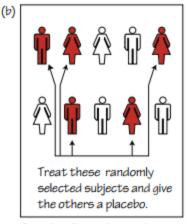
30

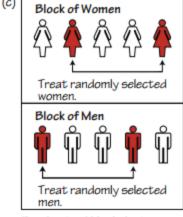
Bad experimental design:

Treat all women subjects and give the men a placebo. (Problem: We don't know if effects are due to sex or to treatment.)



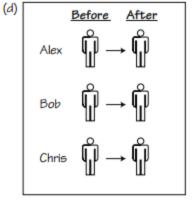
Completely randomized experimental design:

Use randomness to determine who gets the treatment and who gets the placebo.



Randomized block design:

- 1. Form a block of women and a block of men.
- 2. Within each block, randomly select subjects to be treated.



Matched pairs design:

Get measurements from the same subjects before and after some treatment.

Figure 1-5 Designs of Experiments

For example, in designing an experiment to test the effectiveness of aspirin treatments on heart disease, we might form a block of men and a block of women, because it is known that the hearts of men and women can behave differently. By controlling for gender, this randomized block design eliminates gender as a possible source of confounding.

A randomized block design uses the same basic idea as stratified sampling, but randomized block designs are used when designing experiments, whereas stratified sampling is used for surveys.