Imagine that a group of obese children is recruited for a study in which their weight is measured, then they participate for 3 months in a program that encourages them to be more active, and finally their weight is measured again. Explain how each of the following might affect the results:

Regression to the mean:
In this study, if overweight children are recruited through random selection but from a defined population, the conveyance of weight can be normal with some mean and variation. As the examination goes on and more estimations are taken, these perceptions are affected by random variation and measurement errors. In consequence, the children won't have the same weight if measurements were to be taken at different points as the study progresses. The variation will be higher at singular measurements than at group means. To lessen the effect of regression to the mean, selecting the children for the study should be based on several standard measurements.

Spontaneous Remission:
This concept implies that there are unforeseen recuperation or disappearance of symptoms. In this study, it would imply that the overweight children have suddenly achieved their ideal weight goals without any treatment - drop or increase. (Jhangiani, 2019). Posternak and Miller's study on depression had discovered the participants in controlled conditions improved their condition up to 15% without treatment (Posternak & Miller, 2001). In the case of the obese children, it is less likely to experience spontaneous remission with the subjects who are considered to have extreme weight versus the ones who are slightly above the body mass.

History:
According to the research literature, History alludes to the external variables that can occur during the study (Jhangiani, 2019). In other words; changes can be made to the dependent variable.
In reference to our obese study, weight can be credited to the history or outside factors apart from the weight loss program. These outside variables on subjects will affect group weight means. For the most part, and as appropriate to this case, history of the subjects lessens internal validity of the study's results since changes in weight won't due to the program but because of other factors. To prevent this from happening subjects should be asked to refrain from practicing previous weight loss habits to refrain from having inaccurate results for the program.

Maturation:
Maturation refers to the normal changes of subjects over a period of time. This occurrence may cause researchers to question if changes were made due to the exercise program or due to normal development over time. If participants began to adapt healthy eating habits which is a form of maturation, researchers will have to determine if the weight loss occurred because of treatment or the new diet. To safeguard this, it would be ideal to record or interview the participants throughout the 3-month period and record their changes.

References

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