Concept of Blocking

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In the problem of confounding, it can occur in two ways,

1. When both the factors that are confounded are treatments(applied by the researchers), now this type of confounding is pretty rare because if someone is applying he will naturally remember to apply all possible combinations.

2. Atleat one of the factors involved happens to be a control factor.In that case we use blocking to avoid confounding.
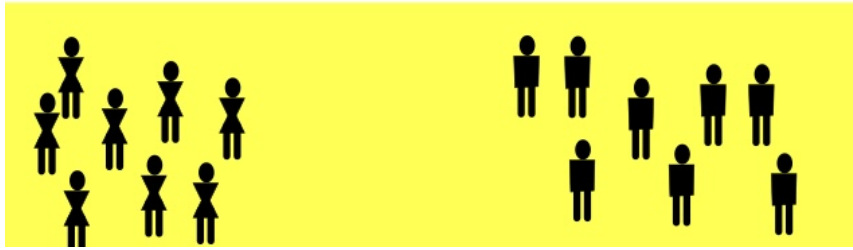
1 Concept of Blocking:

Suppose I have some kind of medicine and I suspect that the effect might be different for men and women, then it is not enough to collect a group of patients of mixture of men and women.

We have to do the experiment separately for the men and separately for the women.So if we just take a collection of patients who are as identical as possible with respect to everything else except their gender and the medicine we are going to apply. Then we take half of them randomly and apply the medicine and apply placebo in the remaining half. This is not a good idea because it might happen that when we did the random allocation most of the medicine and most of the women got placebo. In that we don't know that there is any difference between these two groups whether it was because of gender difference or because of the treatment difference.

So we should split it up into two groups.

Consider the men on one side and consider the women on one side then split these group of men in two roughly equal groups apply the medicine in one group and apply placebo in the other group independently. Do the same operation for the group of women. Now we can really do the comparison. If we can compare placebo men and treatment men then we can see the effect of the medicine in men. If we compare treatment men and treatment women we can get idea of the effect of the medicine on gender.

So if we can't control the factor gender we can create blocks where within a block everyone is homogenious wrt that control factor i.e gender. This is the concept of Blocking.