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Handedness Among The Igbos Of Southeastern Nigeria

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ABSTRACT

This study investigated the frequency of left-handedness (left hand dominance) among the Igbos of South Eastern Nigeria. It was related to sex and age. Questionnaires, interview and observations were the research instruments used in this study. The study involved 2794 subjects. The frequency of left handedness was found to be 4.72%. Males were found to be more left-handed with increasing age. All these observations were statistically significant.

Keywords: left-handedness, male, female, Igbos.

Human handedness the consistent preference for one hand in skilled manipulative tasks is often said to be a defining trait. Hopkins mentioned that all primates have hand preferences and those preferences follow a clear pattern. In his study (Hopkins 1977) observed that lumurs and other prosimians tend to be left handed, macaques and other old world monkeys are evenly split between lefties and righties. Aming gorillas and chimpanzees, 35 percent are lefties, whiel in humans it hovers around 10 percent.

In some societies, the left side is symbolically associated with ill-fortune and in some societies, cultural pressures for the forced use of the right hand even among "natural left-handers" drastically reduces the visibility of left handedness in census databases (Barsley 1966). Yet there is overwhelming evidence that if such cultural pressures are relaxed, a mutual preference for the left hand in skilled tasks develops in as many as one individual in six (Fleminger et al 1977).

Most people in our society define handedness as the hand one uses for writing (Benoitz, 1996). Within the scientific community the vagueness of this term has led to much debate. For instance, some define handedness as the hand thand performs faster or more precisely on mutual tests (Annett and Kilshaw 1983). While others define it as the hand that one prefers to use regardless of performance (Silvesfein et al 1977). For the purpose of this study the above definitions of handedness were embraced in determining an individual's hand dominance.

The objective of this study is to determine the prevalence of left-handedness among the Igbos of South Eastern Nigeria and its relationship to the gender and ages of the subjects.

MATERIALS AND METHODS

The study was carried out among the Igbos living in the South Eastern part of Nigeria. They are found in the densely populated states of Abia, Anambra, Ebonyi, Enugu and Imo. The study population included individuals between the ages of 7 and 65 years who were Igbos living in the above mentioned states. The two particular age limits were adopted to guard against errors which could result if individuals below the age of seven who might not have developed significant hand dominance or individuals above 65 years whose hand dominance in most cases could not be easily ascertained due to old age, debilitating diseases or other unhealthy conditions associated with old age are surveyed. A random sampling method was used to select the respondents who were issued with questionnaires and were also interviewed and observed. Z-test and X^2 test were used to analyze the data obtained for statistical signficance.

It was observed from the Tables 1 & 2 that in spite of the fact that more women than men were studied, the number of left handed males was higher than that of the females.

Table 1: Classification of the studied individuals based on gender.

Gender	Number	Percentage
Male	1224	44
Female	1570	56
Total	2794	100

Table 2: Classification of left-handed individuals based on gender

Gender	Number	Percentage
Male	88	66.7
Female	44	33.3
Total	132	100

$$\hat{P}_m = \frac{\text{No of left handed males}}{\text{Total no of males studied}} = \frac{88}{1224} = 0.0719$$

$$\hat{P}_f = \frac{\text{Total no of left handed males}}{\text{Total no of females studied}} = \frac{44}{1570} = 0.028$$

$$\hat{P} = \frac{\hat{P}_m + \hat{P}_f}{n_m + n_f} : \frac{132}{2794} = 0.0472$$

$$Z = \frac{\hat{P}_m \quad \hat{P}_f}{\sqrt{P(1-P)\left(\frac{1}{n_m} - \frac{1}{n_f}\right)}} \sqrt{\frac{0.0439}{0.0472 \times 0.953 \times 0.00145}} = 5.433$$

$Z\,0.05 = 1.96 : P < 0.001$

Table 3: Classification of the studied individuals based on age

Age	Number	Percentage
7 – 17	665	23.8
18 – 28	1433	51.3
29 – 39	495	17.7
40 – 65	201	7.2
Total	**2794**	**100**

Table 4: Classification of left handed individuals based on age

Age	Number	Percentage
7 – 17	79	59.85
18 – 28	32	24.24
29 – 39	14	10.01
40 – 65	7	5.30
Total	**132**	**100.0%**

From tables III and IV, it was also observed that the age group 7 – 17 accounted for nearly 60% of all the left handed individuals. There was also a declining prevalence with increase in age. To test the statistical significance of the observed differences X^2 was used.

$$X^2 = \frac{\Sigma (O - E)^2}{E}$$

Group	Observed (O) Proportion	Expected (E) Proportion	$\frac{(O-E)^2}{E}$
7 – 17	0.119	0.0472	0.1092
18 – 28	0.0223	0.0472	0.0131
29 – 39	0.0284	0.0472	0.0075
40 – 65	0.0348	0.0472	0.0033
Total			**0.1331**

X^2 - 0.1331 = 13.31
X^2 - 0.05 = 7.815
$P < 0.01$

Therefore, the difference is highly statistically significant.

DISCUSSION

Hand preference is usually not evident until children are age 4-6 years (Annett, 1964). This is why 7 years was chosen as the minimum age limit for this study. Any child of seven years and above must have naturally developed a particular hand preference if not influenced by parents, guardians or other environmental and social factors. On the other hand a maximum age limit of 65 years was adopted to guard against any possible influence of old age, debilitating or degenerative diseases on the target population if they were above 65 years.

The result of the study showed that 4.72% of the Igbos are left handed. Only 132 out of the 2794 individuals studied were strictly left handed. They prefer using left hand when writing, drawing, throwing, using scissors, using a broom and doing other manual tests. Their left hand performs faster and more precisely. Majority of them acknowledge that they were at one time or the other, advised, persuaded, induced or even forced to change from left to right, but all to no avail. This percentage of 4.72 of left handed persons among the Igbos is slightly lower than the 7.0 which Loven and Parac (1978) used to represent world population of lefties. It is also than the 10% figure put for left handed Americans. And far lower than the 16% recorded by Steels and Mays (1995) for the British.

All disagreements can be accounted for by the cultural background of the Igbos, their uniqueness and exceedingly great disdain for left handedness. Even till date the Igbos condemn and abhor the use of left hand in giving things or reaching others. The left hand is culturally and naturally reserved for execution of "unclean" activities. Naturally left handed individuals who insist on using the left hand after series of chastisements and victimizations were always taken to be stubborn. All these factors helped reduce the prevalence of lefties in the Igbo population.

The frequency of lefties among the men studied was 7.2% while that of the women was 2.8%. This difference was subjected to statistical analysis and found to be highly significant, $P<0.001$. This agrees with the findings of other workers like De-kay (1966). US News & World Report (1993) described the ratio of left handed men to women at about 3:1. All these findings have one fact in common- "Men are more left handed than women".

The Geschwind and Galaburda's (1987) theory which claims that elevated levels of testosterone are responsible for the higher prevalence of left handedness in males may provide a basis for the male to female left handedness dominance ratio recorded in this study.

When the relationship between handedness and age was analyzed, it was found that the frequency is highest in the youngest age group 7 17 years). In this age group it was 11.9% while it hovered between 2% and 3% in the older age groups.

Statistical analysis of the difference with Chi-square (X^2) test showed it to be highly significant. This result agrees with Fleminger et al (1979) which estimated the frequency to be 3% in the 55 - 64 age group compared with 11% in the 15-24 age group. This can be explained by the relaxations in the pressures on left-handed individuals to change to right which was the case some decades past. With this trend it may be expected that in some years to come the prevalence of left handedness among the Igbos may rise to figures comparable to those found in the Western world.

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