How to prioritize work-related psychosocial factors impacting mental health? Regression and random forest approaches
Oumou S. Daouda, Laura Temime, Gilbert Saporta, Mounia Hocine

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Mental health disorders are both a major public health and economic issue. In modern professional life, its prevention and promotion have become a major challenge for decision-makers. A broad range of work-related psycho-social factors (PSFs) have been documented as having an impact on mental health. Decision-makers lack pertinent methodological tools to help them identify key PSFs on which they may act to improve mental health among employees. Most published studies attempting to hierarchize PSFs have focused on their importance only i.e. the strength of their association with mental health. However, the exposure prevalence to each PSF, that is, its performance, is also important to consider.

To propose a new adjusted ranking index (RI) to hierarchize PSFs, that jointly takes into account their importance and their performance.

Results

<table>
<thead>
<tr>
<th>Rank</th>
<th>#PSF</th>
<th>PSF Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5</td>
<td>Unsatisfactory communication at work</td>
</tr>
<tr>
<td>2</td>
<td>18</td>
<td>Inability to depend on work collaborators</td>
</tr>
<tr>
<td>3</td>
<td>9</td>
<td>Imbalance private and professional life</td>
</tr>
<tr>
<td>4</td>
<td>36</td>
<td>Emotional demands at work</td>
</tr>
<tr>
<td>5</td>
<td>22</td>
<td>No good career prospects</td>
</tr>
<tr>
<td>6</td>
<td>13</td>
<td>Not feeling valued or recognized at work</td>
</tr>
</tbody>
</table>

PSF importance was normalized to 100% to ensure a better comparability between the two methods. The PSF rankings obtained with the two approaches are strongly consistent with each other (Spearman correlation coefficient = 0.73; p-value < .001). From the 10 PSFs with the highest RIs, a total of six were found in common (in bold) and thus identified as key for decision making. These PSFs can also be visually identified from the RI-isocurves.

Conclusion

To our knowledge, this is the first study considering jointly the importance of PSFs and their exposure prevalence for decision making in work-related health, using multivariate approaches. A causal analysis is needed to complete all the results already obtained to identify the drivers of mental health improvement. These findings have the potential to help improve the quality of life of employees.

References:
2. Wallard H. Using Explained Variance Allocation to analyse Importance of Predictors. 16th ASMDA, Conference Proceeding. 2015;1043-1054