

Conflict of Interest Disclosure Accuracy Among Physician Authors of Cancer Research Journals

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Abstract

Background: Clinical research is becoming increasingly reliant on industry sponsorship, with oncology physicians in particular demonstrating dependence on industrial payments. The introduction of a federally required reporting system, the Centers for Medicare & Medicaid Service's (CMS) Open Payments Program, allows public access to financial exchanges between industry and clinical researchers. In this study, we investigated if a discrepancy between self-reported and CMS-reported conflicts of interest (COI) existed among physician authors of cancer research journals in the United States.

Methods: We explored three cancer research journals published from January 2017 to December 2018: *Journal of Clinical Oncology*, *Cancer Research*, and *Nature Reviews Cancer*. We collected a total of 525 published articles and stratified this data by selecting only MD or DO authors who practice in the U.S. to be further investigated. We inspected the COI statement of each article and then cross referenced the author to the CMS Open Payment Program "General Payments" section and determined the accuracy of COI disclosures. We also characterized the extent of this discrepancy among male and female physician authors with a chi-square analysis.

Results: Sixty-seven authors met our inclusion criteria. Forty-three out of the 67 authors have received general payments; 65.2% of which correctly disclosed COIs while 34.8% authors failed to do so. The percentage of accurate disclosure for *Journal of Clinical Oncology*, *Cancer Research*, and *Natural Reviews Cancer* was 77.8%, 63.6% and 50.0%, respectively. In addition, female physician authors had a lower tendency to properly disclose COIs compared to their male counterparts (41.6% vs 74.2%, $p = 0.0447$).

Conclusion: This study found that one-third of published cancer researchers did not accurately self-report their COIs. Thus, journals may need to reconsider their policies or include a link from CMS to improve transparency and maintain the public's trust in oncology research.

Introduction

Therapeutic discovery is an expensive process, and as clinical research becomes increasingly reliant on industry sponsorship (1), oncology in particular, emerges as a specialty with heavy ties to private sources of research funding, especially when compared to other specialties (2). Physicians in oncology specialties in 2014 were 1.09 to 1.75 times more likely than those in non-oncology specialties to receive industry-related payments that could be considered potential financial conflicts of interest (COIs). However, it should be noted that

the presence of financial COIs is not indicative of biased or dishonest research. Recent publications have demonstrated the lack of significant correlations between the presence of financial COIs and research outcomes (3, 4). Yet, the body of literature is prevalent which raises concern to the contrary (5, 6), and should not be ignored in the characterization of COIs in the current landscape of cancer research.

With the introduction of the Center for Medicare & Medicaid Service's (CMS) Open Payments program in 2013, federally mandated reporting of private industry involvement in research made the subject of COIs in research both more public and more uniform than it was when COI disclosure was dictated by individual journal policy. Disclosure policy has been shown to be in need of significant standardization (7), making any current self-disclosure information obtained solely through articles themselves both inconsistent and incomplete. Open Payments, on the other hand, offers a free-access, centralized database of payment information, sortable for type, source, and nature of payment. The service is undoubtedly an invaluable tool in maintaining researcher accountability but suffers from serious issues of its own (8), making the need for an accurate self-disclosure protocol even more important to ensure neither source of information prevails with incomplete or inaccurate data. In addition to the benefit of having two comparable sources of disclosure information to maintain the accuracy of both, self-disclosed financial relationships in literature are still arguably the more accessible COI information available to readers, who may or may not choose, or know how to, look beyond the scope of the article to find potential COIs.

In this study, we investigated whether discrepancies between self-reported and industry-reported conflicts of interest (COI) existed among physician authors (MD or DO) of cancer research journals. We also sought to characterize the extent of this discrepancy between male and female physician authors in order to better understand the current landscape of available disclosure transparency.

Methods

Original research articles published in *The Journal of Clinical Oncology*, *Cancer Research*, and *Nature Reviews Cancer* from January 1, 2017, to December 31, 2018, were identified ($n = 525$). These general oncology journals were selected based on having high impact factors (33.0, 9.1, and 53.0 respectively) and having an appreciable portion of their authors being practicing physicians in the United States (U.S.). The last author for each article was evaluated and only articles with authors who are U.S.-based physicians (MD or DO) were selected for investigation. All articles written by authors who are non-

U.S.-based physicians or who did not have a record in Open Payments were excluded. A total of 67 eligible authors were identified. Data collection for the 67 authors included sex, degree (MD or DO), and general payment information in CMS Open Payments. General payments include fees related to consulting, travel and lodging, food and beverage, services other than consulting, education, honoraria, royalties or licenses, speaking at an accredited/certified education program, and speaking at an unaccredited/non-certified education program. Payments classified as research payment, associated research funding, or ownership and investment were excluded. Self-reported financial disclosures included in the COI portion of the research articles were compared to data reported to the CMS Open Payment Program to determine the accuracy of COI disclosures among authors. A match between the two criteria was documented as proper COI disclosure whereas a mismatch between the two criteria was documented as failure to properly disclose COI. Discrepancies among male and female authors was investigated using chi-square analysis.

Results

Based on the exclusion criteria, 67 last authors were eligible for the study. Among them, 43 authors (64.2%) received general payment according to CMS Open Payments. Together, these authors received \$566,937.61. Of the 43 authors, 28 (65.2%) correctly disclosed the COI in the COI statement of their published articles, whereas 15 authors (34.8%) failed to disclose (Figure 1). In addition, we also examined the percentage of authors who correctly disclose the COI among *Journal of Clinical Oncology*, *Cancer Research*, and *Nature Reviews Cancer*. We found that the COI disclosure rate for the three journals respectively were 77.8%, 63.6% and 50.0%. The difference among the three journals was statistically non-significant (Figure 2).

Finally, we also investigated if there was a gender disparity in terms of accurately disclosing COI. Among the 43 eligible authors that received COI, 12 (27.9%) were female and 31 (62.1%) were male. 41.6% of the female authors versus 74.2% of the male authors correctly disclosed their COI ($p < 0.05$, Figure 3).

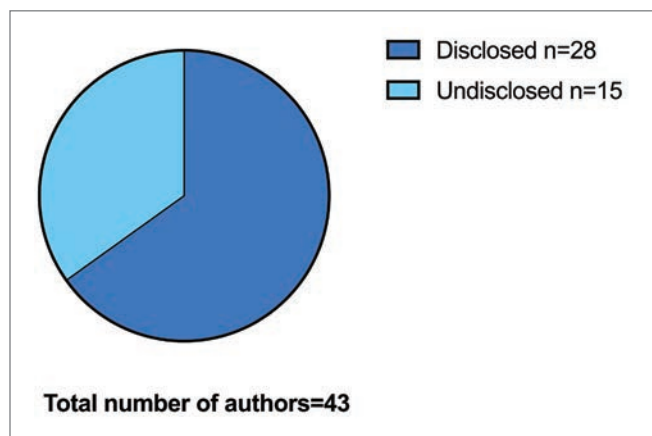


Figure 1. COI disclosure rate of last author. Among the 3 cancer research journals, 67 authors were eligible for the study as per our criteria, where 43 authors (64.2%) received a general payment from CMS Open Payments. Although 65.2% of these authors disclosed this information, 34.8% failed to do so.

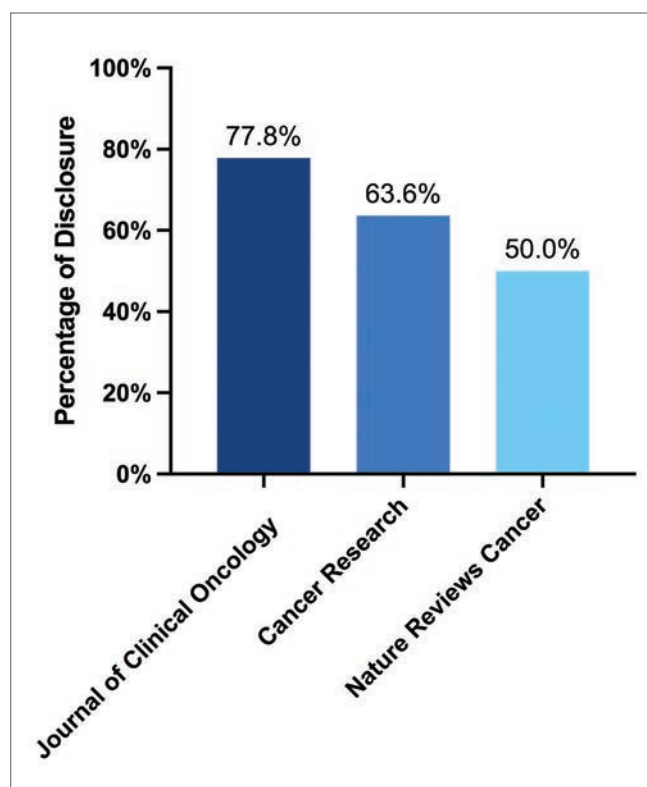


Figure 2. COI disclosure rate of journals. In the 3 journals explored in this study: *Journal of Clinical Oncology* (JCO), *Cancer Research* (CR), *Nature Reviews Cancer* (NRC), with rates of disclosure of 77.8%, 63.6%, and 50.0% respectively (JCO vs. CR, $P=.4084$; JCO vs. NRC, $P=.1008$; CR vs. NRC, $P=.4954$).

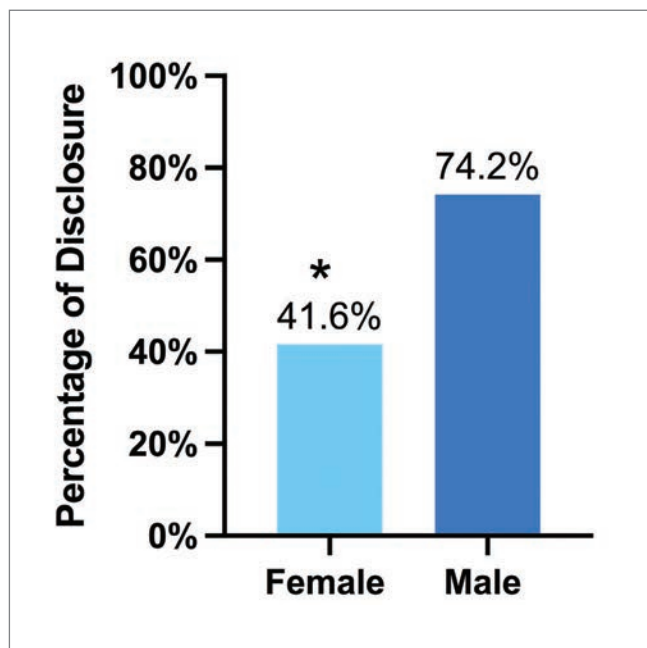


Figure 3. COI disclosure rate between genders. 41.6% females and 74.2% males who had received payments were found to disclose COI correctly. The * indicates a statistically significant difference between male and female authors in disclosing COI via Chi-square analysis.

Discussion

We found that more than a third of the authors failed to disclose COI information accurately. We did not find any significant differences in COI disclosure rates between the *Journal of Clinical Oncology*, *Cancer Research* and *Nature Reviews Cancer*, but did find that female physicians were less likely to accurately disclose potential financial COIs than their male counterparts. While it is not exactly clear why a disparity was observed between self-reported vs CMS-reported COI disclosures, variable journal disclosure policy (7) and non-standardized COI definitions (8) may certainly lend to the difficulties experienced by both author and journal in determining what financial relationships and payment types are relevant for self-disclosure. Furthermore, general payments not directly related to the studies in question may never be explicitly stated.

Universal disclosure policy and the establishment of standardized COI language offers a solution to these, and other issues plaguing disclosure policy currently. It would alleviate the difficulties of deciding which financial information is relevant for physician authors, increase the accuracy and wealth of accessible reader information, and improve the security of all COI information available by providing a practical way to compare information between self- and industry-disclosed information for accuracy and completeness.

Conclusion

We believe complete disclosure has the potential to improve the credibility of all works by authors with financial ties to industry, allowing readers to make more informed opinions about the information being shared in scientific literature. Further research with a larger sample of authors or journals is recommended to explore disparities in disclosure and outcomes of research to better understand how, if at all, the lack of self-disclosure in the real presence of potential financial COIs impacts the results of research. Additionally, to begin formulating universal policy and standard COI terminology, research aiming to characterize the profundity of variation within current disclosure policy and COI language may be of great benefit to the process as well.

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