# QUIZ MODULE 4 – CLASS #3

| Question 1<br><br>What is the relationship between sample size and the power of the test? | |
|---|---|
| **Alternatives** | **feedback** |
| **a) Smaller sample size is associated with larger power** | Incorrect – Larger sample size is associated with larger power. |
| **b) Larger sample size is associated with larger power** | Correct – Larger sample size gives a narrower sampling distribution, which means there is less overlap in the two sampling distributions |
| **c) There is no association between sample size and power** | Incorrect – Larger sample size is associated with larger power |

| Question 2<br><br>Which are the parameters used to calculate sample size? | |
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| **Answer** | **feedback** |
| **a) alpha, power and observed effect size** | Incorrect – The parameters are alpha, power and expected effect size, i.e, the estimated effect of the intervention. |
| **b) delta, power and observed effect size** | Incorrect – Delta is a term used to describe the effect size. Sample size is based on alpha, power and expected effect size |
| **c) beta, power and observed effect size** | Incorrect – Beta is the probability of type II error. Sample size is based on alpha, power and expected effect size |
| **d) alpha, power and expected effect size** | Correct – Since the study has not started yet, the researchers do not know the effect size. Consequently, they use the expected effect size, i.e, the estimated effect of the intervention |

| Question 3<br><br>Which of the alternatives below is correct? | |
|---|---|
| **Answer** | **feedback** |
| **a) The greater the expected difference between groups, the larger the required sample size** | Incorrect – The smaller the difference between groups, the larger the required sample size |
| **b) The larger the expected difference between groups, the smaller the required sample size** | Correct – The larger the actual difference between the groups the smaller of a sample the researchers need to find a significant difference |
| **c) There is no relationship between sample size and the difference between groups.** | Incorrect – The larger the expected difference between groups, the smaller the required sample size. |

| Question 4<br><br>Which of the alternatives below is a strategy for selecting the expected effect size? | |
|---|---|
| **Answer** | **feedback** |
| **a) Intention-to-treat** | Incorrect – Intention-to-treat analysis is a method for analyzing results in a prospective randomized study where all participants who are randomized are included in the statistical analysis and analyzed according to the group they were originally assigned, regardless of what treatment (if any) they received.<br>Pilot studies and results of previous studies can be used to select the expected effect size. |
| **b) Pragmatic studies** | Incorrect – Pragmatic studies are designed to evaluate the effectiveness of interventions in real-life routine practice conditions.<br>Pilot studies and results of previous studies can be used to select the expected effect size |
| **c) Previous studies** | Correct – Previous studies from the literature can be used to select the expected effect size during sample size calculation. |
| **d) Post hoc power calculation** | Incorrect – There is no justification for post hoc (i.e, after the study is finished) power calculation.<br>Pilot studies and results of previous studies can be used to select the expected effect size during sample size calculation, a priori (before the study) |