

Commentary

A Comment on "Beyond P-value: the Rigor and Power of Study"

Angelean Hendrix

Interdisciplinary work has unique challenges regardless of the fields involved. A free flow of ideas and advances can be almost impossible due to the vast amount of information available and the use of different scientific languages. Pharmaceutical development faces this challenge on a daily basis. Though the statistical community has been debating and improving their methods for decades, implementation outside of the field and academia has been slow to follow. One of the first statistical measures that I personally used was the p-value, a principle that all experimentalists must follow if their work is to be taken seriously, but statisticians know it is not enough and results are routinely published that are not replicable. "Beyond P-value: the Rigor and Power of Study" by Zhang and Hughes (1) boils down the American Statistical Association's position from 2019 into terms that are easily understandable to a wide audience of scientists. The proposed criteria have the potential to easily fix many problems

associated with poorly designed studies and goes further to strongly suggest engagement with statisticians at every step from bench to bedside. The proposal is well presented, easily understood and long overdue.

Changes to statistical design, as proposed, address a critical scientific need, but a larger communication issue exists in interdisciplinary work. Fundamentally, it is impossible to stay current on all the advances in one's own discipline much less those adjacent. Proficiency should not replace expertise, and, when the implementation of significant changes in theories is delayed for years, we must consider the consequences to the end beneficiaries of our work: the patients. Increased engagement with statistical and mathematical experts during the earliest stages of animal study design can streamline an entire development program and avoid future problems of reproducibility by helping make sure every study is rigorously designed and powered.

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CONFLICT OF INTERESTS

The author has declared no conflict of interests regarding the publications of this paper.

REFERENCES

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