Disclosure of Commercial Interest: None of the authors have a financial relationship with a commercial organization that may have a direct or indirect interest in the content.
What is Burnout?

• Burnout is a psychological syndrome defined by Maslach as emotional exhaustion, depersonalization, and sense of lack of personal accomplishment.

• The syndrome is a result of prolonged occupational stress, in which the burned out individual becomes increasingly cynical, callous to those they are serving, and grow increasingly dissatisfied with their accomplishments within the workplace.
Why Does Burnout Matter?

• Burnout syndrome can lead to deterioration in the quality of care or service that is provided by staff, and reflects a factor in job turnover, absenteeism, and low morale.

• Burnout may lead to physical exhaustion, insomnia, increased use of alcohol and drugs, and marital and family problems.
Burnout in Medicine

• Burnout in medicine:
  o Linked to a lower degree of medical knowledge
  o Deterioration of professionalism
  o Suboptimal patient care
  o Medical errors
  o Early retirement
  o Reduced empathy
Goals and Objectives

- Determine the prevalence of burnout amongst musculoskeletal (MSK) radiology fellows.
- Explore significant causes of emotional stress that might contribute to burnout.
The study was granted exemption by the Investigational Review Board at the University of Washington.

Society of Skeletal Radiology website was used to identify the MSK radiology fellowship director/equivalent at 82 programs.

A survey on SurveyMonkey* was made available to MSK radiology fellows through the fellowship contact via email notification (~180 fellows).

* www.surveymonkey.com
24-items

- 2 requests made to program director/equivalent, separated by 1 week
- Survey closed 1 week after the second request

3 demographic questions
7 questions adapted from the Maslach Burnout Inventory (MBI) to assess burnout
2 questions regarding dissatisfaction with radiology
3 questions regarding financial stress
2 questions exploring work-life balance and demands related to care of dependents
4 questions pertaining to the evolution of healthcare and job market constraints
2 questions pertaining to feelings of powerlessness and isolation in the workplace
1 open-ended comments item
Maslach Burnout Inventory

22-item tool established in 1981 by Maslach and Jackson, with burnout comprised of 3 subscales of the syndrome:

- Emotional Wellness
- Depersonalization
- Personal Accomplishment
• Maslach et al. 2010 report normative ranges for low, medium, and high levels of burnout for various occupational groups, including “medicine”:

  o High levels of burnout in this population include subscale scores of:

    • Depersonalization > 9
    • Emotional exhaustion > 26
    • Personal accomplishment < 34
Potential Contributors to Burnout

• Through a review of the literature, 13 items were presented addressing stress generators that may contribute to burnout
Results

• The proportion of women in our sample is 0.17 (we estimate the proportion of female MSK fellows in the US in recent years has been 0.15-0.25, based on a range of sources)

• Prior studies indicate women differ from men in their susceptibility to burnout, as well exposure and response to stressors

• Our analyses use post-stratification weights based on an estimated female proportion of 0.20 in the population
Depersonalization Amongst MSK Fellows

**Fig. 1: rMBI Depersonalization Subscale**

- Medicine mean 7.12, Maslach 2010
- MSK Radiology Fellows mean 11.1

F(1, 57) = 0.52, Prob. > F = 0.47

Normative threshold ≥ 10

Lower values = less burnout
Emotional Exhaustion Amongst MSK Fellows

Fig. 2: rMBI Emotional Exhaustion Subscale

- Normative threshold ≥ 27
- F(1, 57) = 0.71, Prob. > F = 0.40

- Medicine mean 22.19, Maslach 2010
- MSK Radiology Fellows mean 25.1

Lower values = less burnout
Personal Accomplishment Deficiency Amongst MSK Fellows

Fig. 3: rMBI Personal Accomplishment Subscale

- $F(1, 57) = 0.05$, Prob. $> F = 0.83$
- Normative threshold ≤33
- Medicine mean 36.53, Maslach 2010
- rMBI Item-weighted Personal Accomplishment Total
  - Lower values = more burnout
## Results

<table>
<thead>
<tr>
<th>Normative thresholds (physicians and nurses)</th>
<th>Emotional Exhaustion</th>
<th>Depersonalization</th>
<th>Personal Accomplishment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maslach 2010</td>
<td>19.86</td>
<td>7.43</td>
<td>36.29</td>
</tr>
<tr>
<td>MSK Radiology</td>
<td>24.37</td>
<td>10.73†</td>
<td>28.3†</td>
</tr>
<tr>
<td>Maslach 2010</td>
<td>20.99</td>
<td>7.02</td>
<td>36.50</td>
</tr>
<tr>
<td>MSK Radiology</td>
<td>27.90†</td>
<td>12.5†</td>
<td>28.4†</td>
</tr>
</tbody>
</table>

### Adjusted Wald Tests of Subscale Means (Male-Female Comparisons)

<table>
<thead>
<tr>
<th>F (1, 57)</th>
<th>Prob &gt; F</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.71</td>
<td>0.52</td>
</tr>
<tr>
<td>0.40</td>
<td>0.47</td>
</tr>
</tbody>
</table>

† Indicates value in “high” range of Maslach et al’s (2010) normative distributions.
Results Summary

• When comparing the weighted subscale means in our data with the normative subscale thresholds for medical occupations, MSK radiology fellows report relatively high levels of burnout with regard to personal accomplishment and depersonalization.

• Levels of emotional exhaustion in our sample are within the average range reported by Maslach et al. 2010.
Male vs Female Influence

Fig. 4: rMBI Depersonalization Subscale by Sex

- Male:
  - Lower values = less burnout

- Female:
  - Lower values = less burnout

rMBI Depersonalization Total

F(1, 57) = 0.52, Prob. > F = 0.47
Male vs Female Influence

Fig. 5: rMBI Emotional Exhaustion Subscale by Sex

F(1, 57) = 0.71, Prob. > F = 0.40
Male vs Female Influence

Fig. 6: rMBI Personal Accomplishment Subscale by Sex

- Male
- Female

rMBI Personal Accomplishment Total

$F(1, 57) = 0.05$, Prob. $> F = 0.83$
Sources of Burnout

We regressed emotional exhaustion, depersonalization, and personal accomplishment subscales on 4 measures:

<table>
<thead>
<tr>
<th>Financial circumstances</th>
<th>Regulatory changes associated with the Affordable Care Act AND job market conditions</th>
<th>Work-life balance AND care for dependents</th>
<th>Local practice conditions</th>
</tr>
</thead>
</table>
No effects of financial stressors, changes in health care regulations, or isolation at work on any of the 3 burnout subscales

Job market-related stress AND effort required providing care for dependents significantly affect personal accomplishment

Imbalances in work-life relationship AND feelings of powerlessness significantly affect depersonalization and emotional exhaustion

MSK radiology fellows dissatisfied with their subfield report higher levels of depersonalization and emotional exhaustion
Stressor Results and Gender Influence

Fig. 7: Financial Stress (3-Item Average)

Fig. 8: Financial Stress by Sex (3-Item Average)
Stressor Results and Gender Influence

Fig. 9: Job Market Stress (2-Item Average)

Fig. 10: Job Market Stress by Sex (2-Item Average)
Stressor Results and Gender Influence

**Fig. 11: Stress from Changes in Health Care Regulations (2-Item Average)**

- **Health Care Regulations Stress**
  - Higher Values = Greater Stress

**Fig. 12: Stress from Changes in Health Care Regulations, by Sex (2-Item Average)**

- **Male**
- **Female**
  - Health Care Regulations Stress
  - Higher Values = Greater Stress
Stressor Results and Gender Influence

Fig. 13: Work-life Balance Stress

Fig. 14: Worklife Balance Stress, by Sex
Stressor Results and Gender Influence

**Fig. 15: Stress from Caring for Dependents**

- Strong Disagree/Disagree: 35.3338%
- Neutral: 20.6667%
- Agree/Strong Agree: 43.9995%

**Fig. 16: Stress from Caring for Dependents, by Sex**

- **Male**
  - Strong Disagree/Disagree: 29.1667%
  - Neutral: 20.8333%
  - Agree/Strong Agree: 50%

- **Female**
  - Strong Disagree/Disagree: 90%
  - Neutral: 20%
  - Agree/Strong Agree: 20%

Graphs by Sex
Stressor Results and Gender Influence

Fig. 17: Stress from Caring for Dependents

Fig. 18: Stress from Caring for Dependents, by Sex

Graphs by Sex
Stressor Results and Gender Influence

Fig. 19: Stress from Isolation at Work

<table>
<thead>
<tr>
<th>Response Level</th>
<th>% of Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strong Disagree/Disagree</td>
<td>74.3334</td>
</tr>
<tr>
<td>Neutral</td>
<td>16.9999</td>
</tr>
<tr>
<td>Agree/Strong Agree</td>
<td>8.66669</td>
</tr>
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</table>

Fig. 20: Stress from Caring for Dependents, by Sex

<table>
<thead>
<tr>
<th>Response Level</th>
<th>% of Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strong Disagree/Disagree</td>
<td>Male: 72.9167, Female: 8.33333</td>
</tr>
<tr>
<td>Neutral</td>
<td>Male: 18.75, Female: 10</td>
</tr>
<tr>
<td>Agree/Strong Agree</td>
<td>Male: 8.33333, Female: 10</td>
</tr>
</tbody>
</table>

Graphs by Sex
Satisfaction with MSK Radiology and Gender Influence

Fig. 21: Satisfaction with Subfield / Specialization (2-Item Average)

Fig. 22: Satisfaction with Subfield / Specialization, by Sex (2-Item Average)
How do we put out the fire?

• Unfortunately, MSK radiology fellows report relatively high levels of burnout with regard to lack of personal accomplishment and depersonalization, whereas emotional exhaustion levels from our sample are within the average range reported by Maslach et al. 2010 for medical occupations.

• Author Sam Keen once wrote: “Burnout is nature’s way of telling you, you’ve been going through the motions your soul has departed; you’re a zombie, a member of the walking dead, a sleep walker.”
How do we put out the fire?

• Sleepwalking is NO WAY TO PRACTICE MEDICINE!

• Nicola et al. report a series of strategies that may reduce burnout in the field of radiology:
  
  o Physical fitness
  o Minimize distractions in the reading room
  o Structure time commitments
  o Create routine workplace activities
  o Enhance your social network
  o Maintain a sense of purpose
  o Augment your social status
References:


