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Use of Publication Procedures to Improve Research Integrity by Alcohol and Other Drug Journals

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Replication Crisis

- Vast majority of published results are positive
- Many cannot be replicated
- Many produced through flexible data analysis
  - HARKing
  - P-hacking
Scope of the Problem

- Such problems found in clinical & preclinical research, psychology, epidemiology, political science & biology

- Journals in applied research areas & “soft” sciences are especially inclined to publish positive results

- Thus, relevant to addiction research
Proposed Solutions

• Conflict of Interest (CoI) Declarations
• Study Guidelines
• Preregistration of Randomized Controlled Trials (RCTs)
• Preregistration of Other Study Designs
• Data & Methods Sharing
• Registered Reports
How many of these 6 publication procedures have been adopted by alcohol & other drug (AOD) journals?

34 high-impact AOD journals identified using Clarivate Analytics’ 2018 Journal Citation Report (JCR)
  – 1 review, 2 tobacco & 2 gambling journals excluded from the 39 JCR addiction journals
Data

• Journals
  – Publisher
  – 2017 JCR impact factor
  – Scimago h-index

• Publication Procedures
  – Online Journal Instructions for Authors
  – CONSORT webpage
  – Center for Open Science webpage for registered reports
Results (34 Journals)

- Mean Scimago h-index: 58.6 (range 12-167)
- Mean JCR impact factor: 2.23 (range 0.68-5.95)
- Correlation between the two metrics: 0.67
- Average number of publication procedures used: 2.62 (range 0-5)
Number of Procedures by Number Journals

(n=34)
## Results: Use of Procedures

<table>
<thead>
<tr>
<th>Publication Procedure</th>
<th>Number of Journals (of 34)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Col Declaration</td>
<td>33</td>
</tr>
<tr>
<td>Recommend Guidelines</td>
<td>11 (range 1-13 guidelines)</td>
</tr>
<tr>
<td>RCT Preregistration</td>
<td>15</td>
</tr>
<tr>
<td>Other Preregistration</td>
<td>4 (3 systematic reviews; 1 hypotheses)</td>
</tr>
<tr>
<td>Data Sharing</td>
<td>25 (0 mandatory)</td>
</tr>
<tr>
<td>Registered Report</td>
<td>1</td>
</tr>
</tbody>
</table>
Discussion: Limitations of Most Used Procedures

- Guidelines (n=11)
  - Reviewers must check for adherence
  - Adherence can be difficult to check

- Registration (n=15 & 4)
  - Application typically limited to RCTs
  - Registration entries can be vague
  - Reviewers must compare papers to entries
Discussion: Limitations of Most Used Procedures

- Col Declarations (n=33)
  - Limited Application to some financialCols

- Data Sharing (n=25)
  - Minimal adherence (especially when voluntary)
  - Can lead to a data-dump
  - Depends on readers having the time & skills to re-analyze data
  - Useless without a pre-specified analysis plan
Discussion: Recommendations

• AOD journals should distinguish papers reporting *a priori* hypothesis testing from all other types of papers.

• Registered reports & pre-registration of specific hypotheses allow this distinction.

• Only *Addiction* and *Drug & Alcohol Dependence* have such procedures.
Discussion: Study Limitations

• Just 1 reviewer – possible human error

• Some publication procedures (e.g., registering RCTs) may not be relevant to all 34 AOD journals

• Journals sometimes reference other guidelines that they may expect authors to consult in manuscript preparation