Burnout, depression, and general health: the results of a cluster analysis of survey data for U.S. residents

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Disclosure

I have nothing to disclose
My source of joy and meaning
In the 1980s, Dr. Baldwin began asking medical students and residents about their clinical learning experiences.

Bud did the first empirical research on their mistreatment and developed typologies to measure belittlement and humiliation.

Learning, satisfaction, and mistreatment during medical internship. JAMA 1998;279:1194-9
Our research team!

Dr. Kristen DeCarlo

Dr. Paul Rockey

Dr. Joanne Schwartzberg
Study question

- Do U.S. residents, clustered based on their responses to burnout survey items, also respond differently regarding their general health and rates of depression?
Multispecialty Survey of US residents and fellows

• Jan – May of 2017
  • Following required accreditation survey, residents presented with optional, anonymous survey link
  • 14,088 respondents (10.9% of U.S. residents and fellows)

• Clustering based on 6 items from Oldenburg Burnout Inventory (OLBI)
• Also queried general health (1 item)
• PHQ-2 Depression screen (2 items)
Burnout items from Oldenburg Burnout Inventory

Exhaustion items

• After work, I tend to need more time than in the past in order to relax and feel better.
• During my work, I often feel emotionally drained.
• After my work, I usually feel worn out and weary

Engagement items

• I always find new and interesting aspects in my work.
• I find my work to be a positive challenge.
• I feel more and more engaged in my work.

Strongly Agree  Agree  Disagree  Strongly Disagree
K-Means Cluster Analysis
Disengagement Score

- I always find new and interesting aspects in my work.
- I feel more and more engaged in my work.
- I find my work to be a positive challenge.
  1. Strongly Agree
  2. Agree
  3. Disagree
  4. Strongly Disagree

Sum of all 3 response scores = Disengagement Score
3 = Highly Engaged
12 = Highly Disengaged
• After work, I tend to need more time than in the past in order to relax and feel better.
• During my work, I often feel emotionally drained.
• After my work, I usually feel worn out and weary.

1. Strongly Disagree
2. Disagree
3. Agree
4. Strongly Agree

Sum of all 3 response scores = Emotional Exhaustion Score
3 = Not at all Emotionally Exhausted
12 = Maximally Emotionally Exhausted
## Cluster Means, Proportions, N’s

<table>
<thead>
<tr>
<th>Cluster</th>
<th>Disengagement Score</th>
<th>Exhaustion Score</th>
<th>Proportion</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thriving</td>
<td>3.65</td>
<td>5.87</td>
<td>27.0%</td>
<td>3801</td>
</tr>
<tr>
<td>Coping</td>
<td>6.11</td>
<td>7.15</td>
<td>29.5%</td>
<td>4161</td>
</tr>
<tr>
<td>Struggling</td>
<td>5.97</td>
<td>9.94</td>
<td>29.9%</td>
<td>4219</td>
</tr>
<tr>
<td>Drowning</td>
<td>9.01</td>
<td>10.55</td>
<td>13.5%</td>
<td>1907</td>
</tr>
</tbody>
</table>
Cluster visualization

- Emotional Exhaustion Score
- Disengagement Score

Clusters:
- Coping
- Drowning
- Thriving
- Struggling
## Cluster Proportions

<table>
<thead>
<tr>
<th>Cluster</th>
<th>Belittled or Humiliated</th>
<th>Depression Screen (PHQ2 of 3+)</th>
<th>Depression Symptoms (PHQ2 of 2+)</th>
<th>Fair or Poor General Health</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thriving</td>
<td>10%</td>
<td>1%</td>
<td>7%</td>
<td>2%</td>
</tr>
<tr>
<td>Coping</td>
<td>22%</td>
<td>4%</td>
<td>19%</td>
<td>4%</td>
</tr>
<tr>
<td>Struggling</td>
<td>38%</td>
<td>18%</td>
<td>49%</td>
<td>14%</td>
</tr>
<tr>
<td>Drowning</td>
<td>55%</td>
<td>46%</td>
<td>76%</td>
<td>31%</td>
</tr>
</tbody>
</table>
Over the last 2 weeks, on how many days have you felt that you did NOT have enough time to think and reflect?
Not enough time to think and reflect

<table>
<thead>
<tr>
<th>Cluster</th>
<th>Mean number of days reported with not enough time to think and reflect (out of 14)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thriving</td>
<td>2.15</td>
</tr>
<tr>
<td>Coping</td>
<td>4.06</td>
</tr>
<tr>
<td>Struggling</td>
<td>7.84</td>
</tr>
<tr>
<td>Drowning</td>
<td>9.89</td>
</tr>
</tbody>
</table>
Interventions based on Cluster?

<table>
<thead>
<tr>
<th>Cluster</th>
<th>Intervention Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thriving</td>
<td>• Encourage resident to reach out to friends and family</td>
</tr>
<tr>
<td></td>
<td>• Share strategies for self-care with other clusters</td>
</tr>
<tr>
<td>Coping</td>
<td>• Check-in on resident perception of career trajectory</td>
</tr>
<tr>
<td></td>
<td>• Realize/show real impact of patient care</td>
</tr>
<tr>
<td>Struggling</td>
<td>• Mentorship: from peer or superior</td>
</tr>
<tr>
<td></td>
<td>• Revisit professional goals</td>
</tr>
<tr>
<td>Drowning</td>
<td>• Robust detection mechanisms: peers, students, nurses, faculty</td>
</tr>
<tr>
<td></td>
<td>• Individual care: psychotherapy, medication, remediation</td>
</tr>
</tbody>
</table>
Takeaways

• “Burnout” and its elements (subscales) is experienced on a continuum that can vary based on clinical environments (rotations)

• Higher “scores” of emotional exhaustion and disengagement are associated with increased risks of depression and suboptimal general health
Limitations

• Sample
• Specialty makeup of sample
• Burnout scale and subscales
• Depression screen
• Cross-sectional data
Thank You!

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