

Multilevel Modelling of Modern Contraceptive Use in Nigeria: Analysis of the 2013 NDHS

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Abstract : Purpose: Evidence exists that family planning use can contribute to reduction in infant and maternal mortality in any country. Despite these benefits, contraceptive use in Nigeria still remains very low, only 10% among married women. Understanding factors that predict contraceptive use is very important in order to improve the situation. In this paper, we analysed data from the 2013 Nigerian Demographic and Health Survey (NDHS) to better understand predictors of contraceptive use in Nigeria. The use of logistics regression and other traditional models in this type of situation is not appropriate as they do not account for social structure influence brought about by the hierarchical nature of the data on response variable. We therefore used multilevel modelling to explore the determinants of contraceptive use in order to account for the significant variation in modern contraceptive use by socio-demographic, and other proximate variables across the different Nigerian states. Method: This data has a two-level hierarchical structure. We considered the data of 26, 403 married women of reproductive age at level 1 and nested them within the 36 states and the Federal Capital Territory, Abuja at level 2. We modelled use of modern contraceptive against demographic variables, being told about FP at health facility, heard of FP on TV, Magazine or radio, husband desire for more children nested within the state. Results: Our results showed that the independent variables in the model were significant predictors of modern contraceptive use. The estimated variance component for the null model, random intercept, and random slope models were significant ($p=0.00$), indicating that the variation in contraceptive use across the Nigerian states is significant, and needs to be accounted for in order to accurately determine the predictors of contraceptive use, hence the data is best fitted by the multilevel model. Only being told about family planning at the health facility and religion have a significant random effect, implying that their predictability of contraceptive use varies across the states. Conclusion and Recommendation: Results showed that providing FP information at the health facility and religion needs to be considered when programming to improve contraceptive use at the state levels.

Keywords : multilevel modelling, family planning, predictors, Nigeria

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