RESEARCH LETTER

Ghostwriting Policies in High-Impact Biomedical Journals: A Cross-Sectional Study

Although sound authorship of biomedical journal articles relies on personal and professional integrity and accountability, recent controversies concerning ghostwriting and guest authorship have shown that this approach has limitations. Ghostwriting and guest authorship are often linked to academic-industry collaborations. Typically, industry-sponsored professional writers prepare complete articles, which are then presented to senior, often expert, academics who submit the article in their own name (perhaps after some editing) and are often reimbursed.

Although biomedical journals have led the way in drawing up editorial policies, ghostwriting policies have not been analyzed. We aimed to assess the prevalence and content of ghostwriting policies in the most influential biomedical journals.

See Editor’s Note at end of letter

Methods. We performed a cross-sectional study of 399 peer-reviewed, English-language biomedical journals publishing original research, including the 15 top-rated journals (or all journals if fewer than 15) in 27 Journal Citation Reports medical categories rated according to the 2010 Journal Citation Reports impact factor (eTable 1; http://www.jamainternalmed.com). Guidelines or instructions for authors and manuscript submission available on journal websites were reviewed independently by 2 authors (C.H., J.M.P., or P.D.) using a standard form (eAppendix) in December 2011.

We reviewed ghostwriting policies, defined as rules or statements about the definition of, detection of, or procedures for responding to ghostwriting that explicitly used the terms ghostwriting or ghostwriter; medical writer policies; and policies requiring the 3 authorship criteria recommended by the International Committee of Medical Journal Editors (ICMJE). We sought associations between ghostwriting policies and editors’ associations, the US Office of Research Integrity, and professional societies with research misconduct definitions and guidelines (“policy-producing bodies”). The analysis included the 7 major publishers, which publish 257 of the journals (64.4%).

Results. The mean (SD) journal impact factor was 6.51 (9.49). No association was observed between the impact factor and any ghostwriting policy, medical writer policies, or ICMJE authorship criteria (eTable 2). Journal characteristics are given in eTable 3. Ghostwriting was mentioned by 16.8% of journals, and 9.5% provided an explicit definition. Detection and response procedures were described by 4.0% and 5.8% of journals, respectively. The ICMJE criteria were required by 51.6% of journals, and 17.8% had medical writer policies. Of the 2 most-represented publishers, Wiley-Blackwell had higher scores for mention, definition, and response procedures than Elsevier (P < .001 for all). Clinical journals had better scores than journals for all ghostwriting policies (P < .001 for all) (Table). Journals without ghostwriting policies were mainly those concerned with basic science and categories with little commercial interest (results not shown).

All ghostwriting policies were positively associated with ICMJE authorship requirement (P < .001 for all). Journals endorsing policy-producing bodies’ guidelines (59.9%) scored higher in all ghostwriting policies, medical writer policies, and ICMJE criteria compared to nonendorsing journals (P < .001 for all). ghosts are not used to report data or procedures. The association between endorsement of misconduct guidelines and ICMJE authorship criteria approached significance (P = .008). There was no significant relationship between endorsement of misconduct guidelines and ICMJE authorship criteria (P = .90).

Table. Ghostwriting Policies According to Region, Type of Contents, Publisher, Misconduct PPB Guidelines Endorsement, and ICMJE Authorship Criteria

<table>
<thead>
<tr>
<th>Variable</th>
<th>Total, No. (%)</th>
<th>Mention, No. (%) of Total</th>
<th></th>
<th>Definition, No. (%) of Total</th>
<th>Detection, No. (%) of Total</th>
<th></th>
<th>Procedures, No. (%) of Total</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Editorial office site</td>
<td>United States</td>
<td>220 (55.1)</td>
<td>41 (18.6)</td>
<td>.40</td>
<td>25 (11.4)</td>
<td>.36</td>
<td>15 (6.8)</td>
<td>.008</td>
</tr>
<tr>
<td></td>
<td>Europe</td>
<td>132 (33.1)</td>
<td>20 (15.2)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type of contents</td>
<td>Clinical</td>
<td>123 (30.8)</td>
<td>25 (20.3)</td>
<td>&lt; .001</td>
<td>16 (13.0)</td>
<td>&lt; .001</td>
<td>8 (6.5)</td>
<td>&lt; .001</td>
</tr>
<tr>
<td></td>
<td>Basic</td>
<td>162 (40.6)</td>
<td>6 (3.7)</td>
<td>&lt; .001</td>
<td>3 (1.9)</td>
<td>&lt; .001</td>
<td>2 (1.2)</td>
<td>&lt; .001</td>
</tr>
<tr>
<td>Publisher</td>
<td>Elsevier</td>
<td>90 (22.6)</td>
<td>9 (10.0)</td>
<td>&lt; .001</td>
<td>3 (3.3)</td>
<td>&lt; .001</td>
<td>1 (1.1)</td>
<td>.64</td>
</tr>
<tr>
<td></td>
<td>Wiley-Blackwell</td>
<td>59 (14.8)</td>
<td>20 (33.9)</td>
<td>&lt; .001</td>
<td>13 (22.0)</td>
<td>&lt; .001</td>
<td>1 (1.7)</td>
<td></td>
</tr>
<tr>
<td>Endorsement of misconduct</td>
<td>PPB guidelines</td>
<td>Yes</td>
<td>239 (59.9)</td>
<td>65 (27.2)</td>
<td>&lt; .001</td>
<td>37 (15.5)</td>
<td>&lt; .001</td>
<td>16 (6.7)</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>160 (40.1)</td>
<td>2 (1.3)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ICMJE authorship criteria</td>
<td>Yes</td>
<td>206 (51.6)</td>
<td>59 (28.6)</td>
<td>&lt; .001</td>
<td>35 (17.0)</td>
<td>&lt; .001</td>
<td>16 (7.8)</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>193 (48.4)</td>
<td>8 (4.1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Abbreviations: ICMJE, International Committee of Medical Journal Editors; PPB, policy-producing body.
Comment. Only about 10% of journals provided explicit definitions of ghostwriting, less than 6% had detection and response procedures, and only about 17% mentioned ghostwriting or ghostwriters in nonspecific statements such as “ghostwriting constitutes an inappropriate practice.” This might indicate that the problem is not taken seriously or that journals may be influenced by revenue from industrial sources, including advertising and the selling of reprints, possibly for off-label promotion.1,3

Some editors’ and medical writers’ associations have specific, clearly positioned policies on ghostwriting.5,7 Likewise, a Committee on Publication Ethics flowchart advises on how to proceed when ghost, guest, or gift authorship is suspected.8

Some scholars, journals, editors’ associations, and even countries consider medical ghostwriting to be research misconduct, much like plagiarism, fabrication, and falsification; in addition, it is also argued that ghostwriting may incur legal liability.1,3-5,7

We wondered whether the journals most concerned about ghostwriting were also those most concerned about misconduct and found that endorsing misconduct guidelines and definitions of editors’ associations, the Office of Research Integrity, or professional societies was positively associated with implementation of ghostwriting policies.

Ghostwriting is intrinsically linked to inappropriate authorship. We observed a significant association between ICMJE authorship requirement and all ghostwriting policies, suggesting that editors concerned about the former were also concerned about the latter. Furthermore, journals that endorsed misconduct policy—producing bodies scored significantly better with respect to ICMJE criteria than those that did not.

With respect to the 2 most-represented publishers, Wiley-Blackwell achieved better scores than Elsevier, possibly because Wiley-Blackwell has a specific ghostwriting policy9 and explicitly states that ghost or guest authorship will be investigated using the Committee on Publication Ethics guidelines.8

The limitations of this study include the cross-sectional design. Data were obtained only from journal websites, and therefore some policies might have been missed, especially if they did not explicitly mention ghostwriting or ghostwriters.

Our results may shed light on the implementation of ghostwriting policies by biomedical journals. Because transparent authorship criteria are needed to ensure untainted scientific investigation and make the contribution of each author explicit, journals without explicit ghostwriting policies may be facilitating fraudulent research conduct. Editors and publishers should work together to standardize policies on ghostwriting to ensure that public and professional trust in biomedical results remains high.

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EDITOR’S NOTE

Editorial Policies to Ensure Honesty and Transparency

The integrity of the biomedical literature is essential to ensuring that all who seek advances in basic and clinical science have a robust, high-caliber resource from which to draw. It is for this express reason that across the publishing industry, biomedical publishers large and small and editors’ groups (eg, International Committee of Medical Journal Editors, World Association of Medical Editors, and Committee on Publication Ethics) have taken concerted action to confront the rising incidence of intentional manipulation of the scholarly literature through the use of ghostwriters and the failure to accurately report the roles and contributions of authors, sponsors, and others who are assigned credit for involvement in the research effort. Such action has, in large part, focused on the establishment of editorial policies pertaining to authorship criteria and financial disclosures. That