Abstract

Research Paper: Impact of Number of Groups and Predictors in Dyadic Research: Practical Guidelines

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Dyads, or groups consisting of two people, have been studied previously by only looking at the variables of one partner. Dyadic data analysis, such as through Hierarchical Linear Modeling, allows researchers to look at the characteristics of each individual in a dyad as well as the characteristics of the dyad. Although methodological guidelines for multilevel structures, it is not known how the number of groups, number of level-1 or level-2 predictors, or analysis type affects analyses for dyads. The current study evaluated the number of dyads, predictors, and type of analysis needed to have acceptable power to assist in this sample size planning for dyadic research. Through a Monte Carlo simulation that manipulated the type of variables, number of variables, number of dyads, and type of analysis, it was found for level-1 variables that accounting for multilevel structure yielded more power than ignoring multilevel structure especially when 100 dyads were included in the sample. Additionally, including only level-1 variables or both level-1 and level-2 variables had smaller differences when accounting for multilevel structure, but having both variables led to more power when ignoring multilevel structure compared to including only level-1 variables. For level-2 variables, ignoring multilevel structure led to more power than accounting for multilevel structure except when 200 dyads were

included in the sample. Thus, having more dyads yields higher power but having at least 100 dyads yields acceptable power. This study is the starting point in establishing more specific, nuanced sample size recommendations for dyadic multilevel data.