Are Women More Likely Than Men to Experience the "Imposter Phenomenon"?

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Background

- **Imposter Phenomenon (IP)** is defined as feelings of self-doubt over one's abilities and accomplishments and of feeling like a "fraud".
- Clance and Imes (1978) first documented that women in academic and business settings felt as though they had achieved success simply by luck, rather than by being qualified to do their job.
- Further research has also demonstrated how IP has been associated with low self-esteem, neuroticism, and other personality traits (e.g., Rohrmann *et al*., 2016; Schubert and Bowker, 2019).
- However, others have argued that IP results from specific cues that individuals receive in their environments about their ability to succeed (e.g., Bernard & Neblett, 2018; Feenstra *et al*., 2020).
- Thus, women and men might both experience IP depending upon specific circumstances (e.g., by in the minority group).
- The previous evidence for whether average IP scores differ between sex has been mixed, with some studies showing higher average IP scores for female than male participants, and some studies showing no sex differences in IP scores (Bravata et al., 2020).

Aims

- The aim of this project was to use meta-analytic techniques to examine the published datasets and test whether there is a robust sex difference in IP across studies.
- As half of the studies published on IP involve university or college students (Bravata *et al*., 2020), the study also looked at whether the variability in sex differences in IP across student versus non-student populations

https://ed.ted.com/lessons/what-is-imposter-syndrome-and-how-can-you-combat-it-elizabeth-cox

Methods

- The study used the **PRISMA** framework for systematic reviews and meta-analyses to collate the published datasets.
- Systematic key words searches were undertaken in *Web of Science* and *Scopus* using a range of key words, including "impost*r phenomenon" and "impost*r feelings".
- I collated those studies that used self-report questionnaires to measure IP (e.g., *Clance Imposter Phenomenon Scale*, *Young Imposter Phenomenon Scale*, and *Harvey Imposter Phenomenon Scale*, example question: "At time, I feel my success has been due to some kind of luck", answered on a 5-point Likert scale).
- The searches uncovered 34 studies, from which I extracted average male and female IP scores (and standard deviations and sample size) to calculate:

  effect size = mean female IP score – mean male IP score
- I used the *Meta-Essentials* tool for the statistical analyses, including a sub-group analysis on studies that had used student (n=21) versus non-student participants (n=9).

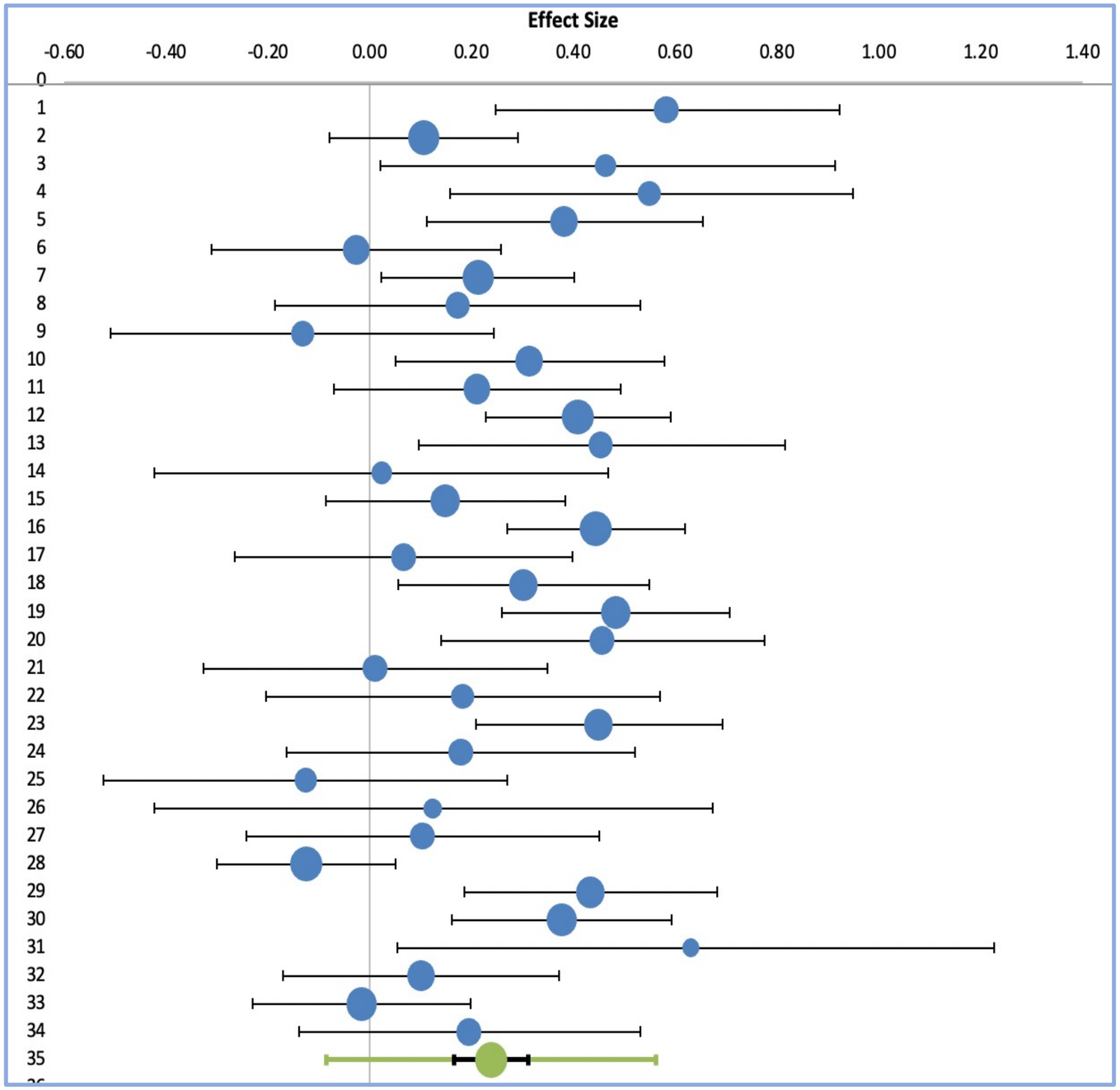

Figure 1: Effect sizes of individual studies (blue points = effect sizes with confidence intervals) and combined effect size (green point).

Positive effect size = women scored higher on average than men.

Negative effect size = men scored higher on average than women.

Results

- The results revealed that there was a significant overall sex difference in IP scores ($p<0.05$) with women scoring higher on average than men, with a small-medium effect size of 0.24 (**Figure 1**).
- The subgroup analyses between a student and non-student population revealed a non- significant difference between the two groups in a between-subjects ANOVA model ($p = 0.212$).
- However, the effect size for student populations was slightly higher (0.27) than the effect size for non-student populations (0.15) (**Figure 2**). In both populations, the effect sizes were positive, meaning that women scored higher on average than men.

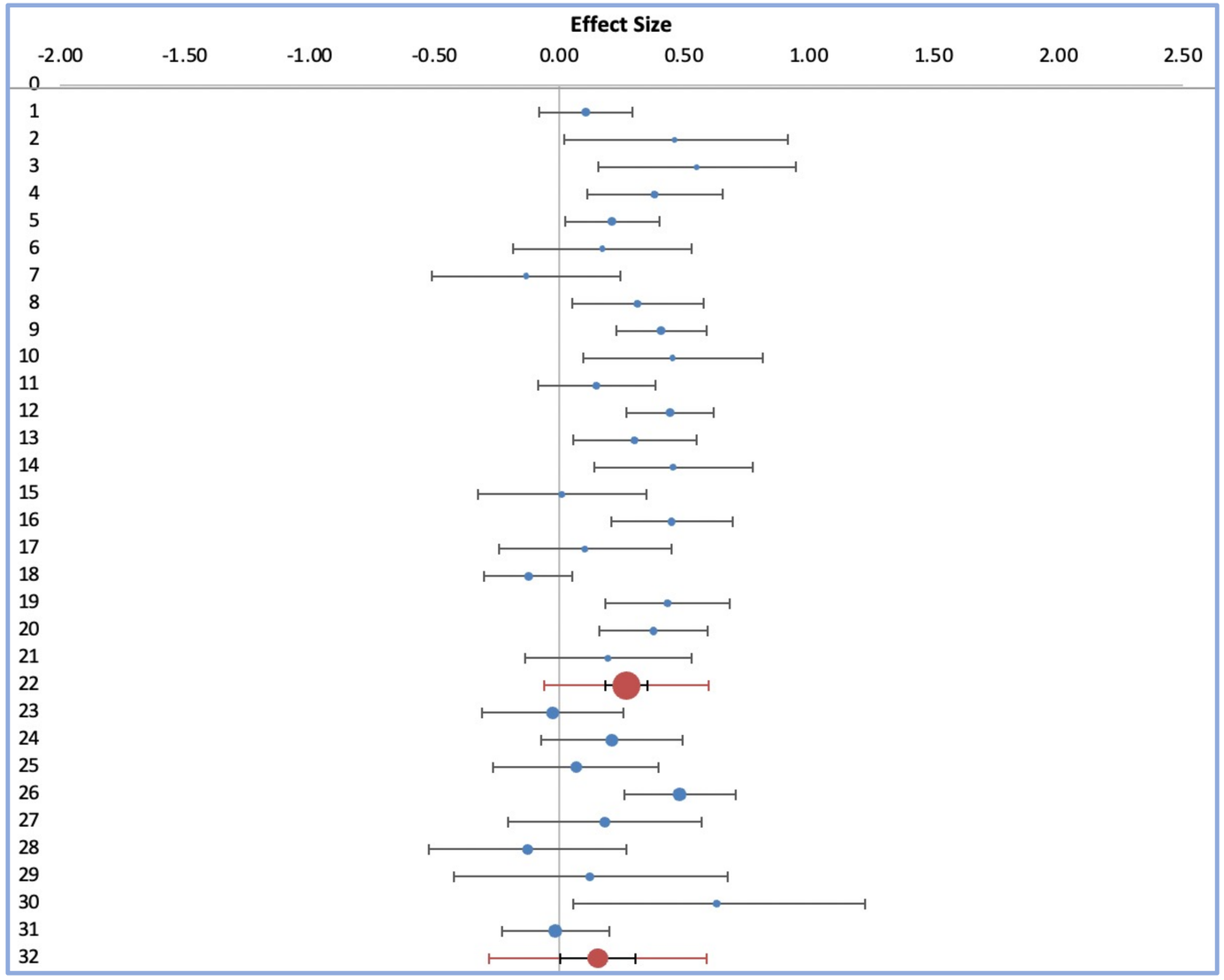

Figure 2: Combined effect size for student populations (red point at line 22 with confidence intervals) and combined effect size for non-student populations (red point at line 32 with CIs)

Discussion and conclusion

- Women have higher average IP scores than men overall in the published literature.
- It is important to note that many of the studies were on STEM students, and women could be socialized to feel like ”frauds” in these contexts.
- These findings can be used to develop interventions to alleviate IP in students and improve wellbeing.

References

Bernard, D. and Neblett, E. 2018. A culturally informed model of the development of the impostor phenomenon among African American youth. *Adol. Res. Rev.* 3: 279-300.

Bravata, D. M., Watts, S. A., Keefer, A. L., Madhusudhan, C. K., Taylor, K. T., Clark, D. M., Nelson, R. S., Cokley, K. O. and Hagg, H. K. 2020. Prevalence, predictors, and treatment of imposter syndrome: a systematic review. *J. Gen. Intern. Med.* 35: 1252-1275.

Clance, P. R. & Imes, S. 1978. The imposter phenomenon in high achieving women: dynamics and therapeutic interventions. *Psychother. Theor. Res. Prac.* 15: 1-8.

Feenstra, S., Begeny, C. T., Ryan, M. K., Rink, F. A., Stoker, J. I. and Jordan, J. 2020. Contextualizing the imposter “syndrome”. *Front. Psychol.* 11: 575024.

Rohrmann, S., Bechtoldt, M. N. and Loenhardt, M. 2016. Validation of the imposter phenomenon among managers. *Front. Psychol.* 7: 821.

Schubert, N. and Bowker, A. 2019. Examining the imposter phenomenon in relation to self-esteem level and self-esteem instability. *Curr. Psychol.* 38: 749-755.