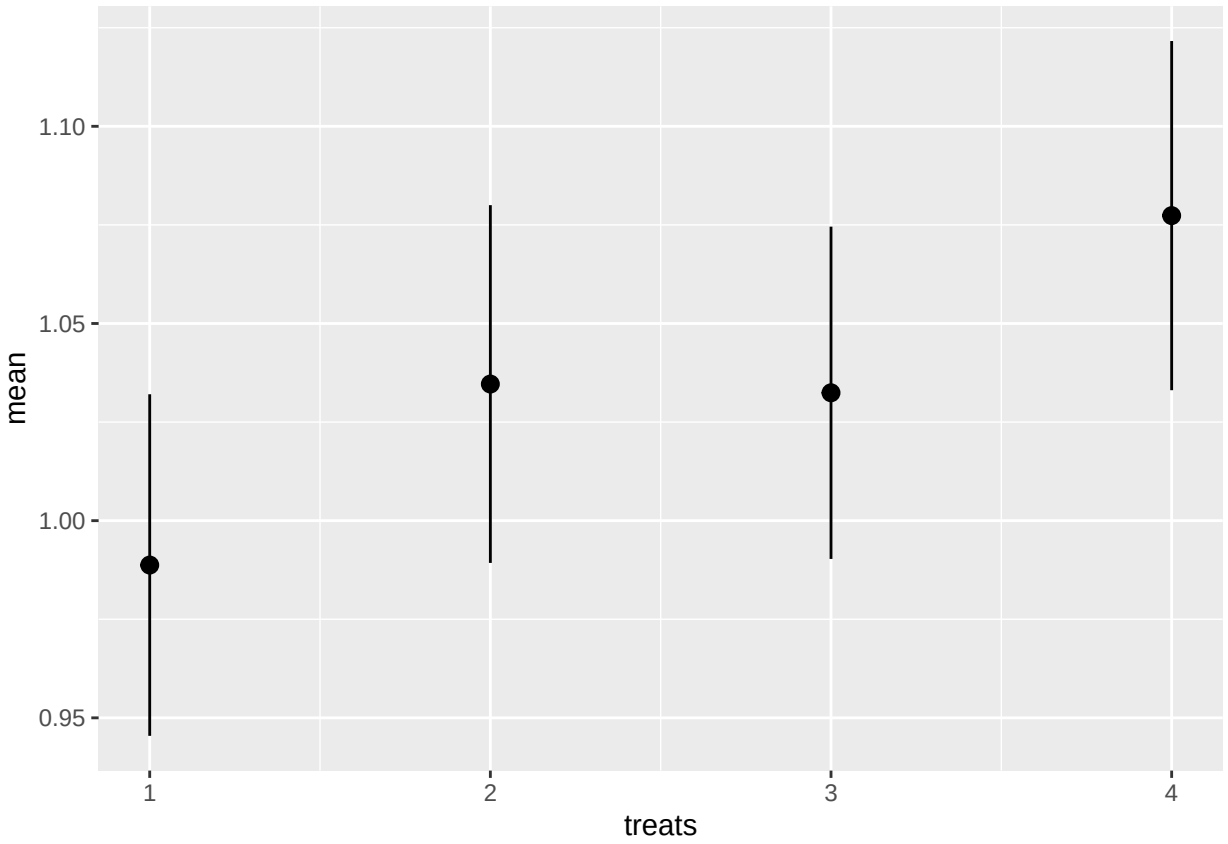
PGI Review Figure

2023-07-26

```r
library(tidyverse)
library(estimatr)

# sample size
n <- 2577

# set seed for replication
set.seed(123)

# generate treatment assignment
treats <- sample(c(1,2,3,4), size=n, replace=T)
treat2 <- ifelse(treats == 2,1,0)
treat3 <- ifelse(treats == 3,1,0)
treat4 <- ifelse(treats == 4,1,0)

# create y given Table 1 in paper
y <- 1 + 0.040 * treat2 + 0.042 * treat3 + 0.076 * treat4 + rnorm(n, 0, 0.575)

# run regression w robust SEs to estimate treatment effects
lm_robust(y ~ treat2 + treat3 + treat4)
```

```
##               Estimate Std. Error   t value      Pr(>|t|)    CI Lower  CI Upper
## (Intercept) 0.98874604 0.02209666 44.746393 9.881313e-324  0.94541699 1.0320751
## treat2      0.04590032 0.03199690  1.434524  1.515444e-01 -0.01684197 0.1086426
## treat3      0.04368428 0.03082707  1.417075  1.565821e-01 -0.01676412 0.1041327
## treat4      0.08860912 0.03159959  2.804122  5.083237e-03  0.02664590 0.1505723
##                DF
## (Intercept) 2573
## treat2      2573
## treat3      2573
## treat4      2573
```

```r
# create figure
data.frame(
  treats=treats,
  y=y
) %>%
  group_by(treats) %>%
  summarise(mean = mean(y),
            l = mean - 1.96 * sd(y) / sqrt(n()),
            u = mean + 1.96 * sd(y) / sqrt(n())) %>%
  ggplot(aes(x=treats, y=mean, ymin=l, ymax=u)) +
  geom_pointrange()
```


1.10
1.05
1.00
0.95
mean
1
2
3
4
treats