

Statistics Reflection I: ASA Statement on P-values

Frankly speaking, I never thought to question the use of p-values in statistical practice since it is actually what I've learnt from school. As the article says, "We teach it because it's what we do; we do it because it's what we teach." It's too common for us students to think of what we've learnt from school as the gold standard for practice, but end up figuring out it's not the case. Therefore, I think it's really important for authorities like ASA to bring out the concern, have certain discussions, and shed light on this field.

Thanks to the statement posted by ASA, I actually get a more comprehensive understanding of p-values. I almost never thought about cherry-picking promising findings too much when I read articles or published literature. I tend to rely on the power of p-values and pay much attention to statistically significant results. I now realize that in order to draw reliable scientific results, researchers must reveal the number of hypotheses considered throughout the study, all data collection choices, all statistical analyses performed, and all p-values calculated. In addition, since I majored in clinical medicine during my undergraduate years, I've noticed the wild use of p-values in medical studies as well as some decision-making based on those studies. In my view, p-values should be taken into consideration for decision-making since they can show how incompatible the data is with a given statistical model. However, to draw scientific inferences, researchers should also take into account a variety of contextual elements, such as the study's design, measurement quality, outside evidence for the phenomenon being studied, and the reliability of the assumptions underlying the data analysis.