

Quantifying the Variability of Financial Disclosure Information Reported by Authors Presenting Research at Multiple Sports Medicine Conferences

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ABSTRACT

In the study reported here, we compared self-reported industry relationships of authors who attended 3 major orthopedic sports medicine conferences during a single calendar year. Our goal was to calculate the variability between disclosure information over time.

A significant percentage of authors who attended these meetings were inconsistent in submitting their disclosure information. In addition, most authors with irregularities had more than 1 discrepancy. We believe that the vast majority of the observed discrepancies did not result from intentional deception on the part of the authors but instead

from ongoing confusion regarding which industry relationships should be acknowledged for particular meetings (some specialty societies require that all relationships be divulged, whereas others require only those affiliations directly applicable to research being presented).

In the absence of a uniform disclosure policy that is widely adopted by many specialty societies, these findings suggest that the disclosure process will continue to be plagued by inconsistent reporting of financial conflicts of interest.

Industry support of scientific endeavors has taken on increased significance as research grants from traditional funding sources, such as the National Institutes of Health,

may also serve as consultants or take on advisory board positions; in return for their expert advice and their guidance in developing products for commercial use, these physicians are entitled to compensation that may consist of monetary payments, royalties, or stock options.

Although physician–industry affiliations may give rise to novel medications and devices that are beneficial to patients, there are concerns that these ties may unduly influence clinicians’ judgment. As the commercial entities presumably have a vested interest in the findings of these investigations, their involvement has the potential to compromise the integrity of research at many different levels, including project design¹

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have become more limited. These collaborations may foster advancements in the field of medicine by allowing physicians to conduct investigations they otherwise may not be able to perform. In addition to receiving financial assistance to complete these studies, physicians

and results reporting.^{2,3} The term conflict of interest (COI) refers to any type of relationship between physician and industry that may engender bias, either deliberate or unintentional. Not surprisingly, the ramifications of financial COI on scientific studies have been scruti-

Number of authors at annual 2009 sports medicine meetings

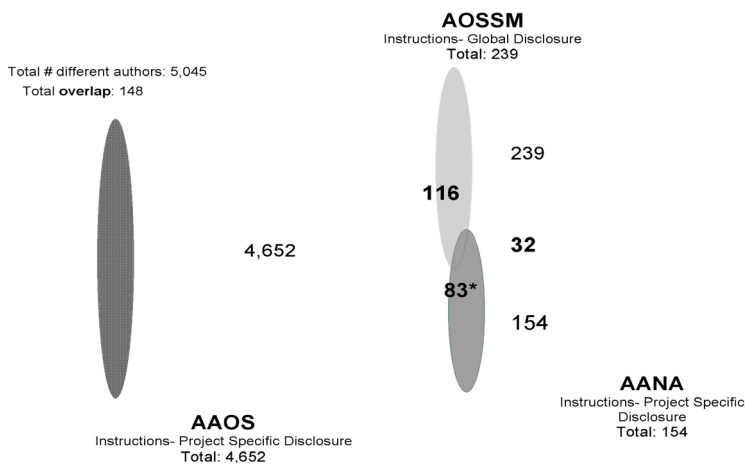


Figure 1. Venn diagram delineating general disclosure policy of American Academy of Orthopaedic Surgeons (AAOS) and Arthroscopy Association of North America (AANA) and classifying authors who attended AAOS and AANA conferences. *Direct comparisons could not be made between these conferences because both used project-specific disclosure guidelines.

nized more closely by the medical community as well as the popular media.⁴⁻⁷

Although COI may be unavoidable in certain circumstances, 1 well-accepted strategy for limiting the negative effects of these interactions is to engender the full transparency of authors by requiring them to reveal their industry associations.⁸ The goal of disclosure is not to abolish all industry participation in this process but to inform the audience of possible biases that may need to be taken into account when considering the results of a particular study.^{9,10}

In general, specialty societies and medical journal publishers use 2 types of disclosure guidelines.¹¹ As part of a global disclosure policy, authors are obligated to divulge all financial relationships, whether related to a particular topic or not.¹² Alternatively, as part of a project-specific disclosure policy, clinician-scientists may be expected to list only those industry affiliations that apply directly to research being presented.¹³ Both approaches are intended to create transparency. However, these disparate systems may leave authors confused as to

what constitutes a COI and which industry ties should be acknowledged. Although the issue of author disclosures has gained significant notoriety in recent years, there is still a paucity of research on the efficacy of these policies and on the accuracy of information provided by physicians.

In the study reported here, we compared self-reported industry relationships of authors who attended 3 major orthopedic sports medicine conferences during a single calendar year. Our goal was to calculate the variability between disclosure information over time.

MATERIALS AND METHODS

We retrospectively reviewed the self-reported disclosures of authors who presented research papers at 3 major orthopedic conferences focusing on sports medicine topics. The conferences were the 2009 annual meetings of the American Academy of Orthopaedic Surgeons (AAOS), the Arthroscopy Association of North America (AANA), and the American Orthopaedic Society for Sports Medicine (AOSSM). The papers were printed in the final programs distributed by these societies.

Authors were asked to provide their information when they submitted their abstracts, which were due in June (AAOS), August (AOSSM), and September (AANA) of 2008. Although physicians may have gained or lost industry affiliations during the short period between these deadlines, we assumed that such changes would be relatively rare.

The disclosure policies for these conferences were obtained from the Web sites of AAOS, AOSSM, and AANA and were corroborated with the guidelines published in the corresponding final programs. These protocols were also orally confirmed by the administrative staff of each society. At that time, AAOS and AANA requested only industry ties directly relevant to the study of interest, whereas AOSSM solicited disclosure of all financial relationships, even those not pertinent to the presentation.

It would be anticipated that all the project-specific associations listed by an author who attended the AAOS or AANA conference should also be evident as a subset of the global disclosures captured by AOSSM. If all the financial COIs declared at AAOS or AANA were also registered at AOSSM, the author was noted to have “no discrepancies”; conversely, any industry relationship reported to AAOS or AANA but not to AOSSM was classified as a discrepancy. However, an author without disclosures at AAOS or AANA but with financial ties at AOSSM was not considered to have a discrepancy because in these instances, the author may not have had any project-specific COI to convey to AAOS or AANA, but may have received support for other research which would have had to be acknowledged under the global disclosure policy of AOSSM. Thus, 2 cohorts were included in analysis—authors who attended the AAOS and AOSSM conferences and authors with studies accepted by AANA and AOSSM. Given that AAOS and AANA both

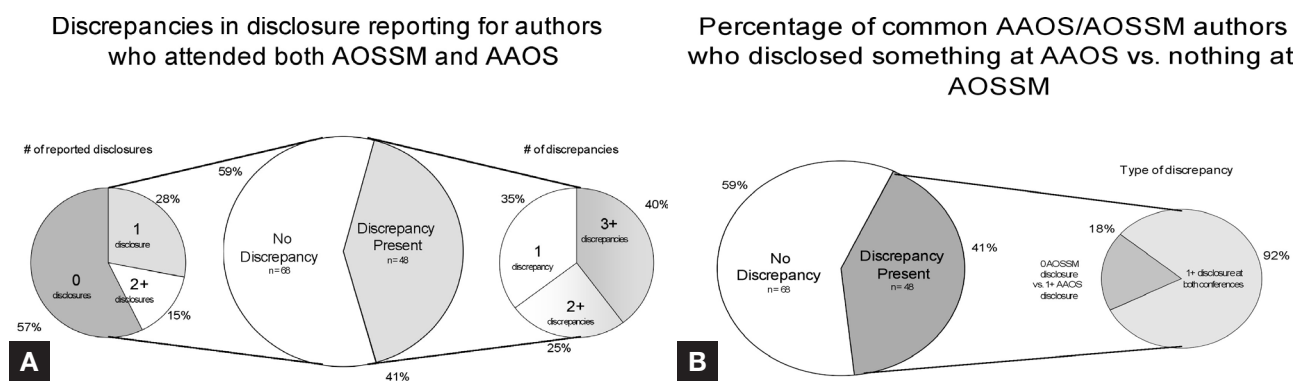


Figure 2. (A) Proportion of American Academy of Orthopaedic Surgeons (AAOS) and American Orthopaedic Society for Sports Medicine (AOSSM) conference author-attendees with discrepancies between project-specific disclosures to AAOS and global disclosures to AOSSM, including number of discrepancies by authors with inconsistencies and number of industry relationships reported by authors without discrepancies. (B) Proportion of AAOS and AOSSM conference author-attendees who had documented discrepancies and did not acknowledge industry relationships to AOSSM but listed at least 1 conflict of interest with AAOS.

required only project-specific COI disclosures, we did not compare the information released by these 2 societies, as there was no reliable method for verifying that authors were presenting the same research at the 2 conventions.

For each pair of meetings (AAOS–AOSSM, AANA–AOSSM), we identified authors with consistent disclosures and authors with irregularities. In addition to recording number of financial COIs divulged by authors who were consistent, we calculated number of discrepancies by authors whose disclosure status changed. In particular, we focused on authors who reported to AOSSM (with its global policy) no industry relationships but reported to either AAOS

or AOSSM (with their project-specific policies) 1 or more commercial entities.

RESULTS

Disclosure information was available for 5045 authors: 4652 AAOS, 154 AANA, and 239 AOSSM (Figure 1). One hundred sixteen authors who presented at AAOS and 32 authors who presented at AANA (both societies listed project-specific industry affiliations) also had research accepted by AOSSM (global disclosure policy). Thus, these comparisons gave rise to 2 discrete datasets, AOSSM–AAOS and AOSSM–AANA. Mean (SD) number and median number of COIs reported by these 148 authors (116 AAOS

+ 32 AANA) were 2.1 (2.76) and 1, respectively.

The industry relationships of 116 authors were published for both AOSSM and AAOS. Forty-one percent of this cohort was found to have disclosure variations; of the authors with variations, 40% had 3 or more discrepancies, 25% had 2 discrepancies, and 35% had 1 discrepancy (Figure 2A). Moreover, 18% of the authors with irregularities responded “nothing to disclose” to the global protocol of AOSSM while acknowledging at least 1 project-specific financial COI to AAOS (Figure 2B).

The other 59% of the AOSSM–AAOS cohort was consistent in its reporting. Most (57%) of these authors had no industry ties, 28%

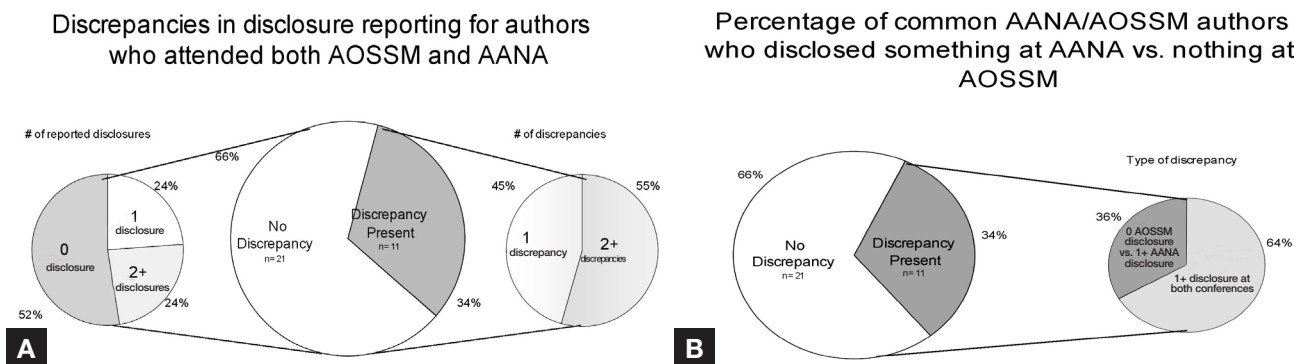


Figure 3. (A) Proportion of Arthroscopy Association of North America (AANA) and American Orthopaedic Society for Sports Medicine (AOSSM) conference author-attendees with discrepancies between project-specific disclosures to AANA and global disclosures to AOSSM, including number of discrepancies by authors with inconsistencies and number of industry relationships reported by authors without discrepancies. (B) Proportion of AANA and AOSSM conference author-attendees who had documented discrepancies and did not acknowledge industry relationships to AOSSM but listed at least 1 conflict of interest with AANA.

reported 1 commercial entity, and 15% identified 2 or more (Figure 2A).

The industry relationships of 32 authors were published for both AOSSM and AANA. Thirty-four percent of this cohort was found to have disclosure variations; of the authors with variations, 55% had 2 or more discrepancies, and 45% had 1 discrepancy (Figure 3A). Comparison with the AOSSM-AAOS cohort showed that an even larger proportion (36%) of variations involved authors who indicated “nothing to disclose” to AOSSM (which requested all industry associations be divulged) but reported at least 1 financial relationship to AANA (Figure 3B).

The other 66% of the AOSSM-AANA cohort was consistent in its reporting. Most (52%) of these authors had no COI, 24% listed 1 source of industry support, and 24% reported 2 or more COIs (Figure 3A).

DISCUSSION

The increasing prevalence of physician–industry collaborations and their potential deleterious effects on scientific endeavors has led many specialty societies and medical journal publishers to adopt formal disclosure policies to promote transparency and preserve the integrity of investigations. Despite the widespread integration of such guidelines, there is still a paucity of research on the efficacy of these policies and on the accuracy and consistency of information provided by physicians in the field of sports medicine. Our goal in this study was to identify and characterize discrepancies in self-reported disclosures of authors who presented at more than 1 orthopedic sports medicine conference during a single calendar year.

As part of this analysis, we examined the project-specific industry relationship disclosures that were required by AAOS and AANA as subsets of the global disclosures stipulated by AOSSM. However,

we did not compare the so-called relevant financial relationships solicited by AAOS and AANA because of difficulties associated with verifying that an author presented the same research at both conferences.

The results of this review demonstrate that a significant percentage of authors who attended these meetings—41% of the AOSSM-AAOS cohort and 34% of the AOSSM-AANA cohort—were inconsistent in submitting their disclosure information. In addition, most authors with irregularities—65% of the AOSSM-AAOS cohort and 55% of the AOSSM-AANA cohort—had more than 1 discrepancy. Although authors may have gained or lost industry affiliations during the short period between conference deadlines (June, August, and September 2008 for AAOS, AOSSM, and AANA, respectively), we believe it is unlikely that so many authors would make such dramatic changes in number and type of industry affiliations over the course of only a few months.

In addition, a substantial proportion of authors with incongruent data responded “nothing to disclose” to AOSSM, which had a global disclosure policy, but reported at least 1 commercial entity to AAOS (18%) or AANA (36%), both of which at that time requested acknowledgment only of financial ties germane to the investigation of interest. One plausible explanation for this finding is that authors may have failed to differentiate these societies’ guidelines and incorrectly assumed they needed to list only industry affiliations directly pertinent to their work. Another possibility is that they may have unintentionally neglected to list industry relationships that should have been reported. Nevertheless, these disparities underscore the inherent deficiencies in systems for generating disclosure data.

Not surprisingly, more than half of the authors without any

discrepancies in their disclosure records—57% of the AOSSM-AAOS cohort and 52% of the AOSSM-AANA cohort—did not list any industry affiliations. Authors with no financial ties are presumably less likely to provide incorrect information, as they can declare “nothing to disclose” for each meeting, regardless of its policy.

This study had a few limitations. As mentioned, the conferences had different deadlines for disclosing industry relationships. However, these deadlines fell within a period of only a few months, so we are confident the disclosure status of these authors could not have changed very much. We also recognize that the 116 authors in our AOSSM-AAOS cohort and the 32 authors in our AOSSM-AANA cohort represent only a small fraction of all the presenters at these conferences. However, both sets of analyses gave rise to similar results, which collectively support our conclusions.

Our review results highlight the considerable variability in the self-reported disclosure information listed for 3 recent orthopedic conferences focusing on sports medicine research. We believe that the vast majority of the observed discrepancies did not result from intentional deception on the part of the authors but instead from ongoing confusion regarding which industry relationships should be acknowledged for particular meetings. In the absence of a uniform disclosure policy that is widely adopted by many specialty societies, these findings suggest that the disclosure process will continue to be plagued by inconsistent reporting of financial COIs. Additional comparative studies should be performed to determine which system for identifying sources of industry support (global vs project-specific) is most effective in creating full transparency and minimizing the influence of these commercial entities on scientific research.

AUTHORS' DISCLOSURE STATEMENT

The authors report no actual or potential conflict of interest in relation to this article.

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