Performance and Proximity
Exploring Resident Factors that Impact the Quality of Work-based Assessments

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September 30, 2016
I do not have an affiliation (financial or otherwise) with a pharmaceutical, medical device or communications organization.

Je n’ai aucune affiliation (financière ou autre) avec une entreprise pharmaceutique, un fabricant d’appareils médicaux ou un cabinet de communication.
An issue of quality

• Work-based assessments – an important means of reporting expert judgments of trainee performance in clinical practice

• Concerns that clinical supervisors do not complete these assessments to a high standard
  ➢ Underperforming trainees
  ➢ Supervisor-trainee relationship
Objectives

• To examine the relationship between resident performance and the quality of assessments completed by supervisors

• To determine whether this relationship differed when supervisors worked with on-service vs. off-service residents
Methods

• Setting: Department of Emergency Medicine, University of Ottawa

• Work-based assessment = Daily Encounter Card (DEC)
  ▶ Collected DECs from our electronic database
  ▶ Completed by 20 clinical supervisors (2013-2014)
  ▶ n=383 DECs
Methods

• Resident performance = means score on performance items
  ➢ 5 = strong performance, 1 = poor performance

• Two raters scored the quality of each DEC using the Completed Clinical Evaluation Report Rating (CCERR)
  ➢ 9-item instrument
  ➢ Ability to discriminate DEC quality and produce reliable scores†

Analysis

• Resident performance and DEC Quality
  ▶ Linear regression analysis
    » Resident performance treated as the independent measure
    » CCERR score treated as the dependent measure

• Separate linear regressions were conducted for DECs completed for on-service residents and off-service residents
Results

CCERR Score
Resident Performance

\[y = 27.25 - 1.6x\]
Discussion

• Supervisors are making greater efforts to justify and document assessments and provide useful feedback when residents are struggling
  
  > Jackson et al. 2015

• Need to determine ways of improving the quality of assessments for residents who are appropriately progressing in their training
Results

\[ y = 29.99 - 2.24x \]

\[ y = 22.03 - 0.38x \]
Discussion

• Quality of assessments remained poor for off-service residents, even if they were underperforming

• Cause for concern:
  ➢ Residents may spend 40-50% of their junior years off-service
  ➢ Assessments during these rotations may not be sufficiently detailed to identify a struggling resident
  ➢ Underperforming residents may not be identified until late in their training
Discussion

• Supervisors completed assessments differently for on-service and off-service residents

• Possible influence of the supervisor-trainee relationship, or the “Educational Alliance”†

Conclusions

• Trainee performance and proximity are important factors impacting the quality of WBAs
  › Inverse relationship between resident performance and DEC quality
  › Only observed in the on-service group

• Need to determine ways of improving the quality of assessments for:
  › Trainees appropriately progressing in their training
  › Off-service trainees
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Completed Clinical Evaluation Report Rating (CCERR)

1. The checklist/numeric ratings show **sufficient variability** to allow identification of relative strengths and weaknesses of the trainee.
2. Comments are **balanced** providing both strengths and areas for improvement.
3. The trainee’s **response to feedback** and/or remediation during the rotation is described in the comments.
4. Comments **justify** the ratings provided.
5. Clearly explained **examples of strengths** using specific descriptions (not generalizations) are provided in the comments.
6. Clearly explained **examples of weaknesses** using specific descriptions (not generalizations) are provided in the comments.
7. Concrete **recommendations** for the trainee to attain a higher level of performance are provided.
8. Comments are provided in a **supportive manner**.
9. Overall, this DEC provides **enough detail** for an independent reviewer to clearly understand the trainee’s performance on the rotation.
## Generalizability Analysis

<table>
<thead>
<tr>
<th>Facet</th>
<th>VC</th>
<th>% Variance</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>s</td>
<td>0.146</td>
<td>15</td>
<td>The variance attributable to differences between supervisors</td>
</tr>
<tr>
<td>d:s</td>
<td>0.130</td>
<td>13</td>
<td>The variance attributable to differences between DEC within particular supervisors</td>
</tr>
<tr>
<td>r</td>
<td>0.000</td>
<td>0</td>
<td>The variance attributable to differences between raters</td>
</tr>
<tr>
<td>i</td>
<td>0.189</td>
<td>19</td>
<td>The variance attributable to differences between items</td>
</tr>
<tr>
<td>sr</td>
<td>0.000</td>
<td>0</td>
<td>The variance attributable to the supervisor-rater interaction (i.e. did some raters rate supervisors differently than other raters?)</td>
</tr>
<tr>
<td>si</td>
<td>0.082</td>
<td>8</td>
<td>The variance attributable to the supervisor-item interaction (i.e. did some items have different scores depending on the supervisor?)</td>
</tr>
<tr>
<td>dr:s</td>
<td>0.008</td>
<td>1</td>
<td>The variance attributable to the DEC-rater interaction (i.e. did some raters rate supervisors' DEC's differently than other raters?)</td>
</tr>
<tr>
<td>di:s</td>
<td>0.176</td>
<td>18</td>
<td>The variance attributable to the DEC-item interaction (i.e. did some items have different scores depending on the DEC a supervisor completed?)</td>
</tr>
<tr>
<td>ri</td>
<td>0.073</td>
<td>7</td>
<td>The variance attributable to the item-rater interaction (i.e. did some raters score items differently than other raters?)</td>
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<tr>
<td>sri</td>
<td>0.011</td>
<td>1</td>
<td>The variance attributable to the supervisor-item-rater interaction (i.e. did some raters score items and supervisors differently than other raters?)</td>
</tr>
<tr>
<td>dri:s</td>
<td>0.165</td>
<td>17</td>
<td>The variance attributable to the DEC-item-rater interaction plus random error</td>
</tr>
</tbody>
</table>

s (supervisor); r (rater); i (item); d (DEC); VC (variance component)