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Pattern of earlobe attachment among the Ika ethnic group in Delta State, Nigeria

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Abstract

Objective: The aim of this study is investigating the distribution of earlobe attachment among the Ika ethnic group, in Delta State, Nigeria.

Methods: This cross-sectional study was conducted in Ika speaking communities in Delta State, Nigeria. The sample consists of 384 subjects (192 males and 192 females) and the participants were categorized in accordance of sexual category with age ranges from 18 to 60 years. Data was collected by visual observation and the data obtained was analyzed with the aid of Statistical Package for the Social Sciences (SPSS) Version 21.0. A p-value less than 0.05 was considered as statistically significant.

Results: The males portrayed the highest frequency distribution of attached earlobe while the females showed more of free earlobe. There is no significant gender difference in the pattern of earlobe attachment ($p = .46$). Free earlobe manifested among the 39-48years age range with the highest frequency distribution and the least by age interval within 59years and above. The attached earlobe displayed age differences in distribution with the highest frequency from 49-58 age range and the least by age range 59years and above. There is a remarkable age variation in earlobe attachment ($p = .001$).

Conclusion: The attached earlobe is more predominant than the free or unattached earlobe among the Ikas in Delta State, Nigeria. The association between age and pattern of earlobe attachment is significant and there is no significant gender variation in the pattern of earlobe attachment.

Keywords: Earlobe; Attached; Free; Delta; State; Nigeria

1. Introduction

Keith and Arthur, in 2006 affirmed that earlobe is composed of the tough areola and adipose tissues lacking the firmness and elasticity of the remainder of the pinna [1]. Ordu *et al.*, 2014 explained that earlobe is either directly attached to the lateral side of the head or detached hanging freely, and therefore the detached type is slightly bigger than the attached earlobe. Variation in earlobe attachment may be a trait that is inherited from parents and its inheritance follows a pattern [2]. Lai and Walsh (1966) emphasized that earlobe attachment refers to the way the base of the ear is connected to the upper part. "Free" dominant genes cause the ear to be lobed and therefore the attachment to the upper component is genetically in an upward direction. The recessive "attachment" gene leads to an earlobe with a horizontal attachment to the side of the head [3].

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Shaffer *et al.*, 2017 acknowledged that earlobe attachment is due to genetics and is usually presented as an example of a readily observable Mendelian phenotype in educational materials and continues to be studied as a Mendelian phenotype within contemporary primary literature [4]. Wiener (1937) pointed out that earlobe attachment is likely to be a polygenic trait exhibiting a continuous phenotypic distribution [5].

Literature appraisal disclosed deficiency of information on the distribution of earlobe attachment among the Ika ethnic group, in Delta State, Nigeria. The findings gotten from this assessment will serve as treatment guide for ear, nose and throat surgeons as well as plastic surgeons. Forensic scientists will also be interested in this scrutiny. The endeavor of this research work is to scrutinize the distribution of earlobe attachment among the Ika ethnic group, in Delta State, Nigeria.

2. Material and methods

This study sample consists of 384 subjects (192 males and 192 females) and the participants were categorized in accordance to sexual category with age ranges from 18 to 60 years. Data on earlobe attachment (attached or unattached as described by Powell *et al.*, (1937) were collected by visual observations [6]. Their two-fold classification of earlobe attachment types were followed in the study. People with earlobes that curve up between lower tip of the earlobe and the point where this joins the upper part were considered as having free or unattached earlobes while others with earlobes that blend with the side of the head were noted as having attached earlobes.

Preceding data gathering was ethical authorization sought from the Ethics and Research Team of Anatomy Department at the Delta State University in Abraka, Nigeria. The data obtained was analyzed with the aid of SPSS Version 21.0. Chi squared was employed as a tool to examine age and sexual category variations in the earlobe attachment. A p-value less than 0.05 was considered as statistically imperative.

3. Results

Table 1 Demographic uniqueness of the participators

Age range(years)	Male Frequency	%	Female Frequency	%	p	Chi-square
18-28	23	11.98	15	7.81	0.001	47.82
29-38	44	22.92	47	24.48		
39-48	47	24.48	72	37.50		
49-58	69	35.94	55	28.65		
59 and above	9	4.69	3	1.56		

Table 1 reveals that the age range of 49-58 years has the highest frequency with the least as age range of 59 and above.

Table 2 Distribution of the age and pattern of earlobe attachment

Age range (years)	Free earlobe Frequency	%	Attached ear lobe Frequency	%	p	Chi-square
18-28	14	9.52	24	10.13	0.001	47.82
29-38	53	36.05	38	16.03		
39-48	57	38.76	62	26.16		
49-58	19	12.93	105	44.30		
59 and above	4	2.72	8	3.38		

Table 2 divulges information regarding the age distribution of the free earlobe; and 39-48years age range has the highest frequency and the least frequent age interval is 59years and above. The attached earlobe showed age difference with the highest frequency from 49-58 age range and the least from age range 59years and above. There is a significance age difference in the earlobe attachment (df=4, chi-square=47.82, and p-value =.001).

Table 3 Distribution of the earlobe attachment pattern among gender

Gender	Pattern of Earlobe Attachment				p	Chi-square
	Free earlobe Frequency	%	Attached earlobe Frequency	%		
Male	70	36.5	122	63.5	0.46	
Female	77	40.1	115	59.9		0.54

Table 3 shows the distribution of the earlobe pattern of attachment among gender. Males displayed the highest frequency of attached earlobe while the females had more of free earlobes. There is no significant gender difference in the pattern of earlobe attachment ($df = 1$, $\chi^2 = 0.54$, $p\text{-value} = 0.46$).

4. Discussion

The study aimed to determine the pattern of earlobe attachment among the Ika people in Delta State, Nigeria. The study revealed that the frequency of the attached earlobe (237, 61.72%) was above that of the free or unattached earlobe (147, 38.28%) and this finding is in agreement with the report from Anibor (2016) who stated that Niger Deltans displayed a elevated occurrence of attached earlobes (58.98%) and less recurrence of free earlobes (40.97%) [7]. The index study is also in concordance with Pradhuman *et al.*, (2016), who demonstrated that the attached earlobe is more prevalent than the free or unattached pattern of earlobe (35% free and 65% attached ear lobes) among North East and North West subpopulations of India [8]. Sadia *et al.*, (2015) agree deeply with the present study as they noted that attached earlobe (51.65%) is more prevalent than the free earlobe (48.35%) in Quetta, Pakistan [9]. The present study is not in accord with the report from Ebeye *et al.*, (2014) which stated that the free earlobe is more prevalent than the attached earlobe among the Esan ethnic group in Nigeria [10].

Pertaining to gender distribution this study showed that the male has more of attached earlobe and the female has more of free earlobe, though the gender variation was insignificant which is in agreement with Anibor (2016) who stated that there is no significant gender difference in earlobe attachment [7]. This scrutiny is also in agreement with that of Ebeye *et al.*, (2014) and Anibor *et al.*, (2014) who affirmed that there is no remarkable gender difference in earlobe attachment [10, 11].

The regularity of attached ear lobes recorded in this scrutiny did not correspond with that of Nwaopara *et al.*, (2008) who reported 63.39% for free earlobe and 31.61% for attached earlobe [12]. The index research did not agree with that of Kalia and Gupta (1978) who documented elevated numbers of free earlobes (73.84%) [13]. This investigation did not harmonize with another by Yadav *et al.*, (2000) that documented regularity of free earlobes as a range of 56% to 74% in ethnic factions of Haryana [14]. The current investigation of earlobe attachment varied from that done by Singh and Sengupta in 2004 who researched on the Indians; as they remarked that the rate of recurrence of free earlobe (83.65%) is greater than that of attached earlobe (16.35%) [15].

The studies discussed above had similarities and differences due to racial feature, ethnic set and methodology. The drawback encountered in this study is the self-declared age stated by each participator as no birth certificate was seen.

5. Conclusion

The attached earlobe is more predominant than the free or unattached earlobe among the Ikas in Delta State, Nigeria. The association between age and pattern of earlobe attachment is imperative and there is no significant gender variation in the pattern of earlobe attachment.

Compliance with ethical standards

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Disclosure of conflict of interest

No conflict of interest exists.

Statement of informed consent

Informed consent was obtained from all participants included in the study.

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