A Need for Better Data Sharing Policies: A Review of Data Sharing Policies in Biomedical Journals

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**ABSTRACT**

There is wide agreement in the biomedical research community that research data sharing is a primary ingredient in ensuring that science is more transparent and reproducible. Publishers could play an important role in facilitating and enforcing data sharing; however, many journals have not yet implemented data sharing policies and the requirements vary widely across journals. This study set out to analyze the pervasiveness and quality of data sharing policies in the biomedical literature.

**METHODS**

- Manually reviewed instructions to author instructions and editorial policies for 318 biomedical journals
- Scored each policy against a rubric
- Analyzed data for patterns relating to:
  - Publishing volume
  - Journal Impact Factor
  - Publishing model of each journal

**THE RUBRIC**

<table>
<thead>
<tr>
<th>DATA SHARING MARK</th>
<th>JOURNAL ACCESS MODEL</th>
<th>OMMICS DATA SHARING REQUIRED</th>
<th>SHARING METHOD</th>
<th>COPYRIGHT/ LICENSING</th>
<th>REPRODUCIBILITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Required as a condition of publication, barring exceptions</td>
<td>01</td>
<td>Open access</td>
<td>a</td>
<td>Yes</td>
</tr>
<tr>
<td>2</td>
<td>Required but, no explicit statement regarding effect on publication/editorial decisions</td>
<td>02</td>
<td>Subscription</td>
<td>b</td>
<td>No</td>
</tr>
<tr>
<td>3</td>
<td>Explicitly encouraged/addressed, but not required.</td>
<td>03</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Mentioned indirectly</td>
<td>04</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Only omics data sharing addressed</td>
<td>05</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>No mention of data sharing</td>
<td>06</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**RESULTS**

Percentage of journals per each data sharing mark (DSM)

- Only 11.9% of journals analyzed explicitly stated that data sharing was required as a condition of publication. 9.1% of journals required data sharing, but did not state that it would affect publication decisions.
- There was no mention of data sharing in 31.8% of journals

Impact factors were higher for journals with the strongest data sharing policies (DSM 1) compared to journals with no mention of data sharing (DSM 6)

The median 2013 IF for journals with the strongest data sharing policies (DSM 1) was 3.2, whereas, the median 2013 IF for journals with no mention of data sharing was 3.5.

**CONCLUSIONS AND NEXT STEPS**

- Only a minority of biomedical journals require data sharing, and a significant association between higher Impact Factors and journals with a data sharing requirement
- Most data sharing policies did not provide specific guidance on the practices that ensure data is maximally available and reusable
- Future study will investigate if authors are sharing data in papers published in journals with a data sharing requirement


PREPRINT: [https://peerj.com/preprints/2588/](https://peerj.com/preprints/2588/)

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