
<td>10.58</td>
<td>10-60</td>
</tr>
<tr>
<td><strong>Religious Background and Behavior (RBB)</strong></td>
<td>23.7</td>
<td>9.80</td>
<td>0-46</td>
</tr>
<tr>
<td>RBB God Consciousness Subscale</td>
<td>13.1</td>
<td>4.07</td>
<td>0-18</td>
</tr>
<tr>
<td>RBB Formal Practices Subscale</td>
<td>10.6</td>
<td>6.69</td>
<td>0-28</td>
</tr>
</tbody>
</table>
Results

- **Religious Background**
  - Spiritual 48 (44%)
  - Religious 45 (42%)
  - Unsure 11 (10%)

- **Spiritual History**
  - 1/3 indicated formal practices important in life
  - 1/2 meditated/prayed regularly
  - 2/3 indicated spirituality would impact treatment
  - 88% noted belief in higher power

- **SWBS mean score of 86.7**
  - literature mean 85.74 (Brome, 2000; Piederman, 2004; States, 2001)
**Correlation Matrix for Spiritual Well-Being, Religiosity, Depression, Anxiety and Drug Use Consequences (Pearson’s r correlations)**

<table>
<thead>
<tr>
<th></th>
<th>RBB</th>
<th>PHQ-9</th>
<th>STAI</th>
<th>INDUC</th>
</tr>
</thead>
<tbody>
<tr>
<td>SWBS</td>
<td>0.60**</td>
<td>-0.47**</td>
<td>-0.46**</td>
<td>-0.07</td>
</tr>
<tr>
<td>EWB</td>
<td>0.33**</td>
<td>-0.61*</td>
<td>-0.67**</td>
<td>-0.22*</td>
</tr>
<tr>
<td>RWB</td>
<td>0.65**</td>
<td>-0.22*</td>
<td>-0.17</td>
<td>0.07</td>
</tr>
<tr>
<td>RBB</td>
<td></td>
<td>-0.16</td>
<td>-0.12</td>
<td>0.03</td>
</tr>
<tr>
<td>PHQ-9</td>
<td></td>
<td></td>
<td>0.75**</td>
<td>0.39**</td>
</tr>
<tr>
<td>STAI</td>
<td></td>
<td></td>
<td></td>
<td>0.40**</td>
</tr>
</tbody>
</table>

*p < 0.05 (2-tailed)  **p < 0.01 (2-tailed)
Relationships between variables

Spiritual Measures
- Spiritual Well-Being
- Existential Well-Being
- Religious Well-Being
- Religiosity
  - Formal Practices
  - God Consciousness

Psychological Measures
- Depression
- Anxiety

Physiologic Measures
- Illicit Drugs in Urine
- Methadone Levels

Sociocultural/Developmental Measures
- Drug Use Consequences
Regressions

- Methadone levels
  - n=55, mean 441.6
  - SWB, religiosity, depression and anxiety were not predictive of levels
    \( F(4,50) = 1.13, p = .352 \)

- Urine samples
  - Presence of illicit drugs in 61 subjects (57%)
  - SWB, religiosity, depression and anxiety were not predictive of positive urines,
    \( F(4,103) = 1.08, p = .372 \).

- INDUC
  - Predictor Variables:
    - SWBS, RBB, PHQ-9, STAI
  - Significant Model
    - \( R^2 = 0.203 \) \( [AR^2 = 0.17] F(4,103) = 6.57, p < .001 \)
    - Predictor: Anxiety: \( t = 2.2, p = .031 \)
Conclusions

- MMT patients
  - describe themselves as spiritual or religious
  - have low SWB
- Spiritual history incomplete in many charts
  - formal practices were “significant” for many, but less attended regularly
- SWBS was related to both anxiety and depression (including subscale EWB).
  - EWB was related to negative drug use consequences
Limitations

- Convenience sample of controlled opiate use
- Supervised computer use
- Self-report measures
- Inaccurate chart data—missing, subjective
- Difficulties in studying spirituality/religiosity
  - Unclear definitions/conceptualizations
  - Personal topic
Future Directions

- Further explore spirituality/religiosity in the addicted population
  - Longitudinal study with spiritual/religious measures at entrance to treatment and repeated.
- Explore spiritual/religious interventions in MMT.
  - Collaborate with Chaplains.
- Explore spirituality of the care provider and the patient and how they relate to increase understanding of how to match providers to patients to most effectively treat addiction.
- Explore the data to answer other questions.
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