

Using Positive Deviance (PD) in Medical Education to Empower Teaching: Is PD appropriate?

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Background

Positive deviance (PD) has been used successfully in clinical care but not applied to medical education. We explore the appropriateness of PD as a method of faculty developed by examining the heterogeneity in faculty assessments by students. High heterogeneity in performance supports the role of PD for organizational learning.

Methods

We developed a new end-of-rotation survey for our Internal Medicine clerkship as we believe our new survey better matches educational . As part of this process, we are examining the role of positive deviance to improve our teaching.

Modified Cochrane scale (Cochrane):
0% to 30%: might not be important;
30% to 50%: may represent moderate heterogeneity
50% to 75%: may represent substantial heterogeneity
75% to 100%: considerable heterogeneity

Each question was analyzed with a random effects analysis to determine weight rates and statistical heterogeneity. Heterogeneity was qualified with the Cochrane scale (right).

Results

Regarding overall assessment of attending effectiveness, 71% of ratings were strongly agree. However, there was moderate heterogeneity across attendings.

For the 14 specific components of teaching, 11 showed significant heterogeneity.

An example forest plot of a tactic with mid-range heterogeneity, "Learner's goals are made a priority" is shown in Figure 1. This figure suggests that attending 'J' and possibly others, could help guide attending 'C' and possibly others.

Conclusion

We found significant heterogeneity in the 11 of 14 dimensions of faculty teaching assessed by medical students. This would suggest that successful faculty skills are currently tacit, not well described, and therefore appropriate for a positive deviance approach to organizational improvement.

Future plans

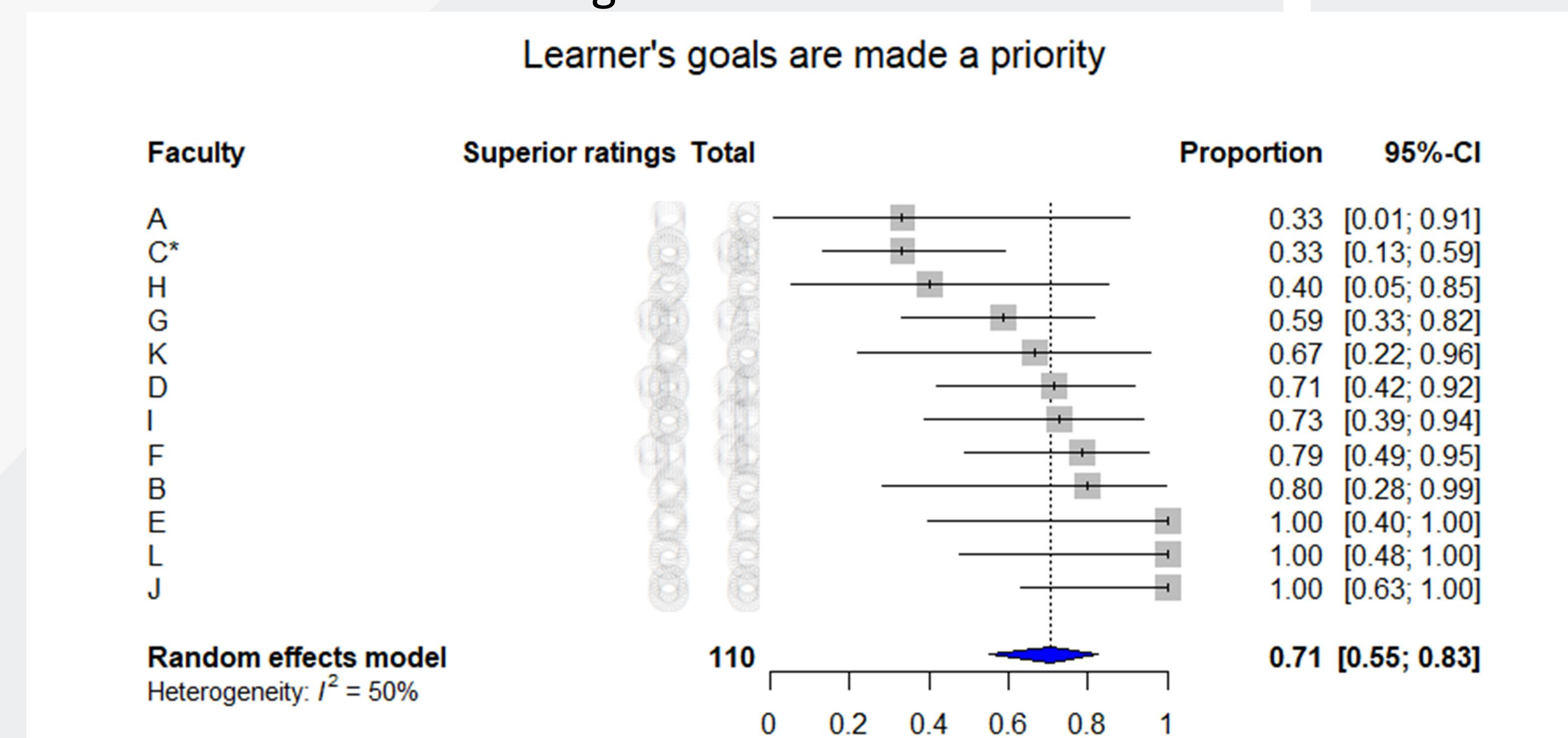
Before implementing positive deviance as an improvement strategy, the survey needs data reduction to determine the most important contributors to overall effectiveness and validation of its structure.

Table 1. Heterogeneity of responses to each question. All but two attributes show heterogeneity.

Question	Rate of strongly agree	Heterogeneity (I ²)
Overall, is an effective teacher	0.71	46%
Enthusiastic about teaching	0.77	27%
Faculty communicated concepts clearly	0.75	57%**
Demonstrates kindness	0.86	57%**
Stimulates curiosity	0.73	75%***
Is knowledgeable in one's own discipline	0.89	25%
Learner's goals are made a priority	0.71	50%
Used adjunct, multimedia methods (visual aids, whiteboard, technology, paper)	0.65	79%***
Makes efficient use of time	0.73	56%**
Encouraged learners to do outside reading	0.71	35%
Evaluated learners' knowledge of medical information	0.69	52%**
Evaluated learners' ability to apply medical knowledge to specific patients	0.68	18%
Gives timely feedback	0.69	45%
Gives constructive feedback	0.69	39%
Is accessible to students	0.74	65%**

** substantial heterogeneity
*** considerable heterogeneity

Figure 1. Example of a plot with mid-range heterogeneity. Could faculty J help faculty C and H in this dimension of teaching??



References

1. Cochrane assessment of Heterogeneity. Available at http://handbook-5-1.cochrane.org/chapter_9/9_5_2_identifying_and_measuring_heterogeneity.htm iance.

