5 Minutes of Reflections

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I've attended each USCOTS since 2009. Here is something I've observed.

USCOTS is a *meta* experience.

meta

showing or suggesting an explicit awareness of itself or oneself as a member of its category

The educators educate the educators

&

the teachers teach the teachers.

It's awesome!

A lot of mention & discussion of ***dichotomous thinking***

What does the internet have to say?

- google search of 'dichotomous thinking'
- First hit:

Dichotomous thinking, also known as "black or white **thinking**," is a symptom of many mental illnesses, including borderline personality disorder (BPD). If you have BPD and **dichotomous thinking** is a struggle for you, you may see only the extremes of things, never the middle.

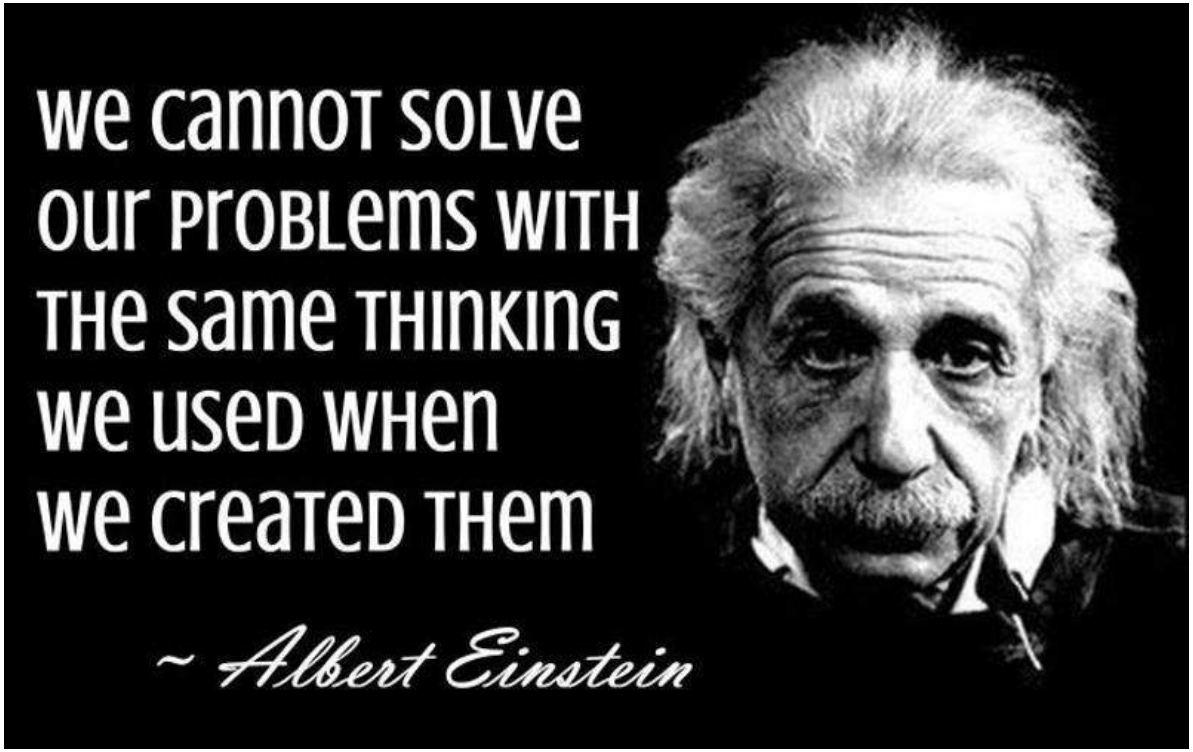
Dichotomous Thinking & Borderline Personality Disorder - Verywell
https://www.verywell.com/dichotomous-thinking-425292

Is NHST an illness?

It is definitely a problem

p-values & moving forward

What is our mindset for 'moving beyond p<.05'?



p-values & moving forward

- p-values are neither good nor bad; it's how they are used that matters (Beth Chance)

- Even if we rid of statistical significance & p-values
  - 90+ years of p-value centric literature to deal with
  - That isn't going away

p-values & moving forward

- Some ideas of what you can do now if you are not already doing:

1. Report effect size
2. Use interval estimate
3. Avoid using .05 or any other cutoff
4. Define contextual importance

A few things I learned these past few days…

1. Swim with the dolphins (Rossman 2008)

2. Go to Tasmania! (per Jane Watson)

3. WTF is robust to specification (thanks, Jeff Witmer)

4. Significance testing and Tinder have a lot in common (per Ron Wasserstein)
   - Little information to make any real decisions
   - Failing to reject is not the same as accepting
   - Give it a try and by chance alone you could get lucky
   - Significant results are a one-to-one function of your confidence level

What else did I learn?

Hm. Maybe I can rap too?

We've gone from

If the p is low, the null must go

to

If the p is there… *beware?!*

I have been pondering…

Challenges downstream beyond the classroom with ‘moving beyond p<.05’?

What about peer review?

Here is an example.

Do faculty in the health sciences – dentistry, medicine, nursing, pharmacy, public health – have an ability to evaluate evidence?

Can faculty read & understand the literature in their discipline?

Study: What Do Health Sciences Faculty Know About Statistics?

Team Members

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Illinois State University

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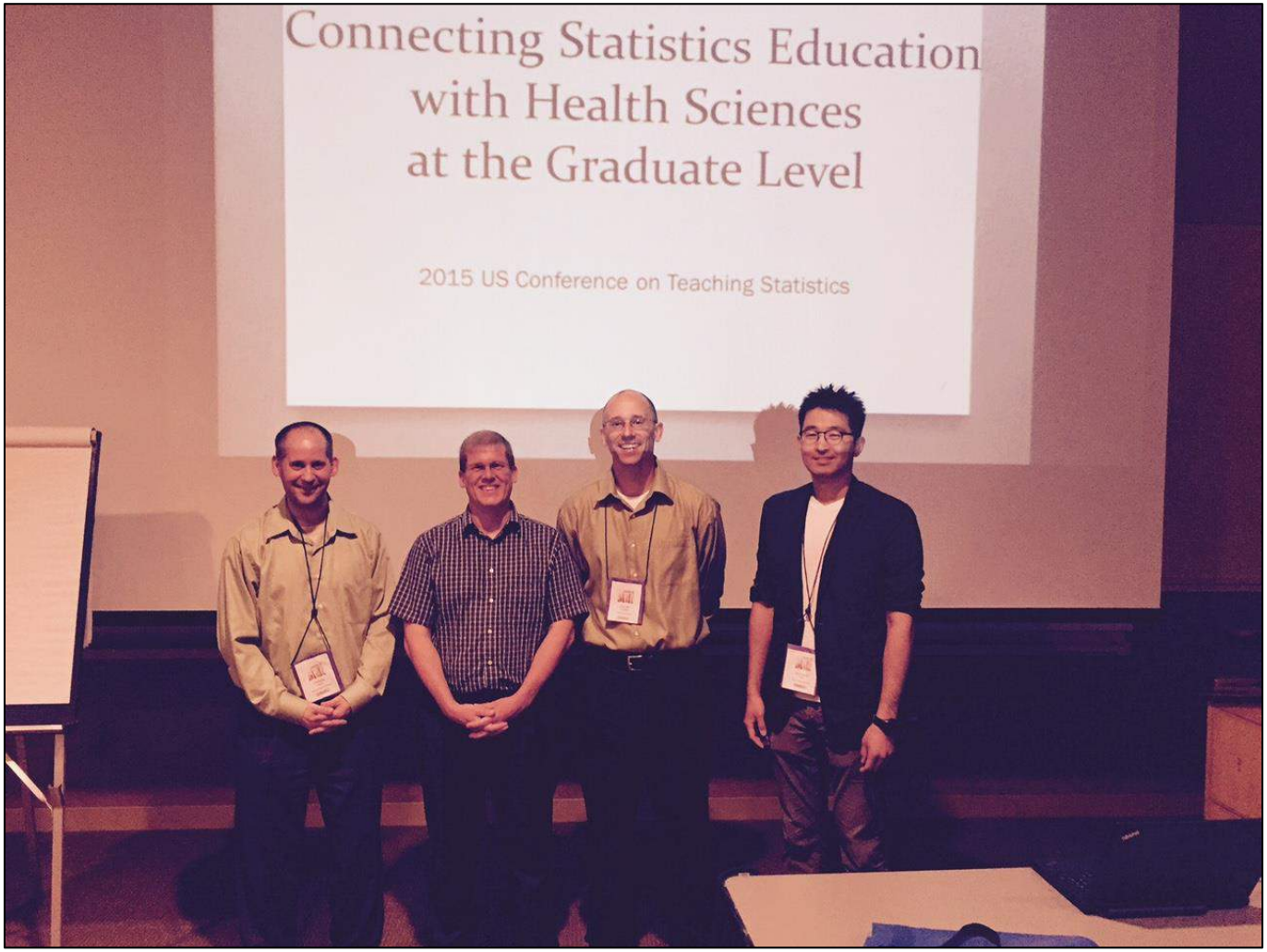
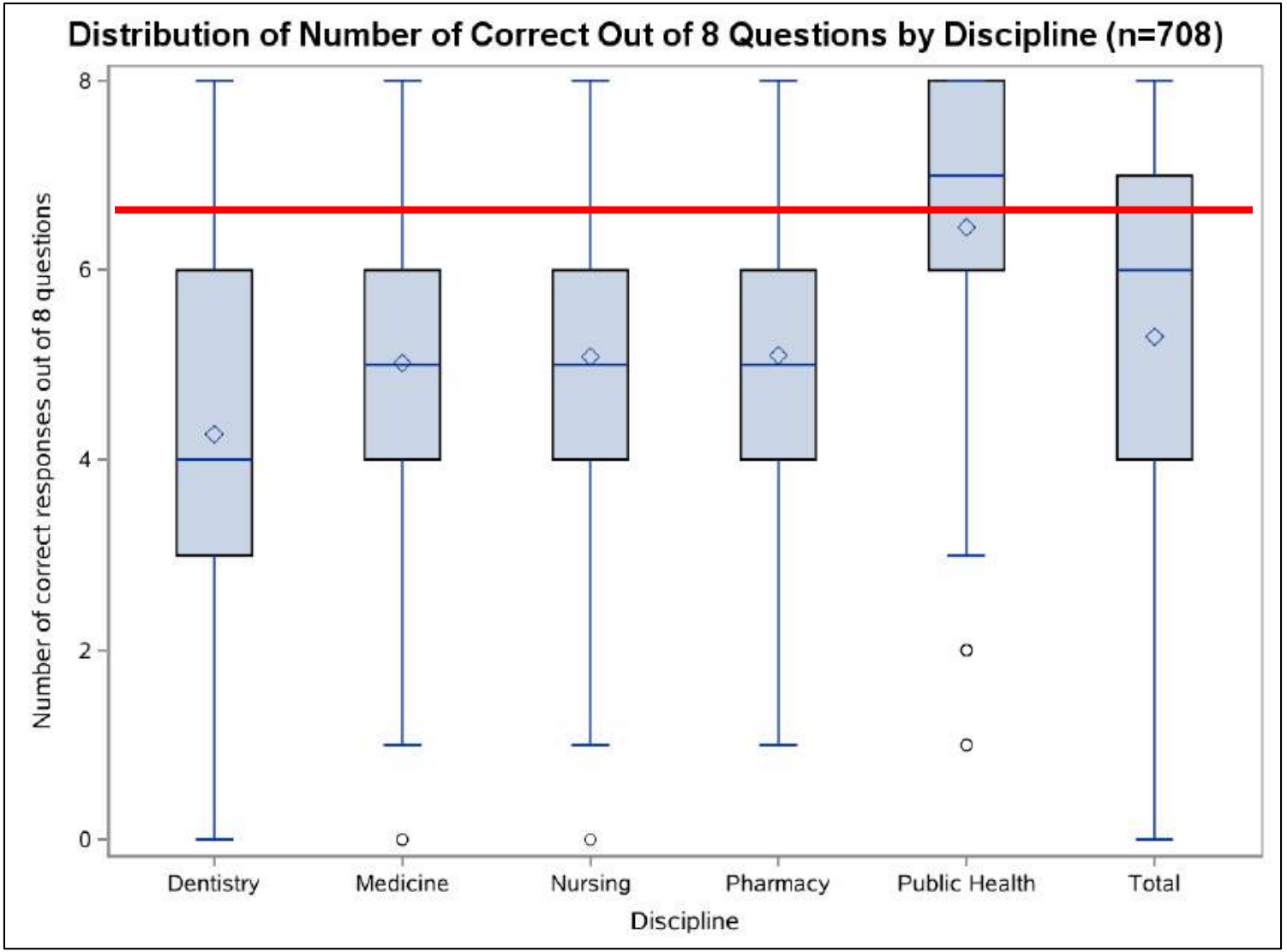


Study: What Do Health Sciences Faculty Know About Statistics?

Overall Study Results – Statistics Knowledge

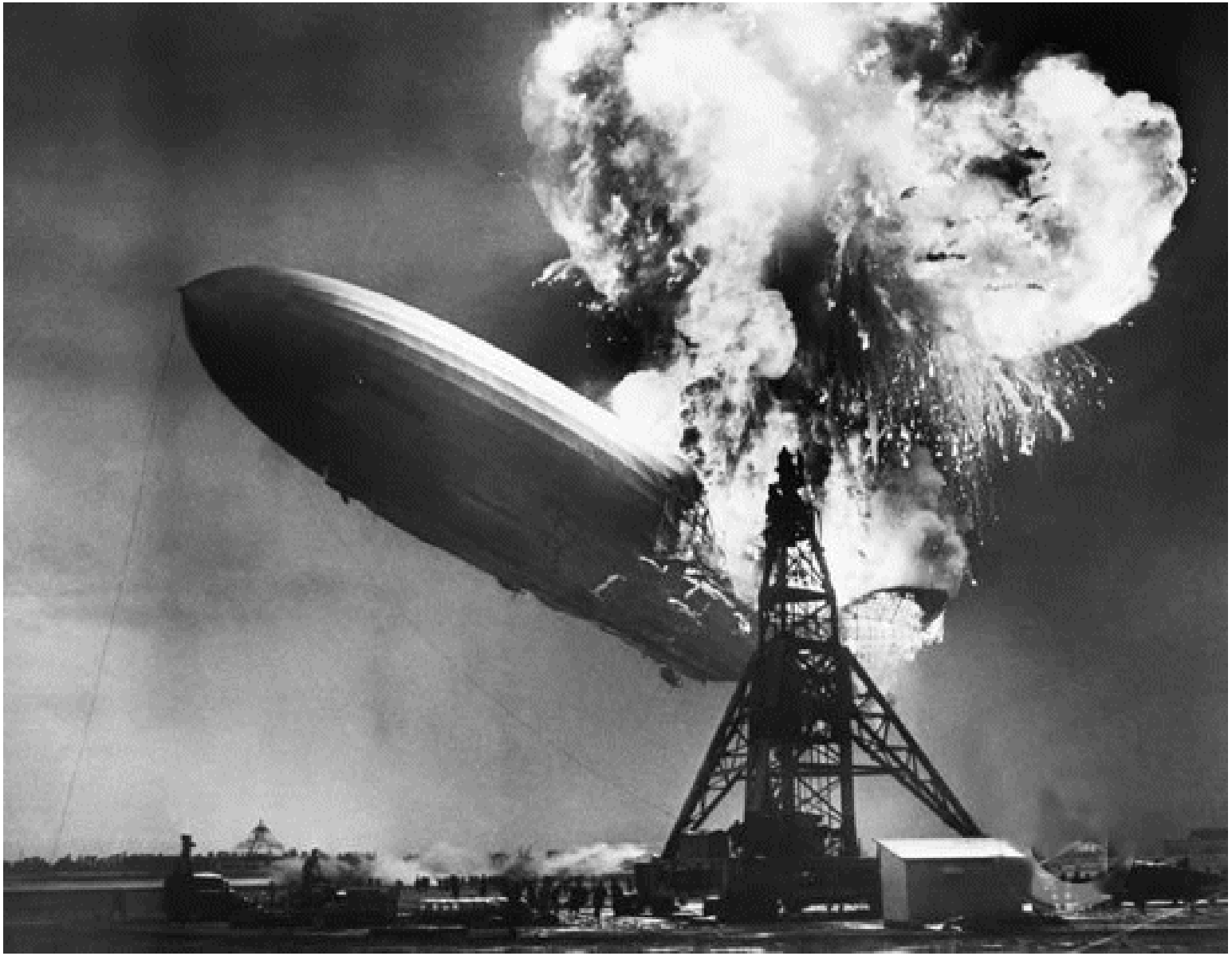


We had a publishing plan.

5 manuscripts to 5 discipline-specific journals.

We may have been a tad bit overly ambitious.

Things didn't go according to plan.



Review of Dentistry Manuscript

Wrong **T**opic of **F**ocus (Thank you, Jeff Witmer)

Journal of Dental Education

Decision: Reject

Reviewer 1: "With such a questionnaire in which the answers to the questions can be regarded as "correct" or "wrong", **online survey is not acceptable to me**. I prefer a face-to-face questionnaire."

Review of Dentistry Manuscript

Wrong **T**opic of **F**ocus

Journal of Education and Ethics in Dentistry

Manuscript Submitted: May 17, 2018

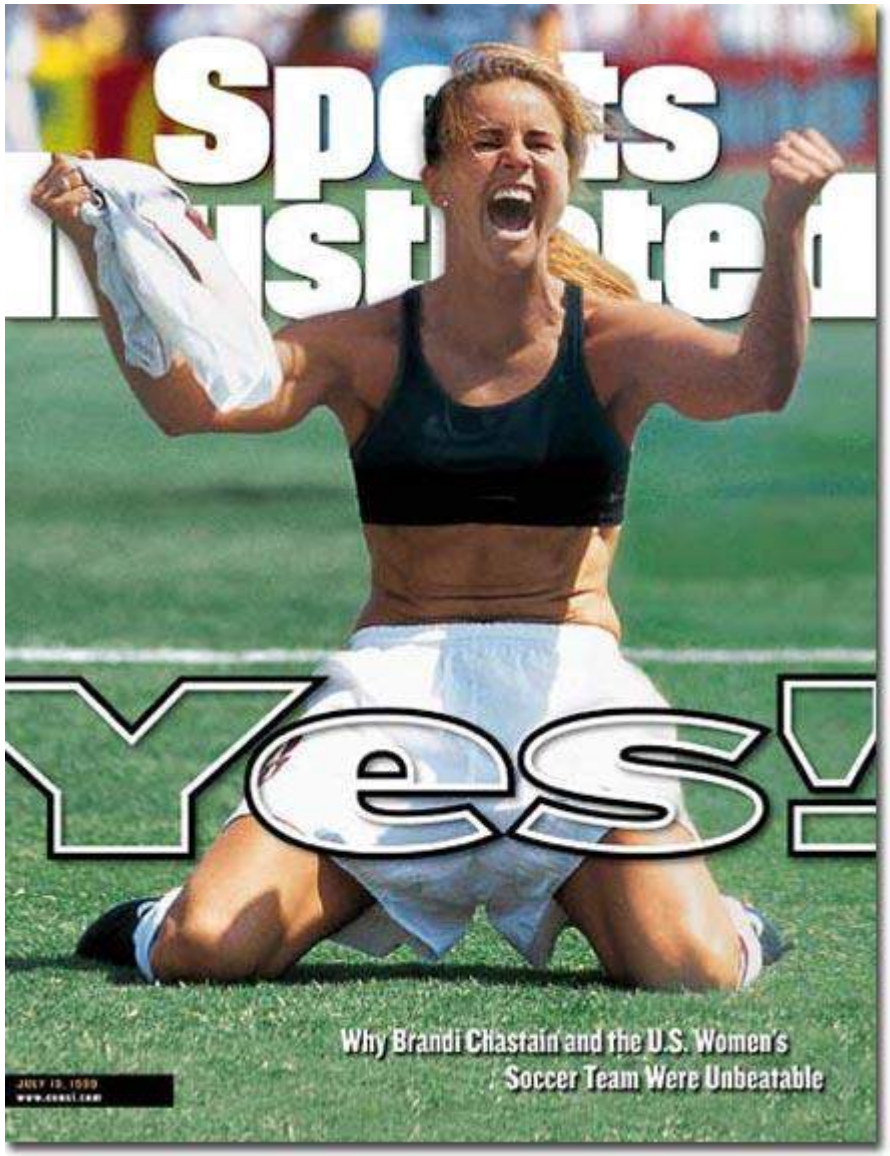
Journal Response: March 12, 2019 (299 days).

Decision: Reject

The entirety of the review consisted of **one reviewer** with **one comment**:

> "Topic is interesting. However, your manuscript does not fulfill the standard of acceptable papers. **First of all there are quite few references and the newest reference is from 2013**. I am sure that this topic has been examined in past few years."

The Pharmacy Manuscript was Accepted & Published!



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Research Paper

A cross-sectional assessment of statistical knowledge among pharmacy faculty

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Just because…

KEEP
CALM
CAUSE
Finally
IT'S ALL OVER