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LATERAL PREFERENCES AND HEMISPHERIC LANGUAGE DOMINANCE IN STUDENTS IN AHMADU BELLO UNIVERSITY ZARIA, NIGERIA

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ABSTRACT

Lateral preference, also known as laterality is defined as the predilection for the use of one side of the body over the other in humans. This study was aimed at investigating the relationship between hand and foot preferences and language dominance, as well as their sex-related differences in both sexes in a Nigerian population. A total number of 1000 apparently healthy adult subjects (548 males and 452 females), and students of Ahmadu Bello University, Zaria were randomly selected and recruited for the study. Hand preference was assessed using the Edinburgh Handedness Inventory questionnaire (EHI) and foot preference with the Waterloo Footedness Questionnaire-Revised (WFQ-R). Language dominance was extrapolated from the established fact of left cerebral hemisphere dominance for several aspects of speech and perception in the majority of the population. The sex-related differences in hand and foot preferences, and the association between foot preferences based on the hand preference were determined using the Chi-square analysis. All statistical analyses were performed with Statistical Product and Service Solutions (SPSS) version 23.0, and the significance level was set at $p < 0.001$. No significant sex-related difference was observed in the hand and foot preferences ($p > 0.001$). There was a statistically significant association between hand and foot preferences in both sexes ($X^2 = 94.81$, $p < 0.001$). Language dominance was also associated with lateral preferences. From this study, it could be concluded that gender may not necessarily affect lateralization, and the extent to which culture and ethnicity affect hand preference may vary from one community to the other, and hence the different incidences of hand and foot preferences that are seen.

Key words: Foot preference, Hand preference, Laterality

INTRODUCTION

Lateral preference, also known as laterality is defined as the predilection for the use of one side of the body over the other in humans. It is a terminology used to allude to the primary use of the right or left cerebral hemisphere in the brain. Studies have shown that several theoretical models have been used by various researchers to explain lateral preference in the population, for example, the genetic theory (McCartney and Hepper 1999; Francks et al. 2007;

McManus et al. 2009), culture and environment (Liederman and Coryell 1981; Lenroot and Giedd 2008; Yoon et al. 2010), ultrasonography (McManus 1993; Salvesen et al. 1993; Kieler et al. 1998), evolutionary (Corballis 1983) and developmental theory (Moffat et al. 1998; Frederikse et al. 1999).

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