Performance of Rural and Urban Adult Participants on Neuropsychological Tests in Zambia

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Abstract : Neuropsychological examination is an important way of formally assessing brain function. While there is so much documentation about the influence that some factors, such as age and education, have on neuropsychological tests (NP), not so much has been done to assess the influence that residency (rural/urban) may have. The specific objectives of this study were to establish if there is a significant difference in mean test scores on NP tests between rural and urban participants and to assess which tests on the Zambia Neurobehavioural Test Battery (ZNTB) are more affected by the participants' residency (rural/urban) and to determine the extent to which education, gender, and age predict test performance on NP tests for rural and urban participants. The participants (324) were drawn from both urban and rural areas of Zambia (Rural = 152 and Urban = 172). However, only 234 participants (Rural = 152 and Urban 82) were used for all the analyses in this particular study. The 234 participants were used as the actual proportion of the rural vs urban population in Zambia was 65% : 35%, respectively (CSO, 2003). The rural-urban ratio for the participants that were captured during the data collection process was 152 : 172, respectively. Thus, all the rural participants (152) were included and 90 of the 172 urban participants were randomly excluded so that the rural/urban ratio reached the desired 65% : 35 % which was the required ideal statistic for appropriate representation of the actual population in Zambia. Data on NP tests were analyzed from 234 participants, rural (N=152) reflecting 65% and urban (N=82) reflecting 35%. T-tests indicated that urban participants had superior performances in all the seven NP test domains, and all the mean differences in all these domains were found to be statistically significant. Residency had a large or moderate effect in five domains, while its effect size was small only in two of the domains. A standard multiple regression revealed that education, age and residency as predictor variables made a significant contribution to variance in performance on various domains of the ZNTB. However, the gender of participants was not a major factor in determining one's performance on neuropsychological tests. This particular report is part of an ongoing, larger, cutting-edge study aimed at formulating the normative data for Zambia with regard to performance on neuropsychological tests. This is necessary for appropriate, effective, and efficient assessment or diagnosis of various neurocognitive and neurobehavioural deficits that a number of people may currently be suffering from. It has been shown in this study that it is vital to make careful analyses of the variables that may be associated with one's performance on neuropsychological tests.
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