Fraud and deceit in science

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Recently the scientific society in the Netherlands was shaken by the unmasking of two leading scientists. A leading social psychologist of the Tilburg University and a Professor in cardio-vascular medicine in Rotterdam, were fired because of scientific misconduct. Both published hundreds of manuscripts in eminent peer-reviewed Journals. The psychologist admitted fabricating results in several studies, the professor in cardio-vascular medicine was fired because of faking data and using patient's data without their consent.

Of course this is a worldwide phenomenon, and not only a problem in the Netherlands. This also is not the first time that fraud on this scale and of this severity has been discovered, and it will not be the last time. Estimations of this kind of fraud worldwide vary between 1 and 2% [1].

What is it that drives these people to commit such a crime? Just like bankers who take risks for a bonus, scientists all over the world are under pressure to publish. Extravagant rewards lead to the taking of higher risks. This is obvious for the banking world, where such behavior led to financial crises. Is it possible to compare the incentive bankers have with the 'publish or perish' stress for scientists?

Historically, most scientists were not paid the large amounts of money that many bankers received. However, this has changed over the years; more and more, financial rewards have become a normal way to reward someone for a scientific publication. For instance, a head of department personally or the department itself may receive a fee from their institution for every PhD student delivered. This is obviously important because it may, for instance, mean extra researchers and thus greater status. The Hirsch index, introduced in 2005, is often

used to measure scientific "stardom" [2]. This index attempts to measure both the productivity and the impact of the published work of a given scientist or scholar. It is based on the set of the scientist's most cited papers and the number of citations that they have received in other publications. Universities, hospitals and other organizations use this tool to measure productivity for a scientist or a whole department in a similar way to how a tennis player is ranked by the number of tournaments won.

Besides fame for a researcher, a career is also made—or destroyed—on the basis of publications. Only those whose scientific curriculum vitae is adequate, in other words those who have a high Hirsch index, are destined for a professorship. There are good reasons for this, but have the incentives not gone too far?

I believe that we *have* gone too far. This is reflected, for example, in the fee often demanded by some of the top journals even to have a manuscript peer reviewed. Even though the chance of getting published is very low in these top-ranking journals, many scientists still pay large amounts of money in the hope of success.

Money is usually needed to perform research. How does one get the money to initiate research at the beginning of a career? I mean research for the benefit of patients, of course. Pharmaceutical industries are eager to get their products on the market but do not always produce products that are safe for patients. The temptation for a promising young, perhaps somewhat naive, doctor to compromise and conduct a study for company X, with the prospect of publication in a renowned journal, may be high. The incentive for an established professor who has not produced the agreed amount of articles for the university can also be too high. Under the flag of research, results on many not-so-safe products have been published.

Does this all harm patients? Bankers take risks with some other people's money but harmed almost everyone on earth financially. Do scientists who commit fraud risk the health

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of their patients and future patients? Fraud probably does not hurt any patients directly when data are fabricated. But let us imagine that this fraudulent research, let's say on a spectacular new form of prolapse surgery with the use of a device or mesh, is published in a well-known journal. Obviously other doctors performing the same surgery will not achieve the same results and may well cause harm to patients.

Is fraud prevention an option? Editors judge manuscripts through the peer-review process. However, reviewers are busy volunteers who cannot check articles for authenticity of all data. In the USA, the Food and Drug Administration (FDA) has the power to go to institutions or pharmaceutical companies to check whether the data on participants in scientific studies is correct. Unfortunately, few countries have national institutions comparable to the FDA.

We, as science-oriented urogynecologists, should ask ourselves: "What is the way forward?". In my opinion there is no excuse for scientific fraud. To minimize temptation,

editors of journals should be strict, even for seemingly small violations.

Societies, hospitals, departments, and all institutions where scientific work is produced should ask themselves whether financial rewards or careers should be so dependent on the Hirsch index, rather than assessing the individual on all his merits. Change can only come from within the scientific community itself; otherwise we will face more scientific fraud and a possible scientific crisis.

Conflicts of interest None

References

1. Fanelli D (2009) How many scientists fabricate and falsify research? a systematic review and meta-analysis of survey data. *PLoS One* 29;4 (5): e5738
2. Hirsch JE (2005) An index to quantify an individual's scientific research output <http://arXiv.org/abs/physics/0508025v5> (uploaded on Dec 17, 2011)