What Is the Intraclass Correlation Coefficient?

Liz Turner:

A commonly used measure that helps us quantify a degree of clustering is this Intraclass Correlation Coefficiency, ICC. The measure really is a measure of the between-cluster outcome variability relative to the overall variability in the system. It essentially ranges between zero and one and a case of zero, no clustering, up to one, where there's complete clustering. It's typically below 0.2 or commonly actually even smaller than that 0.01 to 0.05.

And you may have this thought, well, those values sound very small 0.01 to 0.05. How much of an impact could that really have on study power? And in fact, it really can have an impact on study power. So please don't be lulled into a false sense of security, so to speak, if you see these small values of ICCs.

This involves both between cluster and within cluster variants. This is very important. Clustering is a phenomenon that is about both between and within cluster variants. Now you can see in the case that there's no within cluster variability when that's basically equal to zero, our Intraclass Correlation Coefficient is going to be equal to one. So this involves both between cluster and within cluster variants. This is very important. Clustering is a phenomenon that is about both between and within cluster variants.

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