

this time: experimental design; sampling

Tu ①
12 Apr
ANSS

next time: probability

read: DD ch. 7
FPP ch. 13

class, disc. sec., of. hrs. held as usual Thu but if you choose not to come you will not be disadvantaged

hwk 2 due Fri 15 Apr by 4 pm in Barkin 142

6 copies FPP, 3

copies DD, 3 copies reader in Sci/Eng. lib.

treatment variable

iso. vs placebo (dick.)
(T) (C)

outcome variable

ANSS vs no ANSS (dick.)

potential confounding factors (PCFs)

- baseline health
- age

treatment group (T) people who get iso ③

control group (C) people who don't get iso; get placebo

people can be affected by thought of treatment (placebo effect) need

↑ inert substance like treatment in appearance

comparison between people who get treatment (T) & people who don't (C)

design 1: get \$3, HIV+ people in Den/Swe. who agree to participate, give $\frac{1}{2}$ iso & $\frac{1}{2}$ placebo at random not 2x weeks, see how many get AIDS

idea: concentrate replications where uncertainty is greatest

principle: "chain only as strong as its weakest link" ③

T: $2/412 = 0.5\%$
C: $17/421 = 4.0\%$

Q: is this difference large in practical (medical) terms?

A: yes: $\frac{T \text{ rate}}{C \text{ rate}} = 8 \text{ to } 1 \text{ (hype)}$

Q2: Is this diff. large in statistical terms?

A2: later

Q: Has this design proved an association bet. T/C &

AIDS/no AIDS? A: yes: $(*)$

Q: Has this design proved that this assoc. was caused by Iso?

A: not yet until we address

how people got into T, C ④

key idea:
R.A. Fisher
(Fisher)
British
scientist
(1920s)

Try to make T, C groups
as similar as possible
in all relevant ways
except for T/C distinction

how
do
this?

one idea (not a good
one): judgmental
allocation by
investigator

why
bad
idea:

bias

a better
idea:

T/C at random

assign to

does
randomness
guarantee

similarity of T/C? no, but

it promotes similarity & it does

a better & better job of achieving
similarity as total # of people

in (T+C) increases (831 is a
good sample
size for

