Fracked: Coal seam gas extraction and farmers’ mental health

Methuen Morgan Ph.D
Background Information
An Overview

Farming Stressors
Is Coal Seam Gas: A Stressor
Ranking the Stressors
Stress Profiles
Engagement Status
Mental Health Outcome
Conclusion
Coal Seam Gas and Farmers Mental Health
Stress Definition?

STRESS
THAT CONFUSION CREATED WHEN ONE'S MIND OVERRIDES THE BODY'S DESIRE TO CHoke THE LIVING SHIT OUT OF SOME ASSHOLE WHO DESPERATELY NEEDS IT!
A more Helpful Definition?

• May be either a stimulus or a response

• Stimulus – environmental event (e.g., natural or man-made event)

• Response – physiological outcome (Lazarus & Folkman 1984)
A more helpful definition?

- Stimulus = Stressor
- Response = Stress
General Farmer Stress Research

Participants.

- Edinburgh Farming Stress Inventory (Deary et al., 1997).
- DASS 21
- Farming Stress domains.
  - Time
  - Bureaucracy
  - Environmental
  - Isolation
  - Finance Farm Hazards
  - Time Pressure
  - Coal Seam Gas
Do Farmers Perceive CSG as a Unique Farm Stressor?

• No the do NOT!!
• They perceive it as 2 unique stressors!
• There is a differentiation between On-farm and Off-farm impacts
Coal Seam Gas Stressors

**Off-farm**
- Worry about children future
- Reduction in property values
- Degradation of environment
- Threats to human health
- Deteriorating community standards

**On-farm**
- Negative impact on farm activities
- Loss of privacy
- Impacts on profitability
- Dealings with CSG staff
Which Stressors were Perceived as the most Stressful?

- Off-farm CSG (3.07); Economic Viability (3.06); Weather (2.87)
- Time Pressures (2.60); Bureaucracy (2.53); Operational Debt (2.46)
- On-farm CSG (2.17); Farm Hazards (2.01)
- Social Isolation (1.62)
So does CSG contribute to negative mental health outcomes?

• In a word Yes. But the contribution was small.
• Social isolation and Off-Farm CSG concerns contributed to Depression.
• While Time Pressures, Social Isolation and Economic Viability contribute to Anxiety.
• Finally it was Time Pressures, Social isolation and Off-Farm CSG concerns contributing to Stress Reactivity.
Engagement Status

- No Lease (125)
- Lease – No Approach (155)
- Approach – rejected (34)
- Engaged (64)
Congratulations – you’re engaged!

Unsurprising No-Lease = lower stress
44% of those Engaged with CSG activities are stressed only by CSG
Further despite not being statistically significant
18% of this Engaged group are Globally Stressed

<table>
<thead>
<tr>
<th>Variables</th>
<th>Profile1: Non-Stressed</th>
<th>Profile 2: Finance-Stressed</th>
<th>Profile 3: CSG-Stressed</th>
<th>Profile 4: Globally-Stressed</th>
<th>Omnibus Significance Test</th>
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<tr>
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<td>Engagement Status</td>
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<tr>
<td>No Lease</td>
<td>83$^a$ (66.4%)</td>
<td>4.9</td>
<td>30$^b$ (24.0%)</td>
<td>-1.4</td>
<td>4$^c$ (3.2%)</td>
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<tr>
<td>Lease - No approach</td>
<td>54$^{ab}$ (34.9%)</td>
<td>-0.9</td>
<td>60$^b$ (38.7%)</td>
<td>1.7</td>
<td>16$^a$ (10.3%)</td>
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<td>Approach - Rejected</td>
<td>3$^a$ (8.8%)</td>
<td>-2.8</td>
<td>11$^b$ (32.4%)</td>
<td>0.1</td>
<td>10$^b$ (29.4%)</td>
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<tr>
<td>Engaged</td>
<td>8$^a$ (12.5%)</td>
<td>-3.4</td>
<td>16$^{ab}$ (25.0%)</td>
<td>-0.9</td>
<td>28$^c$ (43.8%)</td>
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### Mental Health Outcomes for Each Engagement Group

<table>
<thead>
<tr>
<th>Profile Variables</th>
<th>Profile 1: Non-stressed</th>
<th>Profile 2: Finance-Stressed</th>
<th>Profile 3: CSG-Stressed</th>
<th>Profile 4: Globally-Stressed</th>
<th>Univariate</th>
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<td>M</td>
<td>SD</td>
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<tr>
<td>Depression</td>
<td>6.23&lt;sup&gt;a&lt;/sup&gt;</td>
<td>7.07</td>
<td>7.73&lt;sup&gt;ab&lt;/sup&gt;</td>
<td>7.11</td>
<td>9.58&lt;sup&gt;bc&lt;/sup&gt;</td>
</tr>
<tr>
<td>Anxiety</td>
<td>2.93&lt;sup&gt;a&lt;/sup&gt;</td>
<td>5.17</td>
<td>3.69&lt;sup&gt;a&lt;/sup&gt;</td>
<td>5.07</td>
<td>3.86&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>Stress reactivity</td>
<td>7.86&lt;sup&gt;a&lt;/sup&gt;</td>
<td>7.07</td>
<td>12.27&lt;sup&gt;b&lt;/sup&gt;</td>
<td>8.33</td>
<td>11.48&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
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(1) Depression: (0-9 normal; 10-13 mild, 14-20 moderate, 21-27 severe, 28+ extremely severe), (2) Anxiety: (0-7 normal, 8-9 mild, 10-14 moderate, 15-19 severe, 20+ extremely severe), and (3) Stress reactivity (0-14, normal, 15-18 mild, 19-25 moderate, 26-33 severe and 34+ extremely severe).
Take Home Messages from this Study

• Farmers’ CSG concerns related to community and health impacts of CSG explained unique variance in depression and stress reactivity, after controlling for other common agricultural stressors.
Take Home Messages from this Study

- Stress profiles can be created providing an insight into how best to tailor and subsequently communicate messages and intervention information
CSG concerns also played a central role in two of the four farmer stress profile segments identified in our sample. Both of these segments exhibited “clinically significant” levels psychological morbidity, albeit in the low to moderate regions of severity.
Take Home Messages from this Study

• Finally there were a statistically higher number of farmers who have voluntarily engaged with the industry in the CSG Stressed profile and this profile also report clinically significant levels of depression and stress reactivity
Thank you

For every difficult and complicated question there is an answer that is simple, easily understood and wrong

H.L. Mencken