

The distribution of axial triradii in Bini ethnic group in Southern Nigeria

Abstract

Background: This study was aimed at investigating sexual dimorphism in the axial triradii of the Igbo ethnic group. The study was descriptive cross-sectional in which the volunteers were aged between 18 to 60 years. For the purpose of this study, an individual was considered to be a Nigeria of Bini ethnic origin if the parents and four grandparents were all Bini.

Materials and methods: The purposive sampling method was used for the study. A written informed consent was signed and dated by the proposed respondents prior to the collection of data. A total of 400 subjects (225 males, 175 females) were recruited for the study. The fingerprints were obtained using a print scanner (Hp G3110 Photo scanner).

Results and discussion: The distribution of axial triradii in the Bini ethnic group showed that the males had on the right the t triradii 113(50.2%), t¹ 68(30.2%), t² 44(19.6%) whereas on the left were the following t 111(49.3%), t¹ 68(30.2%) and t² 46(20.5%). The females had the following prevalence of the triradii on the right: t 79(45.1%), t¹ 62(35.4%), t² 34(19.5%) while on the left t was 76(43.4%), t¹ 63(36.0%) and t² 36(20.6%). The total prevalence of the triradii for Bini ethnic group were thus for the right: t 192(48.0%), t¹ 130(30.3%), t² 78(19.5%) while on the left thus t 187(46.8%), t¹ 131(32.8%) and t² 82(20.4%).

Conclusion: The prevalence of the position of the axial triradii of the Bini ethnic group has shown that they high prevalence of position t and least prevalence of t² position. This may serve as a baseline data for the Bini people of Southern Nigeria.

Keywords: distribution, triradii, bini, ethnic group, southern, nigeria

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Introduction

Dermatoglyphics has been richly explored by anthropologist in diverse ways. Triradii distribution amongst a population is one aspect of dermatoglyphics that has also been attributed to have a unique population feature. A triradius is formed by the confluence of three ridge systems at the base of each finger on the palm of the hand. The geometric center of the triradius is designated as the triradial point. Ideally, the triradial point is the meeting point of three ridges that form angles of approximately 120 degrees with another.¹ These triradii are classed based on their position on the palm. Thus, we have the positions as t triradius, when it is located at the base of the palm, t¹ when it is located midway to the centre of the palm and t¹¹ when it is located very close to the centre of the palm (Figure 1).²



Figure 1 Showing the meeting point of the ridges to form a triradius.²

The triradius is recognized by the meeting point of the ridges as shown below

The axial triradius is one parameter that is often used in dermatoglyphics to establish a relationship between individuals, or uniqueness. This implies that siblings, relatives or homogenous tribes will share similarity in expressions of the triradii.³ Hence, the axial triradii was used to study the Bini ethnic group. The Kingdom of Benin (Bini), also known as the Benin (Bini) Kingdom, was a pre-colonial kingdom in what is now southern Nigeria. It is not to be confused with Benin, the post-colonial nation state. The Kingdom of Benin's capital was Edo, now known as Benin City in Edo state. The Benin Kingdom was "one of the oldest and most highly developed states in the coastal hinterland of West Africa, dating perhaps to the eleventh century CE",⁴ until it was annexed by the British Empire in 1897. According to oral history, the original people and founders of the Benin Kingdom, the Edo people, were initially ruled by the Ogiso (Kings of the Sky) who called their land Igodomigodo. The first Ogiso (Ogiso Igodo), wielded much influence and gained popularity as a good ruler. He died after a long reign and was succeeded by Ere, his eldest son. In the 12th century, a great palace intrigue erupted and crown prince Ekaladerhan, the only son of the last Ogiso, was sentenced to death as a result of the first queen (who was barren) deliberately changing an oracle's message to the Ogiso. In carrying out the royal order that he be killed, the palace messengers had mercy and set the prince free at Ughoton near Benin. When his father the Ogiso died, the Ogiso dynasty officially ended. The people and royal kingmakers preferred their late king's son as the next to rule.

The exiled Prince Ekaladerhan had by this time changed his name to Izoduwa (meaning 'I have chosen the path of prosperity') and found his way to Ile-Ife. It was during this period of confusion in Benin that the elders, led by Chief Oliha, mounted a search for the banished Prince Ekaladerhan-whom the Ife people now called Oduduwa. Oduduwa, who could not return due to his advanced age, granted them Oranmiyan, his grandson, to rule over them. Oranmiyan was resisted by Ogiamien Irebor, one of the palace chiefs, and took up his abode in the palace built for him at Usama by the elders (now a coronation shrine). Soon after his arrival, he married a beautiful lady, Erinmwinde, daughter of Ogie-Egor, the ninth Enogie of Egor, by whom he had a son. After residing there for some years he called a meeting of the people and renounced his office, remarking in vexation Ile-Ibinu ("ile" means land, "binu" mean anger, and thus the kingdom was called Ibinu, which was mispronounced Bini in the 15th and 16th centuries by the Portuguese). This was out of frustration as he often expressed that "only a child born, trained and educated in the arts and mysteries of the land could reign over the people". He arranged for his son born to him by Erinmwinde, Eweka, to be made king in his place, and returned to Yorubaland thereafter. His son the new king was soon found to be deaf and dumb, and so the elders appealed to Oranmiyan. He gave them charmed seeds known as "omo ayo" to play with, saying that to do so will make him talk. The little Eweka played with the seeds with his peers at Egor, his mother's hometown. While playing with the seeds, he announced "Owomika" as his royal name. Thus, he gave rise to the tradition of the subsequent Obas of Benin spending seven days and nights at Usama before proceeding to announce their royal names at Egor. Eweka thus started a dynasty that now bears his name. Oranmiyan went on to serve as the founder of the Oyo Empire, where he ruled as the first Alaafin of Oyo. His descendants now rule in Ile Ife, Oyo and Benin.

By the 15th century, Benin had expanded into a thriving city-state. The twelfth Oba in the line, Oba Ewuare the Great (1440–1473) would expand the city-state's territories to surrounding regions. It was not until the 15th century, during the reign of Oba Ewuare the Great, that the kingdom's administrative centre, the city of Ubinu (or Ibinu), began to be known as Benin City by the Portuguese, a pronunciation later adopted by the locals as well. The Portuguese would write this down as Benin City. Edo's neighbours, such as the Itsekiris and the Urhobos, continued to refer to the city as Ubini up until the late 19th century. Aside from Benin City, the system of rule of the Oba in the empire, even though the golden age of the kingdom, was still loosely based upon the Ogiso dynasty's tradition, which was military protection in exchange for pledged allegiance and taxes paid to the royal administrative centre. The language and culture was not enforced, as the empire remained heterogeneous and localized according to each group within the kingdom, though a local enogie (or duke) was often appointed by the Oba for specific ethnic areas.

Majority of the Ikwerre settlements have their roots traceable from the old Benin Empire." Iwhnuṛoḥna people descended from the ancient Bini Kingdom. The name of the grand ancestor is Akalaka. Their relations in Rivers State are Ekpeye and Ogba people. The reigning Oba of Benin when Akalaka, the ancestor of Iḥruoḥa (later called Iwhnuṛoḥna) fled was Oba Ewuare (Ogwaro). Akalaka, a member of the Benin royal family, fled in the 13th century on allegation of plotting assassination of the Oba. He died in 1462. Iwhnuṛoḥna his third son settled east of the Sombrero River by 1538 AD.⁵ Till this day, the Ikwerre people are making effort to trace their ancestry and show with evidence that they migrated from the old Bini ethnic group which appears to be true following similarity in their believes and traditions.

The Bini people are closely related to other ethnic groups that speak Edo languages, such as the Esan, the Afemai and the Owan. They have been estimated to have a population of 2.208.700 million.^{6,7} The Bini people are known to be farmers and traders.^{8,9} There are some

reports on investigations done by other researchers on the positions of the axial triradii.¹⁰ There is dearth of information on the position of the axial triradii in the Bini ethnic group a such this study was done. It was aimed at investigating the distribution of axial triradii in the Bini ethnic group to know whether they have a pattern of distribution that is peculiar to them. This study will benefit the body of knowledge on population studies of ethnic groups in Nigeria which will be significant to historians, sociologists, anthropologists, and the Bini people in particular. The study was done specifically on the palmar surface of the hand.^{11–15}

Methods

The study was descriptive and cross-sectional. For the purpose of this study, an individual was considered to be a Nigerian of the Bini ethnic group if the parents and four grandparents were Bini. Volunteers with age ranging from 18-60 years from the Bini extractions were recruited for this study using purposive sampling. The study was conducted from March 6 - October 20, 2019. A written informed consent was signed and dated by the proposed respondents prior to the collection of data. A brief self-administered questionnaire on the age, sex, ethnicity of the parents and grandparents was completed by the respondents. In the case of illiterate respondents, the questionnaire was administered by the researcher. A total of 400 (225 male and 175 female) volunteers were recruited for the study. The fingerprints were obtained using a print scanner (Hp G3110 Photo scanner) as was used by Paul et al.⁹ Only subjects whose four grandparents were Bini were admitted into the study. Participants with anatomical abnormalities of the hands or whose prints were blurry were excluded from the study. Before commencement of the study, ethical clearance was obtained from the Research Ethics Committee of the University of Port Harcourt with REC Number: UPH/CEREMAD/REC/MM59/036. Statistical analysis was done using descriptive statistical tool in SPSS version 21 with the results presented in percentages (Figure 2–4B).^{15–20}



Figure 2 t position of the triradius (zoomed) from the study.

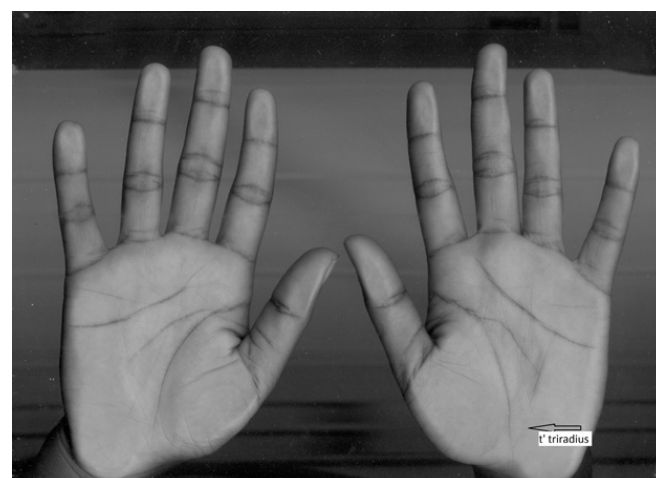


Figure 3A t^l position of the triradius from the study.

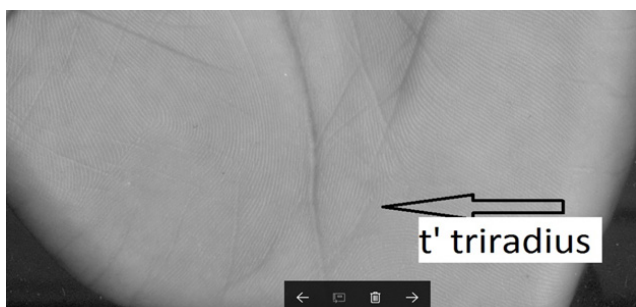


Figure 3B t¹ position of the triradius (zoomed) from the study.



Figure 4A t¹ position of the triradius from the study.

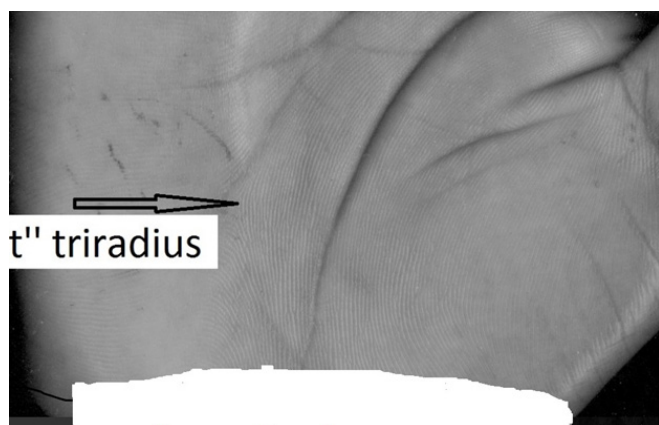


Figure 4b t¹¹ position of the triradius (zoomed) from the study.

Results

In Table 1 the following were the prevalence of axial triradii of the Bini ethnic group. The males had on the right the t triradii 113(50.2%), t¹ 68(30.2%), t² 44(19.6%) whereas on the left were the following t 111(49.3%), t¹ 68(30.2%) and t² 46(20.5%). The females had the following prevalence of the triradii on the right: t 79(45.1%), t¹ 62(35.4%), t² 34(19.5%) while on the left t was 76(43.4%), t¹ 63(36.0%) and t² 36(20.6%). The total prevalence of the triradii for Bini ethnic group were thus for the right: t 192(48.0%), t¹ 130(30.3%), t² 78(19.5%) while on the left thus t 187(46.8%), t¹ 131(32.8%) and t² 82(20.4%).

Table 1 Prevalence of axial triradii in Bini ethnic group

Parameters	Right			Left		
	t	t¹	t²	t	t¹	t²
Males (n=225)	113 (50.2)	68 (30.2)	44 (19.6)	111 (49.3)	68 (30.2)	46 (20.5)

Table Continues...

Parameters	Right			Left		
	t	t¹	t²	t	t¹	t²
Females (n=175)	79 (45.1)	62 (35.4)	34 (19.5)	76 (43.4)	63 (36.0)	36 (20.6)
Total (n=400)	192 (48.0)	130 (30.3)	78 (19.5)	187 (46.8)	131 (32.8)	82 (20.4)

Discussion

The position of the axial triradii showed that the t-position was most prevalent while t² position was the least prevalent. The result seen in the distribution is probably genetic. The gene that codes for the structural arrangement of the triradius may have had different impact on the palm with respect to the position which in turn resulted in difference in distribution. The beautiful part of this whole process is that it happens at very early stage in life and would remain thus all through life. The unique pattern of presentation of the triradius differ in different populations but similar amongst populations with genetic affinity. It therefore means that populations, groups or nations that have history of common ancestry would generally be similar in the presentation of patterns. The results of present study agree with the findings of Paul et al.^{3,10} and Badiyea et al.¹¹ where they reported the distribution of the triradii with the males having a higher prevalence of both t, t¹ while the least prevalent position was t¹¹.

Conclusion

The prevalence of the position of the axial triradii of the Bini ethnic group has shown that they high prevalence of position t and least prevalence of t² position. This indicated a unique pattern of distribution in them which could serve as a baseline data for the Bini people of Southern Nigeria. Again, it could be inferred that since the Bini people have this pattern, the ethnic groups that have been said to have ancestral origin from the Bini may have similar distribution of axial triradii since it has genetic undertone.

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Conflicts of interest

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Author's contribution

We write to state that all authors have contributed significantly, and that all authors are in agreement with the contents of the manuscript. 'Authors A' (John Nwolim Paul) designed the study and protocol, wrote the first draft of the manuscript; 'Authors B' (Chibuiki Obiandu) 'reviewed the design, protocol; 'Author C' (Oja-Alumehe Favour Erezih and Deborah Abosede Akinola) examined the intellectual content of the manuscript. All authors read and approved the final manuscript.

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