Understanding accountability and its links to individual health and safety in the Australian mining industry.

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Background to the research

- Accountability is critical to organisational functioning & culture:
  - All social systems rely on shared expectations + rewards/punishments in order to function.

- Accountability is critical to safety:
  - We implicitly know this.
  - Incident reports frequently cite failure to follow procedures as a contributing factor.

- **BUT** there is almost no research on accountability in a health and safety context.

Need to quantify & benchmark
Model of Accountability

Shared Expectations
- Clearly understood
- Appropriate
- Achievable

Feedback
- Two-way process
- Ongoing

Salience
- Perceived importance
- Impact on others

Integrity
- Fairness
- Consistency between words and actions
Three Survey Studies

- **Study 1:** ~ 2,500 mining employees, multiple mine sites, all organisational levels.

- **Study 2:** Queensland open-cut. 152 employees.

- **Study 3:** NSW underground. 166 employees.

**Measures:**
- Accountability
- Safety culture (Smith, Garret & Calvert, 2006)
- Work stress
- Personal agency e.g. “If I’m safe at work its because I make sure of it” (Strahan, 2003)
- Safety empowerment e.g. “I can’t do anything to change procedures at my place of work” (Strahan, 2003)
- Preventative coping with fatigue (Strahan, 2003)
- Psychological wellbeing (depression) (Radloff, 1977)
Results

** Significant p < .01. Values represent correlations.

- Safety Culture
- Safety Empowerment
- Psychological Well-being
- Work Stress
- Preventative coping
- Personal agency

Accountability

- Safety Culture: .59**
- Psychological Well-being: .38**/ .45**
- Work Stress: -.36**
- Preventative coping: .14 / .22**
- Safety Empowerment: .27**/ .07
- Personal agency: -.35**/ -.26**
Because accountability is multi-dimensional we were able to rank each component in terms of its relationships with health and safety variables.

1. **Expectations** - clear, appropriate and achievable.

2. **Feedback** - performance based, consistent.

3. **Integrity** – words match actions.

4. **Salience** – work is seen as important.

### Results

<table>
<thead>
<tr>
<th>Accountability Components</th>
<th>Safety</th>
<th>Work</th>
<th>Personal</th>
<th>Safety</th>
<th>Preventative</th>
<th>Psychological</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Culture</td>
<td>Stress</td>
<td>Agency</td>
<td>Empowerment</td>
<td>Coping</td>
<td>Well-being</td>
</tr>
<tr>
<td>Expectations</td>
<td>.53**</td>
<td>-.43**</td>
<td>.21**/.16*</td>
<td>.28**/.34**</td>
<td>.16/.17*</td>
<td>-.35**/-.23**</td>
</tr>
<tr>
<td>Feedback</td>
<td>.52**</td>
<td>-.26**</td>
<td>.19*/.02</td>
<td>.26**/.33**</td>
<td>.14/.18*</td>
<td>-.24**/-.15</td>
</tr>
<tr>
<td>Integrity</td>
<td>.23**</td>
<td>-.11**</td>
<td>.05*/.04</td>
<td>.24**/.19*</td>
<td>.04/.03</td>
<td>-.06/-1.13</td>
</tr>
<tr>
<td>Salience</td>
<td>.24**</td>
<td>-.14**</td>
<td>.19*/.03</td>
<td>.10*/.29**</td>
<td>-.02/.09</td>
<td>-.12/-.13</td>
</tr>
</tbody>
</table>

*Note.* *p < .05, **p < .01. Safety culture and work stress correlations are from Study 1. Remaining results are from Study 2/Study3.
Results

<table>
<thead>
<tr>
<th>Study</th>
<th>Agree/Slightly Agree</th>
<th>Neutral</th>
<th>Disagree/Slightly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dusty work permitting</td>
<td>39.3</td>
<td>30.3</td>
<td>30.4</td>
</tr>
<tr>
<td>Officially there are consequences, but in reality not much happens (Study 1)</td>
<td>23.3</td>
<td>36.4</td>
<td>40.3</td>
</tr>
<tr>
<td>Officially there are consequences, but in reality not much happens (Study 2)</td>
<td>27.7</td>
<td>41.4</td>
<td>30.9</td>
</tr>
<tr>
<td>Officially there are consequences, but in reality not much happens (Study 3)</td>
<td>17.4</td>
<td>28.9</td>
<td>53.6</td>
</tr>
</tbody>
</table>

What might these results mean for individual behaviour and safety performance?
Conclusions

- Accountability is an integral part of organisational culture that is linked to individual health and safety.

Future

- Measure/Benchmark/Monitor.
- Perceptions of accountability within groups/crews $\rightarrow$ safety performance.
- Enhancing accountability within organisations.
Thankyou

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References
