NUMBER OF LANGUAGES SPOKEN AND PERFORMANCE ON THE CLINICAL NEUROPSYCHOLOGICAL TEST BATTERY

BY

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A dissertation/thesis submitted in partial fulfilment of the requirements for the Master of Science Degree in Clinical Neuropsychology

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CERTIFICATE

This is to certify that this dissertation entitled **Number of Languages Spoken and Performance on the Clinical Neuropsychological Tests**, has been submitted by Nakawala Mwanza in fulfilment of the requirements for the award of Master of Science Degree in Clinical Neuropsychology programme, and has been conducted under my guidance and supervision.

It embodies the results of the research work done by the candidate and is a record of her personal effort. This work has not been submitted anywhere else nor has formed the basis of the award of any degree.

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ABSTRACT

OBJECTIVES: The general objective of this study was to investigate the relationship between number of languages spoken and performance on the clinical neuropsychological tests. The specific objective was to establish whether greater proficiency in English is related to better performance on the clinical neuropsychological tests.

STUDY DESIGN: This was a cross sectional quantitative study design. Participants were 302, comprising 146 males and 156 females. They were recruited from both rural and urban areas of Zambia with ages ranging from 18 to 65 years. Their formal education ranged from 5 to 13 years or more. The rural sites were Kafue, Chongwe and Chibombo district clinics. The urban participants were recruited from Kalingalinga, University of Zambia, Chilenje, Mtendere and Chelstone clinics. The participants were HIV negative and neurologically intact who could at least speak English language.

MEASURES: Questionnaires assessing experiences of cognitive difficulties in subject's everyday life; any change in employment; and any decrease in the independence with which they performed instrumental activities of daily living as well as the Academic Skills were administered. The language questionnaire and the neuropsychological test battery were subsequently administered.

RESULTS: Participants were grouped according to the number of languages they spoke yielding groups of 2-3, 4-5, and 6 or more languages. Analysis of variance (ANOVA) and correlations were employed to determine whether there was any difference in performance on the tests among the groups. The data was corrected for age and formal education.

Results indicated that there was no statistically significant effect of number of languages spoken on performance on the neuropsychological test domains. This study did not conform to most of the studies that show that individuals speaking more languages are usually outperformed by individuals with fewer languages. One of the fluency domain subtests (the animal category fluency test) however, revealed that number of languages participants spoke was statistically significant at the $p < .01$. Individuals who spoke more languages outperformed those who spoke fewer languages and this, contracted the hypothesis of the present study and the findings by Rosselli et al (2000), Artiola et al (1997) among others who found that individuals with fewer languages outperformed those who spoke many languages on the animal category fluency test. There was also a positive significant relationship between proficiency in English and performance on the fluency domain, $r = .17$, $p < .01$.

CONCLUSION: For a long time, individuals who spoke more languages had been viewed as having a cognitive disadvantage over those who spoke one or fewer languages. However, the present study and a few classical studies such as Mohanty et al (1982) have shown that individuals who spoke more languages outperformed those who spoke fewer languages on the fluency domain tests, thereby going against studies that state that individuals with multiple languages face interference from other languages during testing. Cross language interference may not be present in the present study because English language in Zambia is a medium of formal instruction in which individuals learn terms that cannot be easily and or directly translated in the local languages hence, interference may be less or it may not be present at all.

The implications of the results are analysed, discussed and a conclusion and recommendations are given.

DEDICATION

My sincere dedication goes to my lovely father and mother Mr Abraham "AMPS" Simwanza and Mrs Edna Sikombe Simwanza who have had faith in me through out my education life. I thank you for your tireless effort, encouragement and continued support you have rendered to me. Your virtue of hard work and perseverance will forever remain in me.

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LIST OF ABBREVIATIONS

ACTG... AIDS Clinical Trials Group

ADL... ... Independent Activities of Daily Living Scale

CIDI.. Composite International Diagnostic Interview

E.T.C.. Excetra

FAS.. A test that requires the test taker to produce as
many words as possible

FrSBe... Frontal Systems Behaviour Scale

LEAP-Q.. Language Experience and Proficiency
Questionnaire

PAOFI... Patient's Assessment of Own Functioning
Inventory

SES... Social Economic Status

ZAR.. Zambia Analytical Report