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Registered Reports: A new submission format at *Drug and Alcohol Dependence*

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The latest revision of the World Medical Association Declaration of Helsinki includes a small but notable change – pre-registration of research protocols prior to the commencement of data collection is included as a requirement for all research, not just clinical trials (World Medical Association, 2013). Pre-registration has been common practice for clinical trials for some time, and is a requirement of major medical journals. However, recent concerns that many scientific results are difficult to reproduce has led to suggestions that protocol pre-registration should be adopted more widely, across other study designs and disciplines. *Drug and Alcohol Dependence* will now be offering a new submission format, *Registered Reports*, which offers authors the opportunity to have their research protocol reviewed before data collection begins, with acceptance of the protocol providing acceptance in principle of the eventual results, irrespective of the nature of the results.

The problem of the poor reproducibility of many findings in the biomedical sciences has been highlighted recently by failures to replicate a number of key findings (Begley and Ellis, 2012; Prinz et al., 2011). Several potential causes of poor reproducibility have been discussed, such as publication bias against null results (Ferguson and Heene, 2012), undisclosed flexibility in data collection and analysis (Carp, 2012; Simmons et al., 2011), and low statistical power (Button et al., 2013). Recent anonymous surveys of researchers have indicated that these problems are widespread (John et al., 2012; Martinson et al., 2005). Researchers are susceptible to systemic influences that incentivise these behaviours (either consciously or unconsciously). These include the “publish or perish” culture, and the propensity for journals to publish studies

reporting novel, large, “significant” effects. Together, these influences encourage smaller, quicker, cheaper studies measuring multiple outcomes, and the flexible reporting thereof, and serve to undermine the reproducibility of reported findings.

Registered Reports was first introduced by the journal *Cortex*, and allows for a substantial part of a submission to be reviewed prior to data collection (Chambers, 2013). Manuscripts which comprise the introduction, hypotheses, methods, analysis plan (including a sample size justification, for example based on a power calculation) and pilot data if applicable can be submitted via this format, and will first be considered by *Drug and Alcohol Dependence*'s Editor in Chief or one of its Associate Editors. Those *Registered Report* manuscripts considered of appropriate interest and value will be sent for peer review, and then either rejected or accepted in principle. Following acceptance in principle, the study can begin and the authors are expected to adhere to the procedures described in their initial submission. When data collection and analysis is complete, the authors are to submit their finalised full manuscript for final peer review. As long as the procedures originally described have been followed, and the results interpreted sensibly, the manuscript will be published, irrespective of the nature of the findings. Further information on this process can be found in the Guide for Authors section on the *Drug and Alcohol Dependence* website.

This initiative is not meant to be prescriptive – *Registered Reports* is not a solution to problems of poor reproducibility in science. However, we believe that it may prove to be part of the solution. By offering authors this new format, we hope to incentivise greater transparency in the distinction between exploratory and confirmatory research, so that results can be interpreted and judged accordingly. We also hope that this

will act against publication bias of null results, first by ensuring that any null results are *informatively* null (achieved through appropriate study design and adequate statistical power), and second by providing acceptance in principle before the results are obtained (reducing the pressure to “chase” significance, and removing the implicit temptation by reviewers to judge manuscripts based on the findings reported). We hope that the *Drug and Alcohol Dependence* community will take advantage of this opportunity.

REFERENCES

- Begley, C.G., Ellis, L.M., 2012. Drug development: raise standards for preclinical cancer research. *Nature* 483, 531-533.
- Button, K.S., Ioannidis, J.P., Mokrysz, C., Nosek, B.A., Flint, J., Robinson, E.S., Munafò, M.R., 2013. Power failure: why small sample size undermines the reliability of neuroscience. *Nat. Rev. Neurosci.* 14, 365-376.
- Carp, J., 2012. The secret lives of experiments: methods reporting in the fMRI literature. *NeuroImage* 63, 289-300.
- Chambers, C.D., 2013. Registered Reports: A new publishing initiative at Cortex. *Cortex* 49, 609-610.
- Ferguson, C.J., Heene, M., 2012. A vast graveyard of undead theories: publication bias and psychological science’s aversion to the null. *Perspect. Psychol. Sci.* 7, 555-561.
- John, L.K., Loewenstein, G., Prelec, D., 2012. Measuring the prevalence of questionable research practices with incentives for truth telling. *Psychol. Sci.* 23, 524-532.
- Martinson, B.C., Anderson, M.S., de Vries, R., 2005. Scientists behaving badly. *Nature* 435, 737-738.

Prinz, F., Schlange, T., Asadullah, K., 2011. Believe it or not: how much can we rely on published data on potential drug targets? *Nat. Rev. Drug Discov.* 10, 712.

Simmons, J.P., Nelson, L.D., Simonsohn, U., 2011. False-positive psychology: undisclosed flexibility in data collection and analysis allows presenting anything as significant. *Psychol. Sci.* 22, 1359-1366.

World Medical Association, 2013. World Medical Association Declaration of Helsinki: ethical principles for medical research involving human subjects. *JAMA* 310, 2191-2194.

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