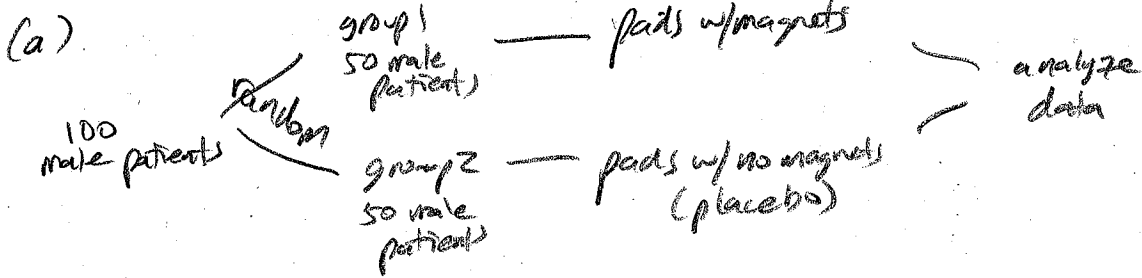
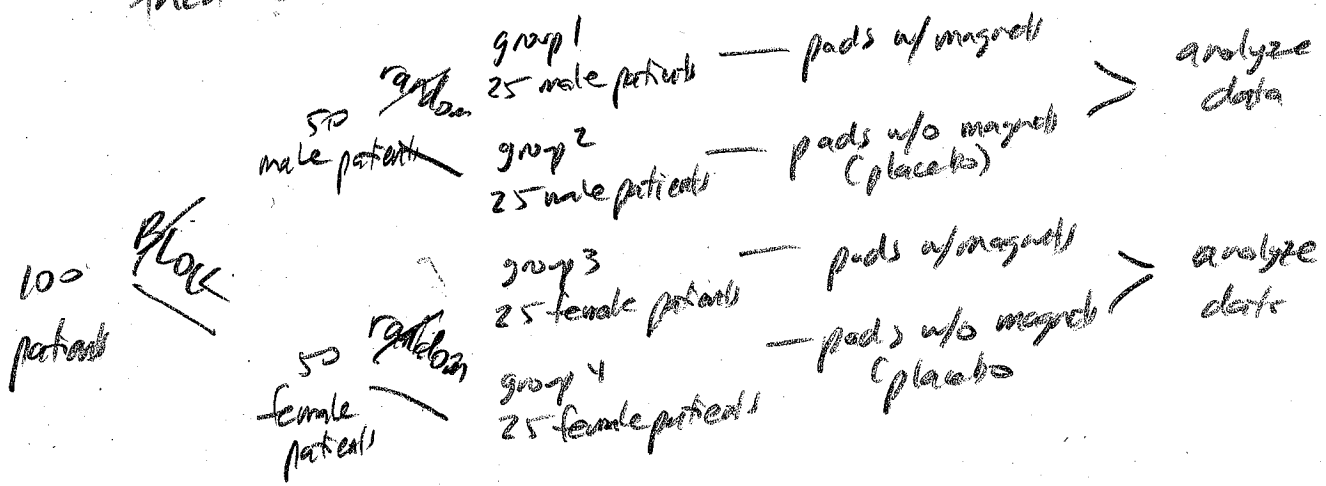


20026Q3



I would conduct a randomized experiment by first using a random process to assign the 100 male patients to 2 groups - for example write the patient's names on identical slips of paper, put the slips in a box and mix well, then draw out 50 slips of paper (one at a time, without replacement) - the patient's whose names are drawn would be placed in group 1, and the other 50 patients in group 2. Group 1 would receive treatment session using pads with magnets and group 2 would receive a placebo consisting of identical pads but with no magnets. Other than the magnet factor, all other factors would be kept as close to the same as possible for all patients. For response variable we would record patient reported pain level before the experiment and after and record how much the pain level improved (reduced) for each patient after treatment.

(b) I would only modify the design if it was felt that gender would affect the response variable (pain level). Let's assume gender did matter, then we would block on gender:



In this version, we would first separate the patients by gender into blocks for male and female. Then the structure within each block would be the same as in part a, except with half the number of patients of one of the genders. We would still do random assignment of patients to two groups within each block (using the paper slip method described in part a, but separately within the 'male' and 'female' blocks), and in each block one group would receive treatment with the magnets and the other group the placebo with no magnets. Data analysis would be done within each block on the reduction in pain level for each patient.

(Note: you could also say "no change" but then you need to specifically explain why you believe that gender will not have an effect on the pain reduction response variable)