

The Distribution of Mid-Digital Hair among the Idoma People of Benue State, Nigeria

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Abstract

Introduction: Hair has accompanied human development since the ancient time as a symbol of power, dominance, and strength. It has been perceived as a thing of beauty and a tool for sexual communication. Over the years, anthropologists have studied the body hair distribution particularly phalangeal hair; this is because it shows variation in relation to race, nationality and ethnic groups. Clinicians have also shown great interest in the study of bodily hairs due to its many useful biological functions, including dispersion of sweat gland products. There are few reports of distribution of mid-digital hair among some tribes in Nigeria but there is paucity of data among the Idoma tribe of Benue State. Hence, this study aimed to investigate and document the frequency of distribution of mid-digital hair among Idoma tribe of Benue State.

Method: The study was community-based, descriptive, and cross-sectional with a sample size of 401. Data was collected using a closed-ended questionnaire that was administered by an interviewer following an examination of the mid-digital hair. **Result:** mid-digital hairs was present in 113 (28.2%) of the participants and absent in 288(71.8%) of the participants. The only significant socio-demographic characteristics among participants were the educational level with 7.754(0.051). **Conclusion:** The study indicated that less than one-third of the participants had mid-digital hair. Furthermore, the mid-digital hair distribution was sexually dimorphic, as it was more prevalent among the males than the females (ratio of 8: 6). The reason for the higher distribution in the males than females could be attributed to the hormonal difference in both genders.

Keywords: Hair distribution, mid-digital hair, Idoma, Nigeria.

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INTRODUCTION

Hair is an elongated keratinized structure that originates from the invagination of epidermal epithelium [1]. It is found basically everywhere in the human body with exception of the soles, palm, lips, glans, penis and parts of the vagina. The hair is a special and cherished feature in humans especially in females. Beyond its aesthetic values, it serves the biological function of thermoregulation, protection of the body from mechanical injury, forensic investigation, sensory reception and plays various subtle roles in social communication [1, 2]. The hair colour, size, and

disposition vary according to race, age, sex, and region of the body [1].

The study of hair distribution has attracted the interest of anthropologist for ages, in particular, is the study of phalangeal hair in relation to gender, ethnicity and race [3, 4]. Various studies on human subjects have shown that the distal phalanges have almost no hair; the proximal ones almost always have hair whereas hairs can occasionally be present on the middle phalanx of the fingers. Distribution of hair on the phalanges may be influenced by certain factors such as gene and environment [5]. The presence of hairs on greater

number of fingers is considered as a dominant character while its complete absence is considered a recessive trait [6, 7].

Mid-digital hair has been a focus of study in different population for the presence or absence. Egesi and Rashid [8] researched on the clinical relevance of mid-digital hair distribution as a putative maker that will inform clinical treatment of people of different ancestry. Their findings suggests that females who have high mid-digital hair count experience less adverse clinical and psychological effects of oral contraceptives therefore a good knowledge about phalangeal hair distribution will help clinicians in tailoring treatment to obtain desired clinical outcome.

The presence or absence of mid-digital hair can be used as a distinguishing characteristic of a people or tribe in anthropology and is also important in establishing geographical and sexual differences. Several literatures on Mid-digital hair distributions are based on researches carried out among people from Europe and Asia with few reports among Nigerians [9-13], of which there is paucity of data among the Idoma tribe of Benue State Nigeria. This study assessed the presence or absence Mid-digital hair distribution on the phalanges of Idoma tribe of Benue State.

MATERIALS AND METHODS

Study Design

The study was community-based, descriptive, and cross-sectional.

Study Area

Otukpo is a town in Benue State, Nigeria, located in the Middle Belt Region of Nigeria. The Idoma tribe is the second largest tribe in Benue State. The people are predominantly Christian, and farming is the major occupation. It has a population of 266,411 people, according to the National Population Commission [14].

Sample Size

The calculated sample size was at least 384; a sample size of 401 was considered adequate for the study as it ensured a normal distribution.

Sampling Technique

The sampling technique for the study was multistage sampling. This was done in two stages: simple random sampling at stage 1; and stratified random sampling at stage 2. At stage 1, a list of all communities in Otukpo LGA was compiled and numbered sequentially, which served as the sampling frame for random sampling. The numbers corresponding to the names were written on small pieces of paper, and the papers were folded to conceal the number. The folded papers were then picked randomly and blindly using a table of random numbers. In each community, the research assistants located the

center of the community and spanned a ballpoint pen, following the direction of the pen to determine the street or compound to begin the sampling. In the street or compound, the houses were numbered sequentially, and a table of random numbers was used to select the first house to be sampled. At stage 2, consecutive sampling was employed to select every odd-numbered house for sampling until the sample size was achieved.

Study Questionnaire

The research instrument was a self-created, closed-ended questionnaire that was adapted for use based on previous research on similar studies. Section A explored socio-demographic factors such as age, educational level, marital status, religion, tribe, and place of residence. Section B examined the presence or absence of mid-digital hair. The questionnaire was pre-tested among 40 volunteers who share similar characteristics with the study population. The number 40 corresponds with 10% of the desired minimum sample size. Modifications and adjustments were made to the procedure and the study instruments in response to the pre-test.

METHODOLOGY

Hand lens was used to view and magnify the mid-digital hairs with all observations carried out in daylight. The presence or absence of Mid-digital hair was recorded for statistical analysis.

Data for the entire study was collected over a period of two months. Two research assistants (both male) were trained to assist with the collection of data, and a data collection plan was drawn to serve as a guide. All participants in the study were assured of strict confidentiality and were not required to provide their names.

Data Analysis

The information obtained from the structured questionnaire was entered and analyzed using the Statistical Package for Social Sciences (SPSS) version 25. Descriptive statistics were carried out on socio-demographic data. The frequencies generated were presented using tables and charts. The chi-square test was used to examine the relationship between variables. A p-value of less than 0.05 was considered significant, and 95% confidence intervals were used as measures to determine the strength of the association.

Ethical Approval

Ethical approval was sought from the Research and Ethics committee of the Federal University of Health Sciences, Otukpo, before the commencement of the study. Written permission to conduct the study was obtained from the respective community CDCs and gatekeepers. A consent form was given to all participants, which they signed after reading the information provided about the nature of the study. The content of the consent form was clearly read out to

participants who could not read in a language best understood by them. Participants were free to opt out of

the study without penalty, and strict confidentiality was assured.

RESULTS

Table 1: Socio-demographic characteristics of participants

Socio-demographic characteristics	Frequency (n)	Per cent (%)
Age category		
18 -32	126	31.2
33 -47	213	53.1
48 -62	59	14.7
63 -77	4	1.0
Total	401	100.0
Gender		
Male	223	55.6
Female	174	43.4
I don't know	4	1.0
Total	401	100.0
Education		
No formal education	81	20.2
Primary education	3	0.7
Secondary education	78	19.5
Tertiary education	239	59.6
Total	401	100.0
Marital status		
Single/Never married	164	40.9
Married/Co-habiting	220	54.9
Divorced/separated	17	4.2
Total	401	100.0
Religion		
Christianity	286	71.3
Islam	73	18.2
Traditional	39	9.7
Others	3	0.7
Total	401	100.0

The most frequent socio-demographic characteristics were age category 33-47yrs with 213(53.1%), male gender with 223(55.6%), Tertiary

education with 239(59.6%), Married/Co-habiting 220(54.9%), and Christianity 286(71.3%).

Table 2: Mid-digital hair distribution

Mid-digital hair	Frequency (n)	Per cent (%)
Present	113	28.2
Absent	288	71.8
Total	401	100.0

The distribution of mid-digital hair amongst the participants was thus: present 113 (28.2%), and Absent 288(71.8%).

Table 3: Comparison of Mid-digital hair distribution with socio-demographic characteristics

Socio-demographic characteristics	Mid-digital hair distribution n(%)			X ² (p-value)
	Present	Absent	Total	
Age category (yrs)				
18 -32	61(15.2)	64(16.0)	126(31.2)	4.697(0.19)
33 -47	116(28.9)	97(24.2)	213(53.1)	
48 -62	24(6.0)	35(8.7)	59(14.7)	
63 -77	3(0.7)	1(0.2)	4(1.0)	
Total	204(50.9)	197(49.1)	401(100.0)	

Socio-demographic characteristics	Mid-digital hair distribution n(%)			X ² (p-value)
	Present	Absent	Total	
Gender				
Male	116(28.9)	107(26.7)	223(55.6)	1.241(0.53)
Female	87(21.7)	87(21.7)	174(43.4)	
I don't know	1(0.2)	3(0.7)	4(1.0)	
Total	204(50.9)	197(49.1)	401(100.0)	
Education				
No formal education	47(11.7)	34(8.5)	81(20.2)	7.754(0.05)
Primary education	0(0.0)	3(0.7)	3(0.7)	
Secondary education	45(11.2)	33(8.2)	78(19.5)	
Tertiary education	112(27.9)	127(31.7)	239(59.6)	
Total	204(50.9)	197(49.1)	401(100.0)	
Marital status				
Single/Never married	78(19.5)	86(21.4)	164(40.9)	2.194(0.33)
Married/Co-habiting	115(28.7)	105(26.2)	220(54.9)	
Divorced/separated	11(2.7)	6(1.5)	17(4.2)	
Total	204(50.9)	197(49.1)	401(100.0)	
Religion				
Christianity	142(35.4)	144(35.9)	286(71.3)	2.316(0.50)
Islam	36(9.0)	37(9.2)	73(18.2)	
Traditional	24(6.0)	15(3.7)	39(9.7)	
Others	2(0.5)	1(0.2)	3(0.7)	

The only significant socio-demographic characteristic was the educational level of participants with 7.754(0.051).

DISCUSSIONS

Summary of Results

The most frequent socio-demographic characteristics were age category 33-47yrs with 213(53.1%), male gender with 223(55.6%), Tertiary education with 239(59.6%), Married/Co-habiting 220(54.9%), and Christianity 286(71.3%). The distribution of mid-digital hair among the participants was thus: present 113(28.2%), and Absent 288(71.8%). The only significant socio-demographic characteristic was the educational level of participants with 7.754(0.051).

Implications of Findings

The results indicated that less than one-third of the participants had mid-digital hair in the general population. Moreover, there was a ratio of 2:5 between participants with mid-digital hair and those who do not have; it was also shown in the general population that 2 in 7 persons had Mid-digital hair. It therefore suggests that if you randomly select seven persons from the Idoma tribe, two out of seven would have mid-digital hair. Furthermore, the mid-digital hair distribution was sexually dimorphic, as it was more prevalent among the males than the females (ratio of 8: 6) as seen in table 3. The reason for the higher distribution in the males than females could be attributed to the hormonal difference in both genders.

The result of this study showed that the absence of mid-digital hair was more dominant among

the Idoma tribe of Benue state compared to its presence. This is a similar finding with the study of Onyiye and Oyibo [13] who examined the hair distribution pattern on the phalanges of the hands among Ogba tribe in Rivers state, Niger Delta region of Nigeria and found that only 12% of the study participant had mid-digital hairs while 88% had none.

Similarly, a study on hair distribution on the phalanges of hand among Kanuris and Baburs/Buras of North eastern Nigeria showed that 25.2% of study participants possessed mid-digital hairs on their hands while 74.8% of participants had none [15].

Again, a study of hair distribution on the phalanges of a sample population of Nigerian Yorubas reported that the absence of mid-digital hair was more prevalent than its presence in the study population and mid digital hair was more common in males than females [16]. This report is also similar to the findings of the present study.

Another study showed variation in the findings among Idoma tribe and the Igbo tribe in Nigeria. Ordu and Ojorbor [17] studied the pattern of mid-digital hair among the Igbo tribe and found that its presence was dominant over its absence in the study population. They also reported that mid-digital hair was more prevalent in males than females as observed in the present study and other literatures.

The findings from the present study further strengthens the report by other researchers that mid-digital hair distribution is sexually dimorphic; being more prevalent among the males than the females.

There could be several reasons for this finding; while it could be attributed to the hormonal difference in both genders, Bernstein and Burke [5] explained that the slightly higher percentage of mid-digital hairs observed in males than females could be because females are constantly engaged in house chores that gradually wore away their mid-digital hair and hair follicles.

CONCLUSIONS

The distribution of mid-digital hair amongst the participants was thus: present 113(28.2%), and absent 288(71.8%). The study showed that 2 in 7 persons of the Idoma tribe has mid-digital hair. It was also observed that mid-digital hair distribution was sexually dimorphic, as it was more prevalent among the males than the females (ratio of 8: 6). The plausible explanation for more absence of mid-digital hair over its presence could be genetic.

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