doi:10.1111/pcn.12201

Psychiatry and Clinical Neurosciences

PCN Frontier Review

Conflicts of interest in psychiatry: Strategies to cultivate literacy in daily practice

Rumiko Shimazawa, PhD[1] and Masayuki Ikeda, MD[2]*

[1]*Graduate School of Medicine, Osaka University, Osaka and* [2]*Department of Medical Informatics, Kagawa University Hospital, Kagawa, Japan*

The relationship between psychiatry and pharmaceutical companies has come under scrutiny during the past decade. Concerns are growing that financial ties of psychiatrists to the pharmaceutical industry may unduly influence professional judgments involving the primary interests of patients. Such conflicts of interest threaten the public trust in psychiatry. The goal of conflict of interest policies is to protect the integrity of professional judgment and to preserve public trust. The disclosure of individual and institutional financial relationships is a critical but limited first step in the process of identifying and responding to conflicts of interest. Conflict of interest policies and procedures can be strengthened by engaged psychiatrists, researchers, institutions, and professional associations in developing policies and consensus standards. Research on conflicts of interest can provide a stronger evidence base for policy design and implementation. Society has traditionally granted the medical profession considerable autonomy and may be willing to continue do so in the case of conflicts of interest. Nevertheless, concern is growing that stronger measures are needed. To avoid undue regulatory burdens, psychiatrists can play a vital role in designing responsible and reasonable conflict of interest policies that reduce the risks of bias and the loss of trust. Psychiatrists and the institutions that carry out research, education, clinical care, and practice guideline development must recognize public concerns about conflicts of interest and take effective measures soon to maintain public trust with a cultural change in the practice of psychiatry, from reactive treatment-seeking for mental illness to proactive advocacy for patients.

Key words: conflict of interest, drug industry, mass media, professional ethics, psychiatry.

THERE IS NO escape for any physician from conflicts of interest because drug prescriptions not only benefit the patient but also benefit the drug companies from a financial perspective. When a set of circumstances creates a risk that a clinician's professional judgment is unduly affected by their secondary interests, there exists a conflict of interest.[1,2] The primary interests include the welfare of patients, promoting and protecting the integrity of research, and the quality of education.[1,3,4] Such conflicts of interest threaten the integrity of scientific investigations, the objectivity of medical education, and the quality of patient care. They may also jeopardize public trust in medicine. Although the word 'Conflict of Interest' was introduced to Medical Subject Headings (MeSH) in 1991, the issue itself has been common and of great concern for decades. The thousands of birth deformities and deaths caused by thalidomide

*Correspondence: Masayuki Ikeda, MD, Department of Medical Informatics, Kagawa University Hospital, Miki-cho Ikenobe, Kagawa 761-0793, Japan. Email: massie.ikeda@gmail.com
Accepted 30 April 2014.

around 1960[5] focused professional and public concerns on how the commercial interests of pharmaceutical companies conflict with the interests of patients.

Patients need to feel that professional clinical judgments are not compromised by financial ties to pharmaceutical companies. Ties with industry have produced important benefits, particularly through research collaborations that improve individual and public health. At the same time, widespread relationships with industry have created significant risks that individual and institutional financial interests may unduly influence professional judgments about the primary interests of patients.

The need to identify interests, declare and control the effects of their conflicts lies in their potential to affect judgment or motivation. Valuable as this analysis is, its definition of an 'interest' as something that may undermine a person's judgment is likely to vary widely from person to person, rendering a definition dependent on the strength of mind or will of the conflicted person. Furthermore, there are many factors that are likely to undermine or affect judgment that are not usually regarded as conflicts of interest.[6]

Public attention has focused exclusively on financial gain as the secondary interest, because it is relatively more objective, fungible and quantifiable than other secondary interests. However, non-financial interests,[1,3,4] such as the desire for professional advancement and the motivation to favor family, are less effectively and justly regulated, and may even be more corrupting than financial gain.[1] Because the non-financial interests are so common, no health professional is free from potential conflicts of interest.

PSYCHIATRY PERSPECTIVE

The issue of conflicts of interest in psychiatry is even more important than in other medical fields. Psychiatric disorders challenge the primary interest, the welfare of the patients, both in the diagnosis and treatment.[3,4,7] Psychiatrists must exercise judgment in complex situations that are fraught with uncertainty. First, in most psychiatric disorders, there is no valid biomarker to establish diagnosis.[8] Second, psychotropic treatment often produces only modest effectiveness with significant side-effects.[9,10] Third, if a patient's cognitive impairment is severe, he or she may not be able to communicate to give informed consent for any medical intervention or research.[11–13] These factors traditionally result in conflicts of interest in psychiatry.

The pharmaceutical industry is the most profitable and politically influential industry in the USA.[14] Financial conflict of interest is more prevalent in psychiatry than in other specialties of medicine.[15–20] Industry sponsorship and author conflict of interest are prevalent and do appear to affect study outcomes.[17] They are the most prominent specialists who receive money from pharmaceutical companies.[16,18]

Of the conflicts of interest that have occurred in psychiatry, financial ones have attracted the most attention in the past few decades.[15,19] However, in the 1970s or before, when the global pharmaceutical market was not as powerful as the present in providing financial benefits to psychiatrists, non-financial conflicts of interest,[3,4] such as academic promotion and political commitment, were dominant and recognized as ethical issues in psychiatry.[21,22]

Although various safeguards have been put in place during the past 60 years to protect study participants, especially those from vulnerable populations, such as the mentally ill, marketing designed on the basis of neuroscience research has raised professional concerns. On 25 July 1989, US President George H. W. Bush signed a presidential declaration designating the 1990s to be the 'Decade of the Brain', proclaiming 'A new era of discovery is dawning in brain research.' After 10 years, with many neuroscience research opportunities either not addressed or postponed,[23] US President Bill Clinton and the British Prime Minister Tony Blair announced jointly that a rough draft of the human genome was finished. During the ensuing decades, many companies sponsored psychiatric research into marketing topics,[24] whereas it has become clear that the genetics of most diseases are more complex than anticipated and that it will take many more years before new treatments may be developed.[25]

CONFLICTS OF INTEREST IN CLINICAL RESEARCH

Conflicts of interest arise in the biomedical research context. An important issue in clinical research is the duty clinicians have to treat or prevent the progression of disease during a study that they are conducting. Although all clinical researchers have a duty to care for the patients who participate in clinical research, the intervention may skew results and

have a negative impact on the scientific validity of a study.[26,27]

Conflicts frequently occur between the roles of clinicians and scientists. The obligations of a researcher to answer a question, to clarify mechanisms or to understand a process may interfere with the researcher's engagement with the interest of a sponsor in achieving financial gain, or the interest of the researcher in his/her personal success.[15,18–20] In clinical trials, even if they are randomized, industry-funded research produces findings that are more favorable to industry than research funded by other sources.[28]

Conflicts of interest in psychiatric clinical trials

In terms of clinical trials, mentally ill patients are more vulnerable than those physically ill.[29] Clinical research with patients who are specifically vulnerable because of their incapacity to give consent are ethically acceptable if there are no other ways to resolve important clinical questions.[30,31]

Conflicts of interest appear to be prevalent among psychiatric clinical trials and are associated with a greater likelihood of reporting a drug to be superior to placebo. Among 397 psychiatric clinical trials identified, 239 (60%) reported receiving funding from a pharmaceutical company or another interested party, and 187 studies (47%) included at least one author with a reported financial conflict of interest.[17] Among the 162 randomized, double-blind, placebo-controlled studies examined, those that reported conflict of interest were 4.9 times more likely to report positive results; this association was significant only among the subset of pharmaceutical industry-funded studies.

Research funded by industry was more likely to report conclusions that favored the sponsor's drug, even if the results did not support such conclusions. For example, studies that have examined clinical trials involving specific clinical specialties or particular clinical problems have found an association between industry sponsorship and results that favor industry. Examples include clinical trials of new antipsychotic drugs.[17,32]

New medications have significantly improved outcomes for people with psychiatric diseases. Research collaboration and the expansion of financial relationships have brought both benefits, as well as conflicts of interest and evidence of bias. For example, in clinical research, unfavorable results in some major industry-sponsored trials have been withheld from publication, thus distorting the totality of the findings included in the scientific literature. Comparisons of data submitted to regulatory agencies with those on the same trials published in the medical literature have found changes in the ways that the published results appeared to be more favorable than the results reviewed by regulatory agencies.[33–35] In this regard, efficacy of antidepressants has long been debated.[36]

A meta-analysis on all clinical trials submitted to the Food and Drug Administration (FDA) prior to approval of four antidepressants (fluoxetine, venlafaxine, nefazodone, and paroxetine)[33] found that drug–placebo differences in antidepressant efficacy increase as a function of baseline severity, but are relatively small even for severely depressed patients. Another independent meta-analyses of randomized placebo-controlled trials based upon data from the FDA clinical trial database[37] also found that the greater the baseline symptom severity, the greater the magnitude of the difference favoring antidepressants over placebo. Combining data from six large-scale, placebo-controlled trials that comprised patients with a broad range of baseline symptom severity, Fournier and colleagues[38] showed that the magnitude of benefit of antidepressants compared with placebo increases with severity of depression symptoms. The benefit may be minimal or nonexistent, on average in patients with mild or moderate symptoms, whereas for patients with severe depression, the benefit of medications over placebo is substantial.

Not publishing negative results undermines evidence-based medicine and puts millions of patients at risk for using ineffective or unsafe drugs. One striking case involves the withholding of negative findings from clinical trials of the effects of selective serotonin reuptake inhibitors (SSRI) on depression. An investigation on reviews from the FDA for studies of 12 antidepressant agents[34] showed that how the studies were published, or not published, was associated with the study outcome. Among 74 FDA-registered studies, 37 studies viewed by the FDA as having positive results were published; one study viewed as positive was not published. The other 36 studies viewed by the FDA as having negative or questionable results were, with three exceptions, either not published (22 studies) or published in a way that conveyed a positive outcome (11 studies). Published clinical trials suggest that SSRI have a favorable benefit–risk profile in children with

depression. When unpublished data were considered, the evidence indicated that the risks appeared to outweigh the benefits for all but one drug in this class.[35]

CONFLICTS OF INTEREST IN EDUCATION

During most of the 20th century, medical product companies were not major participants in medical education. The exception was sales representatives, who provided information to medical residents and faculty as well as to nonacademic physicians. From the 1960s onwards, however, medical product companies became increasingly involved in sponsoring medical education, particularly continuing medical education (CME).[39,40] They routinely pay or otherwise reward expert opinion-makers and fund the production of educational materials for professionals.[41,42]

More than half of the $1.4bn spent on accredited CME in the USA was funded from commercial sources, including drug companies and device manufacturers.[43] Through their support for professional society journals and meetings, pharmaceutical and medical device companies are also important sources of income for professional societies. In connection with congressional inquiries about its relationships with pharmaceutical companies, the American Psychiatric Association (APA) reported in 2008 that medical companies supplied about 28% of its annual income.[44] An informal APA survey of other medical specialty societies indicated that this figure was approximately in the middle range of the income that companies provide to these groups. The numbers ranged from 2% to nearly 50%.[44]

Physician interactions with pharmaceutical representatives typically begin in medical school and continue at a rate of about 4 times per month.[45] Meetings with pharmaceutical representatives were associated with requests by physicians for adding the drugs to the hospital formulary and changes in prescribing practice. Drug company-sponsored CME preferentially highlighted the sponsor's drugs compared with other CME programs.[41,45,46] Attending sponsored CME events and accepting funding for travel or lodging for educational symposia was associated with increased prescription rates of the sponsor's medication.[45]

Little information on the extent of industry funding for undergraduate and graduate medical education is available,[40] although the Association of American Medical Colleges has stated that medical schools have become increasingly dependent on such funding for these major activities.[47] The most extensive information on academic institution ties with industry comes from a survey of department chairs at 125 medical schools and 15 of the largest independent teaching hospitals.[48] The responses indicated that 65% of clinical departments received industry support for continuing medical education, 37% received industry support for residency or fellowship training, 17% received industry support for research equipment, and 19% received unrestricted funds from industry for department operations.

In March 2001, the American Association of Directors of Psychiatry Residency Training appointed a task force on the relationship between the pharmaceutical industry and psychiatry to study the issue of industry relations with psychiatry residency education. The results of a survey of the membership[49] showed that lunches for residents were the most common interaction, reported by 93% of programs, nearly all of which permitted literature and gifts to be distributed. Only 4% required faculty to be present. Retreats (27%) and travel funds (34%) were sponsored less frequently. One third of programs had written policies governing these interactions, but half of the respondents did not know if their parent institutions had such policies. A minority of programs (40%) had formal didactic instruction for residents on this topic. Support for more information, direction, and teaching was widespread. In a 2002 survey of psychiatric residency program directors, 88% reported that they allowed industry to provide lunches for their residents. Among this group, the mean was about five lunches per week.[49]

CONFLICTS OF INTEREST IN CLINICAL PRACTICE

Compelling research studies have provided evidence against the validity of the two assumptions widely accepted among clinicians.[41] The first is that small gifts do not affect clinician behavior. The second is that disclosure of financial conflicts is sufficient to resolve problems.

On the contrary to the first assumption, the impulse to reciprocate for even small gifts is a powerful influence on people's behavior.[50,51] Individuals receiving gifts are often unable to remain objective. They reweigh information and choices in light of the gift.[52] Clinicians who accept gifts from industry are

more likely to prescribe drugs from that particular industry[45] and more likely to request that those drugs be added to their hospital's formulary,[53] even when they do not themselves believe they have been influenced.

The second assumption that disclosure is sufficient to resolve problems created by physicians' conflicts of interest is also unfounded.[41] First, differences in what is considered to be a conflict make the disclosure of conflicts incomplete. Second, those who are not experts in a particular field often find it impossible to identify a biased opinion that they read or hear about the subject.[52] Disclosure policies raise a red flag but are unlikely to solve the problems. Industry funding, disclosed or not, influences a clinician's judgment. Third, disclosure may be used to 'sanitize' problems. The well-reported story of Charles Nemeroff,[19] whose history is shown below, indicates that it is easier to disclose the conflict and then proceed as though it did not exist.

Institutional conflicts of interest in psychiatry

Financial relationships with industry also exist at the institutional level and may create conflicts of interest for academic medical centers, professional societies, and other institutions that carry out medical research, education, clinical care, or guideline development.[41,46] Institutional conflicts of interest arise when an institution's own financial interests, or those of its senior officials, pose risks of undue influence on the institution's primary interests.

Dealing with institutional conflicts of interest may be more difficult than dealing with individual conflicts of interest.[41,46] In the case of individual conflicts in large institutions, opportunities for review usually exist at multiple levels of the institution and involve authorities who are relatively independent and do not stand to gain personally from the secondary interests in question. In contrast, an independent review for institutional conflicts of interest may be difficult[41,46] because the institutional officers themselves may stand to benefit indirectly from the conflict of interest and may be reluctant to question current or proposed relationships with companies.

Although several cases reported by the general press have called attention to institutional conflicts of interest in medicine,[19,44] institutional conflicts of interest have generally received less attention than individual conflicts of interest. Institutional conflicts of interest often involve the financial interests of both the institution and its senior officials.

In December 2008, only 3 months after the APA report, which revealed that medical companies supplied about 28% of its annual income, the chair of the Psychiatry Department at Emory University, Charles Nemeroff, resigned after congressional investigators reported that he had failed to disclose the receipt of substantial consulting payments from pharmaceutical companies, in violation of university and federal government rules.[15,18,20] He had also failed to comply with an agreement with the university that he limit such payments.[18] His multiple ties to pharmaceutical companies had benefited the university by attracting company funding for department career awards, an endowed chair, and other gifts.[15]

Conflicts of interest in psychiatric guideline development

Clinical practice guidelines (CPG), based on expert reviews of the relevant evidence, greatly influence commercial drug compendia. Many health plans use evidence summarized in compendia as a basis for payment and coverage decisions. Because of their influence, CPG should be based on objective data and unprejudiced by stakeholder groups, with any financial association between authors of the guidelines and the pharmaceutical industry made transparent. Nevertheless, studies have found shortcomings in reporting on conflicts of interest by participants and editorial independence in a wide array of clinical practice guidelines.[46,54]

Widespread relationships with drug companies are presented in a study of major CPG in psychiatry.[55,56] Ninety percent of the authors had financial ties to companies that manufacture drugs that were explicitly or implicitly identified in the guidelines as recommended therapies for the respective mental illnesses. None of the financial associations of the authors were disclosed in the CPG.[56]

ROLE OF JOURNALISM IN THE ISSUE OF CONFLICTS OF INTEREST

Mass media continue to play an important role in the lives of patients. Medical news can have a greater influence on public health-related expectations and behavior.[57] Lay people often first learn about medical advances through the mass media.[58] The media influences the use of medical interventions,[59] and shapes

perceptions of diseases.[57] The quality of journalism therefore is an issue of concern for health professionals because journalistic expertise and experience play an important role in communication about health care.[57,60,61]

Pharmaceutical companies fund consumer and community groups that are likely to have an interest in their products and services. They also produce their own media content. Pharmaceutical industries are becoming increasingly sophisticated at influencing the mass media, and dedicate considerable resources to managing media content and agendas by methods called 'spin'; a form of propaganda in public relations. Media consultants and public relations staff have become an established feature of the pharmaceutical landscape. All of these strategies have been reported,[62,63] and their significance is great given the increasing influence of consumerism in health care, the increasing pressure on media outlets because of declining advertising revenue, and the increasing reliance of health and medical research on private sources in the wake of declining government funding for universities.[60,64]

Public relations experts clearly understand the advantages of using academic experts to promote their point of view on television, in newspapers and magazines, and in academic journals. In the 'third party technique,' instead of using a drug company representative as spokesperson, an apparently independent messenger with a higher credibility rating in the eyes of the target audience is used. A lack of proactive disclosure by third party messengers is often reinforced by the failure of doctors, patients, and journalists to demand that potential conflicts of interests be revealed.[64]

Industry influence over medical journalism is exerted more subtly through editorial decisions about content and through other strategies that are often not obvious to readers,[65] whereas other powerful interests actively seek to overtly influence media content and media agenda through advertising, ownership and declarations of editorial support for particular political parties.

The promotion of trastuzumab (Herceptin) in the UK shows how companies raise awareness of new drugs.[62] Marketing was muted at first, as specialists learnt of pilot studies in patients with advanced disease. A paper reporting an early trial in a wide-circulation general medical journal amplified the report. The paper was accompanied by an enthusiastic press release, encouraging medical correspondents to spread the word to the wider public. These strategies mean people become familiar with the company message long before licensing. The case of trastuzumab indicates that optimistic media descriptions were more successful for drug companies than obvious promotional campaigns, as the message was separated from explicit marketing and included a trusted voice, such as a university-based physician.

In addition to lay press, medical journals also have long-standing relationships with the pharmaceutical industry. As early as the late 1940s, the American Medical Association began to market information from its new physician database to pharmaceutical companies and to commission studies of the effectiveness of different marketing techniques. The results were sent to pharmaceutical companies along with pamphlets promoting advertising in the *Journal of the American Medical Association*.[66] In the following years, medical journals depended on the pharmaceutical industry for substantial income,[65] which was often misleading.[67] In the 2000s, medical journals developed into an extension of the marketing arm of pharmaceutical companies.[68]

JAPAN PERSPECTIVE

As the world's highest rates of psychiatric institutionalization,[69] popular images of mental health care and public attitudes toward mental illness have been stigmatized for decades in Japan. Nevertheless, for many more years, Japanese psychiatrists have been diagnosing patients according to global standards, that is, the *International Classification of Diseases* and the *Diagnostic and Statistical Manual of Mental Disorders*. They treat patients with globally developed drugs, using global standard guidelines. Therefore, Japanese psychiatrists must be aware of conflicts of interest, just as psychiatrists in other developed countries are. There are now transitions underway that are reshaping the mental health care landscape and affecting public impressions of mental illness.[70]

In the USA, the relationship with pharmaceutical companies, the most profitable and politically influential industry in the USA,[14] is a big challenge for psychiatrists,[44] whereas in Japan, as the best pharmaceutical market in the world,[71] the prevalence and implications of conflicts of interest in psychiatry seem to have received little attention. A PubMed Search shows that, out of 450 publications found by searching the database with MeSH 'Conflict of Interest' and 'Psychiatry' combined as of 11 December 2013, there

were no papers in English, with only five papers in the Japanese language by Japanese authors.

However, given the extent of industry involvement in drug development and the rapid growth in pharmacotherapies in psychiatry, conflict of interest has come under intense scrutiny in Japan, especially since the finding of alleged data manipulation in postmarketing studies.[72] In contrast to their US counterpart,[44] the Japanese Society of Psychiatry and Neurology, the most time-honored and largest organization of psychiatry in Japan, has taken advantage of their stringent attitude[73] to eliminate the conflicts of interest that still characterize the relationship between psychiatrists and the pharmaceutical industry.

The socio-psychiatric perspective on conflicts of interest identified the need for a cultural change in the practice of psychiatry, from reactive treatment-seeking for mental illness to proactive advocacy for patients. To achieve this cultural change, a widespread program of patient, psychiatrist and healthcare provider education and multi-disciplinary collaboration is essential. Such educational activities should focus on ensuring long-term change rather than short-term fixes alone. Delivering this broad educational agenda would serve to control conflicts of interest. Piloting such educational activities would seem an appropriate position from which Japan can further consolidate its lead role in psychiatry.

CONCLUSION

Awareness of the existence of conflicts of interest and their impact on our field is a first, necessary step. Conflicts of interest may not be perceived as such by those involved. People can believe that they are invulnerable to influences to which they believe others are susceptible. At present, there is an acute and welcome awareness of the impact of financial conflicts of interests arising from psychiatrists' relationships with drug companies. The same cannot be said for non-financial conflicts of interests. Non-financial conflicts of interests are probably both common and significant in psychiatric practice and research, although currently underemphasized. Those who denounce one type of conflict of interest are particularly susceptible to another. Professional medical associations have to bring to their members the best scientific evidence on the efficacy and suitability of drugs. These efforts must be distinguished from, and not affected by, industry promotions. The implementation of policies to protect the integrity of professional judgment and to preserve public trust may forgo some valuable activities. Nevertheless, appropriate changes should be in the best interest of both psychiatrists and patients.

ACKNOWLEDGMENT

The authors do not have any conflicts of interest to declare.

REFERENCES

1. Steinbrook R. Controlling conflict of interest: proposals from the Institute of Medicine. *N. Engl. J. Med.* 2009; **360**: 2160–2163.
2. Thompson DF. Understanding financial conflicts of interest. *N. Engl. J. Med.* 1993; **329**: 573–576.
3. Maj M. Non-financial conflicts of interests in psychiatric research and practice. *Br. J. Psychiatry* 2008; **193**: 91–92.
4. Maj M. Financial and non-financial conflicts of interests in psychiatry. *Eur. Arch. Psychiatry Clin. Neurosci.* 2010; **260**: S147–S151.
5. Vanchieri C. Preparing for thalidomide's comeback. *Ann. Intern. Med.* 1997; **127**: 951–952.
6. Resnik D. Conflicts of interest in science. *Perspect. Sci.* 1998; **6**: 381–408.
7. Kaliski S. Conflict of interest: the elephant in your practice. *Afr. J. Psychiatry (Johannesbg)* 2013; **16**: 161–165.
8. Phillips ML, Kupfer DJ. Bipolar disorder diagnosis: challenges and future directions. *Lancet* 2013; **381**: 1663–1671.
9. Kuehn BM. APA targets unnecessary antipsychotic use. *JAMA* 2013; **310**: 1909–1910.
10. Lopez OL, Becker JT, Chang YF et al. The long-term effects of conventional and atypical antipsychotics in patients with probable Alzheimer's disease. *Am. J. Psychiatry* 2013; **170**: 1051–1058.
11. Carpenter WT Jr, Gold JM, Lahti AC et al. Decisional capacity for informed consent in schizophrenia research. *Arch. Gen. Psychiatry* 2000; **57**: 533–538.
12. Kim SY, Caine ED, Currier GW, Leibovici A, Ryan JM. Assessing the competence of persons with Alzheimer's disease in providing informed consent for participation in research. *Am. J. Psychiatry* 2001; **158**: 712–717.
13. Kim SY. Evidence-based ethics for neurology and psychiatry research. *NeuroRx* 2004; **1**: 372–377.
14. Angell M. *The Truth about the Drug Companies*. Random House, New York, 2004.
15. Harris G. Top psychiatrist didn't report drug makers' pay. The New York Times, 3 October 2008. [Cited 8 January 2014.] Available from URL: http://www.nytimes.com/2008/10/04/health/policy/04drug.html?pagewanted=all&_r=0.

16. Norris SL, Holmer HK, Ogden LA, Burda BU, Fu R. Characteristics of physicians receiving large payments from pharmaceutical companies and the accuracy of their disclosures in publications: An observational study. *BMC Med. Ethics* 2012; **13**: 24.
17. Perlis RH, Perlis CS, Wu Y, Hwang C, Joseph M, Nierenberg AA. Industry sponsorship and financial conflict of interest in the reporting of clinical trials in psychiatry. *Am. J. Psychiatry* 2005; **162**: 1957–1960.
18. Tanne JH. US university psychiatrist loses chairmanship over drug company payments. *BMJ* 2009; **338**: a3188.
19. Thacker P. How an ethically challenged researcher found a home at the University of Miami. Forbes, 13 September 2011. [Cited 8 January 2014.] Available from URL: http://www.forbes.com/sites/paulthacker/2011/09/13/how-an-ethically-challenged-researcher-found-a-home-at-the-university-of-miami/.
20. Wadman M. Senate watchdog questions US grant to controversial psychiatrist. Nature News Blog, 29 May 2012. [Cited 8 January 2014.] Available from URL: http://blogs.nature.com/news/2012/05/senate-watchdog-questions-nih-award-to-controversial-psychiatrist.html.
21. Harper PS. Naming of syndromes and unethical activities: The case of Hallervorden and Spatz. *Lancet* 1996; **348**: 1224–1225.
22. Strous RD, Edelman MC. Eponyms and the Nazi era: Time to remember and time for change. *Isr. Med. Assoc. J.* 2007; **9**: 207–214.
23. Goldstein M. Decade of the brain. An agenda for the nineties. *West. J. Med.* 1994; **161**: 239–241.
24. Fisher CE, Chin L, Klitzman R. Defining neuromarketing: Practices and professional challenges. *Harv. Rev. Psychiatry* 2010; **18**: 230–237.
25. Wade N. A decade later, genetic map yields few new cures. The New York Times, 12 June 2010. [Cited 8 January 2014.] Available from URL: http://www.nytimes.com/2010/06/13/health/research/13genome.html?pagewanted=all
26. Lynch HF. The rights and wrongs of intentional exposure research: Contextualising the Guatemala STD inoculation study. *J. Med. Ethics* 2012; **38**: 513–515.
27. Reverby SM. Listening to narratives from the Tuskegee syphilis study. *Lancet* 2011; **377**: 1646–1647.
28. Als-Nielsen B, Chen W, Gluud C, Kjaergard LL. Association of funding and conclusions in randomized drug trials: A reflection of treatment effect or adverse events? *JAMA* 2003; **290**: 921–928.
29. Helmchen H. Ethics of clinical research with mentally ill persons. *Eur. Arch. Psychiatry Clin. Neurosci.* 2012; **262**: 441–452.
30. Wise J. Pfizer accused of testing new drug without ethical approval. *BMJ* 2001; **322**: 194.
31. World Medical Association. Declaration of Helsinki 2013. [Cited 8 January 2014.] Available from URL: http://www.wma.net/en/30publications/10policies/b3.
32. Heres S, Davis J, Maino K, Jetzinger E, Kissling W, Leucht S. Why olanzapine beats risperidone, risperidone beats quetiapine, and quetiapine beats olanzapine: An exploratory analysis of head-to-head comparison studies of second-generation antipsychotics. *Am. J. Psychiatry* 2006; **163**: 185–194.
33. Kirsch I, Deacon BJ, Huedo-Medina TB, Scoboria A, Moore TJ, Johnson BT. Initial severity and antidepressant benefits: A meta-analysis of data submitted to the Food and Drug Administration. *PLoS Med.* 2008; **5**: e45.
34. Turner EH, Matthews AM, Linardatos E, Tell RA, Rosenthal R. Selective publication of antidepressant trials and its influence on apparent efficacy. *N. Engl. J. Med.* 2008; **358**: 252–260.
35. Whittington CJ, Kendall T, Fonagy P, Cottrell D, Cotgrove A, Boddington E. Selective serotonin reuptake inhibitors in childhood depression: Systematic review of published versus unpublished data. *Lancet* 2004; **363**: 1341–1345.
36. Penn E, Tracy DK. The drugs don't work? Antidepressants and the current and future pharmacological management of depression. *Ther. Adv. Psychopharmacol.* 2012; **2**: 179–188.
37. Khan A, Leventhal RM, Khan SR, Brown WA. Severity of depression and response to antidepressants and placebo: An analysis of the Food and Drug Administration database. *J. Clin. Psychopharmacol.* 2002; **22**: 40–45.
38. Fournier JC, DeRubeis RJ, Hollon SD et al. Antidepressant drug effects and depression severity: A patient-level meta-analysis. *JAMA* 2010; **303**: 47–53.
39. Caplan RM. History of the Society of Medical College Directors of Continuing Medical Education (SMCDCME): The first twelve years, 1976-1988. *J. Contin. Educ. Health Prof.* 1996; **16**: 14–24.
40. Institute of Medicine. *Conflict of Interest in Medical Research, Education, and Practice*. National Academies Press, Washington, DC [Cited 8 January 2014.] Available from URL: http://books.nap.edu/openbook.php?record_id=12598.
41. Brennan TA, Rothman DJ, Blank L et al. Health industry practices that create conflicts of interest: A policy proposal for academic medical centers. *JAMA* 2006; **295**: 429–433.
42. Geppert CM. Medical education and the pharmaceutical industry: A review of ethical guidelines and their implications for psychiatric training. *Acad. Psychiatry* 2007; **31**: 32–39.
43. Moynihan R. Drug company sponsorship of education could be replaced at a fraction of its cost. *BMJ* 2003; **326**: 1163.
44. Stotland N. APA responds to Sen. Grassley. *Psychiatric News* **43**: 3 5 September 2008. [Cited 8 January 2014.] Available from URL: http://psychnews.psychiatryonline.org/newsarticle.aspx?articleid=112023&RelatedNewsArticles=true.

45. Wazana A. Physicians and the pharmaceutical industry: Is a gift ever just a gift? *JAMA* 2000; **283**: 373–380.
46. Rothman DJ, McDonald WJ, Berkowitz CD et al. Professional medical associations and their relationships with industry: A proposal for controlling conflict of interest. *JAMA* 2009; **301**: 1367–1372.
47. Association of American Medical Colleges. Industry funding of medical education. Report of an AAMC Task Force. [Cited 8 January 2014.] Available from URL: https://members.aamc.org/eweb/upload/Industry%20Funding%20of%20Medical%20Education.pdf.
48. Campbell EG, Weissman JS, Ehringhaus S et al. Institutional academic industry relationships. *JAMA* 2007; **298**: 1779–1786.
49. Varley CK, Jibson MD, McCarthy M, Benjamin S. A survey of the interactions between psychiatry residency programs and the pharmaceutical industry. *Acad. Psychiatry* 2005; **29**: 40–46.
50. Brody H. Pens and other pharmaceutical industry gifts. *Am. J. Bioeth.* 2003; **3**: 58–60.
51. Katz D, Caplan AL, Merz JF. All gifts large and small: Toward an understanding of the ethics of pharmaceutical industry gift-giving. *Am. J. Bioeth.* 2003; **3**: 39–46.
52. Dana J, Loewenstein G. A social science perspective on gifts to physicians from industry. *JAMA* 2003; **290**: 252–255.
53. Chren MM, Landefeld CS. Physicians' behavior and their interactions with drug companies. A controlled study of physicians who requested additions to a hospital drug formulary. *JAMA* 1994; **271**: 684–689.
54. Sniderman AD, Furberg CD. Why guideline-making requires reform. *JAMA* 2009; **301**: 429–431.
55. Cosgrove L, Krimsky S, Vijayaraghavan M, Schneider L. Financial ties between DSM-IV panel members and the pharmaceutical industry. *Psychother. Psychosom.* 2006; **75**: 154–160.
56. Cosgrove L, Bursztajn HJ, Krimsky S, Anaya M, Walker J. Conflicts of interest and disclosure in the American Psychiatric Association's Clinical Practice Guidelines. *Psychother. Psychosom.* 2009; **78**: 228–232.
57. Seale C. Health and media: An overview. *Sociol. Health Illn.* 2003; **25**: 513–531.
58. Wilson A, Bonevski B, Jones A, Henry D. Media reporting of health interventions: Signs of improvement, but major problems persist. *PLoS ONE* 2009; **4**: e4831.
59. Grilli R, Ramsay C, Minozzi S. Mass media interventions: Effects on health services utilisation. *Cochrane Database Syst. Rev.* 2002; (1) CD000389.
60. Jordens CF, Lipworth WL, Kerridge IH. The quality of Australian health journalism is important for public health. *Med. J. Aust.* 2013; **199**: 448–449.
61. Spielmans GI, Parry PI. From evidence-based medicine to marketing-based medicine: Evidence from internal industry documents. *Bioeth. Inq.* 2010; **7**: 13–29.
62. Ferner RE, McDowell SE. How NICE may be outflanked. *BMJ* 2006; **332**: 1268–1271.
63. Schwartz LM, Woloshin S, Moynihan R. Who's watching the watchdogs? *BMJ* 2008; **337**: a2535.
64. Burton B, Rowell A. Unhealthy spin. *BMJ* 2003; **326**: 1205–1207.
65. Handel AE, Patel SV, Pakpoor J, Ebers GC, Goldacre B, Ramagopalan SV. High reprint orders in medical journals and pharmaceutical industry funding: Case-control study. *BMJ* 2012; **344**: e4212.
66. Greene JA. Pharmaceutical marketing research and the prescribing physician. *Ann. Intern. Med.* 2007; **146**: 742–748.
67. Wilkes MS, Doblin BH, Shapiro MF. Pharmaceutical advertisements in leading medical journals: Experts' assessments. *Ann. Intern. Med.* 1992; **116**: 912–919.
68. Smith R. Medical journals are an extension of the marketing arm of pharmaceutical companies. *PLoS Med.* 2005; **2**: e138.
69. Oshima I, Mino Y, Inomata Y. Institutionalisation and schizophrenia in Japan: Social environments and negative symptoms: Nationwide survey of in-patients. *Br. J. Psychiatry* 2003; **183**: 50–56.
70. Vickery K. Widening the psychiatric gaze: Reflections on PsychoDoctor, depression, and recent transitions in Japanese mental health care. *Transcult. Psychiatry* 2010; **47**: 363–391.
71. The Economist. Health care in Japan. Regenerative medicine. 23 February 2013. [Cited 8 January 2014.] Available from URL: http://www.economist.com/node/21572235.
72. Mahony C. Second study on valsartan is threatened with retraction over alleged data manipulation. *BMJ* 2013; **347**: f4920.
73. Senba J. [Conflict of interest viewed from over-seas reports regarding relationship between clinical psychiatry and drug industry]. *Seishin Shinkeigaku Zasshi* 2010; **112**: 1124–1129.