Reported Pain at Work Is a Risk Factor for Vascular Surgery Trainee Burnout

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Background
Reported musculoskeletal pain is especially prevalent among vascular surgeons and a risk factor for burnout and attrition. Ergonomic habits start while in training and understanding work-related pain needs to be addressed.

Objectives
To evaluate whether pain resulting from operative procedures is associated with vascular trainee burnout.

Methods
Cross-sectional study where vascular surgery trainees (integrated and traditional fellows) voluntarily completed a confidential survey after the 2022 VSITE.

• Self-reported questions:
  • Demographics
  • Mistreatment
  • Burnout
  • Attrition
  • Suicidal Ideation
  • Thoughts of career change
  • Work-related pain

Table 1. Vascular Surgery Trainee Reported Pain

<table>
<thead>
<tr>
<th>Percent</th>
<th>Mild</th>
<th>Moderate</th>
<th>Severe</th>
</tr>
</thead>
<tbody>
<tr>
<td>33.0%</td>
<td>30.9%</td>
<td>7.1%</td>
<td></td>
</tr>
</tbody>
</table>

Figure 1. Vascular Surgery Trainee Report

527 Vascular Surgery Trainees Complted Survey

66.9% Male
35.1% Female

52.2% Response Rate

Table 2. Moderate to Severe Pain: Experiences

<table>
<thead>
<tr>
<th>Moderate to Severe Pain</th>
<th>Yes (N=200)</th>
<th>No (N=327, %)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Did not feel they had appropriate level of OR autonomy</td>
<td>8.3</td>
<td>4.1</td>
<td>0.06</td>
</tr>
<tr>
<td>Thoughts of Attrition</td>
<td>15.0</td>
<td>9.0</td>
<td>0.047</td>
</tr>
<tr>
<td>Thoughts of Career Change</td>
<td>14.5</td>
<td>7.9</td>
<td>0.02</td>
</tr>
<tr>
<td>Burnout</td>
<td>62.8</td>
<td>35.5</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Any Mistreatment</td>
<td>79.9</td>
<td>54.1</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

Table 2. Reported Pain Management Modalities

<table>
<thead>
<tr>
<th>Pain Management Modality</th>
<th>Moderate to Severe (N=200, %)</th>
<th>Mild (N=174, %)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>OTC Medications</td>
<td>61.0</td>
<td>47.7</td>
<td>0.01</td>
</tr>
<tr>
<td>Oral/bottle (e.g. brace, footwear, etc)</td>
<td>26.0</td>
<td>13.2</td>
<td>0.002</td>
</tr>
<tr>
<td>Yoga/Pilates</td>
<td>29.5</td>
<td>32.8</td>
<td>0.50</td>
</tr>
<tr>
<td>Physiotherapy</td>
<td>7.5</td>
<td>5.5</td>
<td>0.07</td>
</tr>
<tr>
<td>Massage</td>
<td>40.5</td>
<td>25.9</td>
<td>0.003</td>
</tr>
<tr>
<td>Chiropractic/ Acupuncture</td>
<td>64.0</td>
<td>57.5</td>
<td>0.20</td>
</tr>
</tbody>
</table>

Figure 2. Associated Risk Factors

Burnout
- Moderate to Severe Pain (OR 2.52)
- Physiotherapy (OR 3.06)
- Did not feel they had appropriate level of OR autonomy (OR 9.89)
- Any Mistreatment (OR 5.20)

Attrition
- Did not feel they had appropriate level of OR autonomy (OR 9.99)

Suicidal Ideation
- Did not feel they had appropriate level of OR autonomy (OR 5.50)

*Adjusting for gender, reported pain, race/ethnicity, pain management modalities, and training level

Results
- 527 trainees completed the survey
- 71% of all trainees reported some form of work-related pain, with 33% reporting mild, followed by 31% moderate, and 7% severe
- There was a disproportionate amount of women reporting more moderate to severe pain compared to men.
- Trainees with moderate to severe pain had higher rates of thoughts of attrition, career change, burnout, and mistreatment.
- Moderate to severe pain, physiotherapy, lack of proper OR autonomy and any mistreatment were risk factors for burnout. Lack of proper OR autonomy and any mistreatment were risk factors for thoughts of career change and thoughts of suicidal ideation after adjusting for gender, reported pain, race/ethnicity, pain management modalities, and training level.

Conclusions
- > 1/3 of trainees reported moderate to severe occupational pain
- More female trainees reported occupational pain than male trainees
- Work-related pain remained an independent risk factor for trainee burnout, highlighting the need for targeted intervention.