Reporting Bias in Industry-Supported Medication Trials Presented at the American Psychiatric Association Meeting

To the Editors:

Although most evidence suggests that inexpensive, off-patent antidepressant and antipsychotic medications are of comparable effectiveness to more expensive patented medications, the off-patent antidepressant and antipsychotic drugs are prescribed at a lower rate than the patented medications.[1–5] One possible explanation for this disconnect could be a bias in the subset of the overall evidence that is made available to the prescribing clinicians.[4] In 2008, Turner et al[6] reported on publication bias in the results of pharmaceutical industry–supported antidepressant trials. They found that although only 51% of the trials that registered with the Food and Drug Administration were positive, among the subset of studies that were published, 94% were reported as positive. Here, we sought to assess whether a similar reporting bias may be present among research presented at the largest annual psychiatry meeting in the United States, the American Psychiatric Association (APA) annual meeting.

Two raters (S.S. and M.P.) identified all comparison medication studies presented as new research at the 2009 and 2010 APA meetings. Each abstract was independently rated as positive, negative, or mixed to the medication in question, using a modified version of a validated rating system (Table 1).[7] Raters were blind to industry sponsorship at the time of assessment. There were 2 disagreements between the raters that were resolved with discussion. An independent sample t test was used to assess whether there was a significant rating score difference between the set of industry-supported and the set of non–industry-supported studies.

In total, 278 medication trial abstracts were identified (195 industry supported, 83 non–industry supported). Of the industry-supported studies, 97.4% reported results positive toward medication in question, 2.6% reported mixed results, and none reported negative results. In contrast, 68.7% of the non–industry-supported studies reported results positive with regard to the medication studied, whereas 24.1% reported mixed results and 7.2% reported negative results. Overall, industry-supported abstracts were significantly more positive than non–industry-supported abstracts ($T = 7.55$; $P < 0.0001$). Our finding that 97% of industry-supported studies reported positive results is remarkably similar to the finding of Turner et al; it suggests that there is bias in the results reported at the APA meeting. Unlike the antidepressant trial study, we do not know how many relevant comparable industry-supported trials were performed but not reported at the APA meeting. As a result, one possible explanation for our results is that the medications being reported on are highly effective and safe and that there are few unreported negative studies. However, this hypothesis is not supported by our observation that the non–industry-supported studies reported a far lower rate of positive results. A more likely explanation for our findings is that the positive reporting bias among industry-supported studies previously identified in the literature is also present at the APA meeting. The likely selective reporting present does not imply an intent to deceive or mislead; investigators and industry may simply feel that positive results would be of most interest to meeting attendees.

It is important to note that the APA meeting is a primary source of continuing medical education for many of the 15,000 clinicians in attendance and a formative meeting for a substantial number of psychiatrists-in-training. For these attendees, the selective reporting of medication studies could create an impression that the newer, more expensive psychiatric medications are more effective and safer than justified by an unbiased assessment of the evidence.

TABLE 1. Scale Used to Rate Abstract Conclusions

Positive (1)	The "experimental" medication was superior to the studied alternative for at least 1 outcome measure (efficacy, adverse effect, profile, or cost) and not inferior to the studied alternative on any outcome measure.
Mixed (2)	Either the "experimental" medication was no different from the studied alternative or the "experimental" medication was superior to the studied alternative for 1 or more outcome measures but inferior for other outcome measures.
Negative (3)	The "experimental" medication under study was inferior to studied alternative for 1 or more outcome measures and not superior to the studied alternative on any outcome measure.

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AUTHOR DISCLOSURE INFORMATION

For the 2009 APA annual meeting, S.S. served as a trainee member of an APA committee involved in soliciting the scientific reports to be presented at the meeting.

The authors declare no conflicts of interest.

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REFERENCES

1. Lieberman JA, Stroup TS, McEvoy JP, et al. Effectiveness of antipsychotic drugs in patients with chronic schizophrenia. *N Engl J Med*. 2005;353(12):1209–1223.
2. Rush AJ, Trivedi MH, Wisniewski SR, et al. Bupropion-SR, sertraline, or venlafaxine-XR after failure of SSRIs for depression. *N Engl J Med*. 2006;354(12):1231–1242.
3. Chen Y, Kelton CM, Jing Y, et al. Utilization, price, and spending trends for antidepressants in the US Medicaid Program. *Res Social Adm Pharm*. 2008;4(3):244–257.
4. Sernyak MJ, Rosenheck RA. Generic fluoxetine and choice of antidepressant medication. *Psychiatr Serv*. 2007; 58(1):128–130.
5. Insel TR. Psychiatrists' relationships with pharmaceutical companies: part of the problem or part of the solution? *JAMA*. 2010;303(12):1192–1193.
6. Turner EH, Matthews AM, Linardatos E, et al. Selective publication of antidepressant trials and its influence on apparent efficacy. *N Engl J Med*. 2008;358(3):252–260.
7. Als-Nielsen B, Chen W, Gluud C, et al. Association of funding and conclusions in randomized drug trials: a reflection of treatment effect or adverse events? *JAMA*. 2003;290(7):921–928.