

(5) **Comparing groups**

Health professionals warn that transmission of infectious diseases may occur during the traditional handshake greeting. Two alternative methods of greeting (popularized in sports) are the high five and the fist bump. Researchers compared the hygiene of these alternative greetings in a designed study and reported the results in the American Journal of Infection Control (Aug. 2014). A sterile-gloved hand was dipped into a culture of bacteria, then made contact for three seconds with another sterile-gloved hand via either a handshake, high five, or fist bump. The researchers then counted the number of bacteria present on the second, recipient, gloved hand. This experiment was replicated five times for each contact method. Simulated data (recorded as a percentage relative to the mean of the handshake), based on information provided by the journal article, are provided in the table.

Handshake:	131	74	129	96	92
High five:	44	70	69	43	53
Fist bump:	15	14	21	29	21

- (a) The researchers reported that more bacteria were transferred during a handshake compared with a high five. Use a 95% confidence interval to support this statement statistically.
- (b) The researchers also reported that the fist bump gave a lower transmission of bacteria than the high five. Use a 95% confidence interval to support this statement statistically.
- (c) Based on the results, parts (a) and (b), which greeting method would you recommend as being the most hygienic?

slide 34 from lecture 11, see R - file for results

c) Fist bump