only according to age, sex and ethnicity but also within the same race in different geographic regions and within the inhabitant of the similar geographical area [8]. Significance differences have shown that this foramen differs among individuals and thus useful in gender prediction of an unknown person. Hence studying MF divisibility in different ethnicity and its potential usefulness in sex prediction is worthy of note [9]. This study intend to assess the differences that exists between the MF of males and females and its usefulness in predicting gender among the Urhobo people of Southern Nigeria.

Materials and Methods

The study was retrospective in design, following ethical approval from the research and ethics committee of human anatomy department and ethical approval from university teaching hospital, Oghara, Delta state. One hundred and forty five radiographs were available, out of which 110 radiographs (55 radiographs for males and 55 for female) showing the foramen met the criteria and were adapted.

Inclusioncriteria

- Available radiographs indicating age above 20 years.
- High quality radiograph.

Exclusion criteria

- Radiographs with malignancies.
- Unidentifiable foramen.

Method of data collection

Measurement was achieved using computed radiographic films showing the foramen clearly. Quantitative data were collected from the mandible showing the foramen as it was measured (left side only). Lines were drawn through the upper and lower limits of the foramen and opposite line drawn from the tangents to the lower limit of the mandible utilizing Photoshop. Data was analyzed using unpaired t-test. Comparison was achieved on both sexes as P value was fixed at 0.05. P-values less than 0.05 were considered statistically significant (Figures 1 and 2).

Figure 1: Showing lateral view of MF.

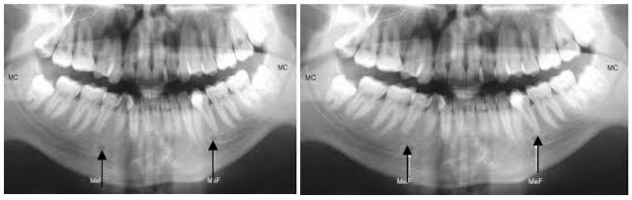

Figure 2: Showing the distance between upper and lower border of mf to lower border of the mandible.

Results

Table 1 Revealed significant gender difference. Males showed higher mean ± standard deviation in the distance measured from the upper border of the MF to the lower border of the mandible.

Table 1: Distance between upper limit of the MF to lower limit of the mandible (UF-L) between genders.

Gender	Mean ± SD (mm)	Standard Mean Error (mm)	T-test value	P-value
Male	14.63 ± 2.59	0.35	2.1	0.04
Female	13.60 ± 2.57	0.35		

Table 2 showed significant gender difference. Males showed higher mean ± standard deviation in the distance measured from the lower border of the MF to the lower border of the mandible.

Table 2: Distance between lower limit of the MF to lower limit of the mandible (LF-L) between genders.

Gender	Mean ± SD (mm)	Standard Mean Error (mm)	T-test value	P-value
Male	11.78 ± 2.41	0.32	2.69	0.01
Female	10.58 ± 2.31	0.31		

Discussion

Radiographic assessment of MF is useful in predicting gender as it plays an extremely useful role in identification [10]. Additionally, the MF has been reported to differ in location in diverse ethnic groups as well as gender wise [11]. From this study, UF-L were higher in males than in females. The finding is in harmony with the work of Al-Khateeb et al., who demonstrated critical contrasts in position and distance of MF in males and females, with males having higher measurements. Another study by Kusum and Sapna also supported the findings observed in this present study and expressed thatin all their linear measurements, males had higher measurements than females. A similar trend was also observed by Yosue et al., and Cagri et al., who showed that there are significant differences in location of MF between genders [12,13]. The observed high values in males may be attributed with the fact that in the adult phase, the rate and speed of bone growth are higher in men, so craniofacial dimensions in this gender are from 5% to 9% bigger relative to those of women. Longer length in males may be attributed to the fact that males enter puberty at a later year than females [14-17].

Conclusion

Also, our study reveals a significant variation in the inferior MF to lower border of the mandible (LF-L), hence shows higher values in males relative to females. The finding from this current study agrees with prior studies who reported that values of UF-Land LF-L were significantly high up in males.

On the whole, the study showed definite sexual contrasts in dimensions of MF. Longer lengths of parameters measured often indicate males.

Conflicts of Interests

Nil

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