Intracluster Correlation Coefficient in A College-Based Cluster Randomised Controlled Trial

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ABSTRACT

INTRODUCTION: Most of the public health research is conducted at the population level. More study has utilized cluster design in which a group unit is randomized instead of individuals to avoid contamination effect and more practical. However, not many studies publish their Intracluster correlation coefficient (ICC) which is the measure of the relatedness of clustered data. It is important to report the ICC that can be used to calculate effective sample size in future cluster study. Here, we aim to report the ICC from a smoking intervention among young adult. **METHODS:** Based on a college-based quit smoking intervention, a single level model – student nested within colleges was used. There are 10 cluster which is the community college and 16 smokers within each college. The Intracluster correlation coefficients were measured for three outcomes namely motivation to quit smoking, number of cigarette smoke per day and number of quit attempts. The ICC was measured in R studio using ICCbin package. For the binary outcome ICC was measured using variance components from the ANOVA method and Smith confidence limit equation. **RESULTS:** For the proportion of motivation to quit smoking, the ρ (rho) was 0.026 (95%CI: 0.00, 0.11), mean number of quit smoking, $\rho=0.013$ (95%CI: 0.00, 0.08) and mean number of quit attempts, $\rho=0.01$ (95%CI: 0.00, 0.07). **DISCUSSION:** The ρ in this study was small and almost similar to other reported study. The researcher must calculate and report the ICC to enable others to use in future research.

KEYWORDS: Statistics, cluster analysis, research design

Iodine Status and Thyroid Volume Among School Children: Approach in Methodology of Sarawak Iodine Deficiency Disorder Survey 2018

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ABSTRACT

INTRODUCTION: Iodine deficiency disorders (IDD) among Sarawakian school children has been highlighted as substantial public health problem. It has mandated universal salt iodization (USI) implementation in Sarawak started since 2008. This paper describes the approach in methodology of Sarawak IDD Survey 2018 which aimed to determine the current status of IDD among school children in Sarawak after 10 years of USI implementation. Methodology: The IDD survey was a cross-sectional study design. It was conducted between July and September 2018 among school children age 8 to 10 years old, involving all 12 divisions in Sarawak. Multistage proportionate-to-population size sampling technique was applied. First stage was the selection of schools (primary sampling units) and the second stage was the selection of students (secondary sampling units). A total of 1200 school children involved in the study. **RESULTS:** All selected schools participated in the survey, 100% school's response rate. A total of 988 school children participated in the survey with response rates of 82.3%. Conclusion: The present study findings will highlight the impact of mandatory USI towards the iodine level among school children in Sarawak.

KEYWORDS: Iodine deficiency disorders, universal salt iodinization, Sarawak.