THE HEALTHCARE TRIAGE PODCAST

SPECIAL SERIES: SCIENCE CULTURE & REPRODUCIBILITY

Episode One

Description

This podcast series focuses on the relationship between science culture and reproducibility. To lay the foundation for that, we first need to discuss the replication crisis: What is it and what are some of the major factors that have come to light in the last decade or so?

Materials needed

- **A device capable of playing podcasts**
- **Internet connection for downloading or streaming audio**
- **Access to sources listed within lesson guide**
- **Make sure students know how to download/listen to podcasts:**
  - **https://www.wired.com/story/podcasts-beginners-guide/**

- **Episode 1**

Learning goals

- **Understand what is meant by the term "Replication Crisis"**
- **Learn general timeline, history, and major incidents**
- **pinpoint major contributing factors**
- **discuss appropriate criticism of science, why putting resources into replications is necessary, and why a study that doesn't reproduce is not necessarily a "bad" thing**

Suggested topics of discussion and related literature

1) What exactly is research reproducibility?

- What Does Research Reproducibility Mean

2) Predictions/work/cases related to irreproducibility in science:

- Why Most Published Research Findings Are False
- How Reliable Are Psychology Studies?
- Why Bad Science Is Plaguing Health Research - and How to Fix It
- Here's How Cornell Scientist Brian Wansink Turned Shoddy Data Into Viral Studies About How We Eat

3) Is there a fundamental problem with the way we approach science?

- Who is Dr. Frankenstein? – Or, What Professor Hayek and His Friends Have Done to Science

4) Oh the p-value!

- P-values: Misunderstood and Misused
- Statisticians Found One Thing They Can Agree On: It's Time To Stop Misusing P-Values
- Not Even Scientists Can Easily Explain P-values

5) Are scientists performing questionable research? Is this something you see/have seen in your own research experiences?

- Ethical Shades of Gray: International Frequency of Scientific Misconduct and Questionable Research Practices in Health Professions Education
- How Many Scientists Fabricate and Falsify Research? A Systematic Review and Meta-Analysis of Survey Data

6) Failure to replicate isn't necessarily "bad" and we probably need to stop talking about it like it is.

- Failure Is Moving Science Forward

7) We may need to change the way we talk/feel about the factors that contribute to poor rates of replication. For example, asking about analyses and if they border on/constitute p-hacking is often considered a personal offense. Should it be?

- **What If We Talked About P-Hacking the Way We Talk About Experimenter Effects?**

Other general points of discussion:

1) How have your own experiences resonated with what our experts had to say in episode one?

2) Do you think there's a problem? If so, have you had experiences trying to address it? How did that go?