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Application of multilevel mediation model to nursing study

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Multilevel mediation model has been increasingly applied in many fields, such as prevention, organizational, education studies and health studies. This study will discuss three widely used multilevel medication models (i.e., 1-1-1, 2-1-1, and 2-2-1 models). This study will demonstrate application of the popular 2-1-1 model in nursing study. Data are simulated with three variables: nurse's job satisfaction (level-1 variable M_{ij}), nurse's intention to leave (level-1 outcome Y_{ij}), and hospital work environment (level-2 variable X_j), where the sub-script i represents level-1 (individual) unit and sub-script j represents level-2 (hospital) unit. The hypothesis is that, the effect of the work environment (X_j) on nurse's intention to leave (Y_{ij}) is mediated by nurse's job satisfaction (M_{ij}). However, the level-1 variable M_{ij} could

serve as a mediator for both level-1 and level-2. The study will show how to examine within-cluster, indirect effect, as well as between-cluster indirect effect that is above and beyond the within-cluster indirect effect. In addition, how to control for covariates or confounding factors in the model using residualized score will be discussed.

Speaker Biography

Jichuan Wang has completed his PhD from Cornell University and Post-doctoral studies from the Population Studies Center, University of Michigan. He is a Senior Biostatistician at Children's Research Institute, CNHS. He has published three statistical books and authored/co-authored more than 100 peer-reviewed journal articles. He has been serving as Editorial Board Member of five academic journals.

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