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LETTER

P-Hacking: A Wake-Up Call for the Scientific Community

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Abstract P-hacking or data dredging involves manipulation of the research data in order to obtain a statistically significant result. The reasons behind P-hacking and the consequences of the same are discussed in the present manuscript.

Keywords Journal impact factor · Publications · Research design · Financing, Organized

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Letter to the Editor

P-hacking is a form of selective data projection wherein the negative or the non-significant p values are excluded in order to obtain an overall positive or a significant result (Raj et al. 2017).
P-hacking has become a part of modern scientific research due to the following reasons:

(1) Researchers are under constant pressure from institutions and grant organizations to produce statistically significant results
(2) Impact factor journals prefer publishing studies with positive results.
(3) Most institutions approve promotions and incentives for researchers based on the number of publications in high impact factor journals.
(4) Grant commissions base the validity of the grant proposal on the researcher's publication history and the results of their previous studies. (Raj et al. 2017)

Detrimental effects of P-hacking:

(1) The P-hacking induced polluted data from individual studies may lead to other researchers exploring the same hypothesis further. This results in a significant waste of time and money.
(2) The polluted data obtained from even a few individual studies can drastically change the results of systematic reviews and meta-analyses.
(3) Based on the results of this meta-analysis, interventional studies are planned, thus corrupted data may lead to faulty treatment strategies causing potential health hazards to patients (Head et al. 2015; Ioannidis 2005).

Thus, it is vital that the scientific community assesses the true quality of a research work based on the research methodology rather than the results of the study. Until then researchers would continue to compromise the research methodology to increase the possibility of obtaining a statistically significant result.

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