simulation

Katie Coburn

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Code Setup

```
library(tidyverse)
library(kableExtra)
source("function_calculations.R")
source("simulation_code.R")
```

Results

d1 and v1 are the effect size and variance estimates with the adjustment. d2 and v2 are "traditional" methods of estimating the effect size and variance. (Code for both of these is located in **"function_calculations.R"**.)

d1 equation:

$$d_1 = \frac{\delta}{\sqrt{\sigma_t^2}} \sqrt{\frac{(N-2m)\sigma_e^2 + (m-1)(\sigma_e^2 + 2n\sigma_b^2) + (m-1)(\sigma_e^2 + n\sigma_{ab}^2)}{(N-2)\sigma_t^2}}$$

v1 equation:

We varied levels of n and the proportion of variability due to the interaction. Error variance (msw) and total variance (sigma total) were kept fixed. Block variance was adjusted based on interaction proportion. (Code for this is in **"simulation_code.R"**.)

```
sim_results %>%
  select(-c(delta, sigma_total, msb, msab)) %>%
  kbl(booktabs = T) %>%
  kable_styling()
```

m	n	N	int_prop	sigma_int	sigma_block	msw	d1	v1	d2	v2
2	10	40	0.00	0.00000	2.35500	2.12	0.1638334	0.0475112	0.1890878	0.1177632
4	10	80	0.00	0.00000	2.35500	2.12	0.1772345	0.0237434	0.1890878	0.0573718
2	10	40	0.13	0.58175	1.77325	2.12	0.1600570	0.1775683	0.1890878	0.1177632
4	10	80	0.13	0.58175	1.77325	2.12	0.1721173	0.0887779	0.1890878	0.0573718
2	50	200	0.00	0.00000	2.35500	2.12	0.1626077	0.0095021	0.1890878	0.0226010
4	50	400	0.00	0.00000	2.35500	2.12	0.1764118	0.0047489	0.1890878	0.0112437
2	50	200	0.13	0.58175	1.77325	2.12	0.1589576	0.1395346	0.1890878	0.0226010
4	50	400	0.13	0.58175	1.77325	2.12	0.1713749	0.0697696	0.1890878	0.0112437