

# Panoramic Radiographic study of Mental Foramen in South Indian population

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## Introduction

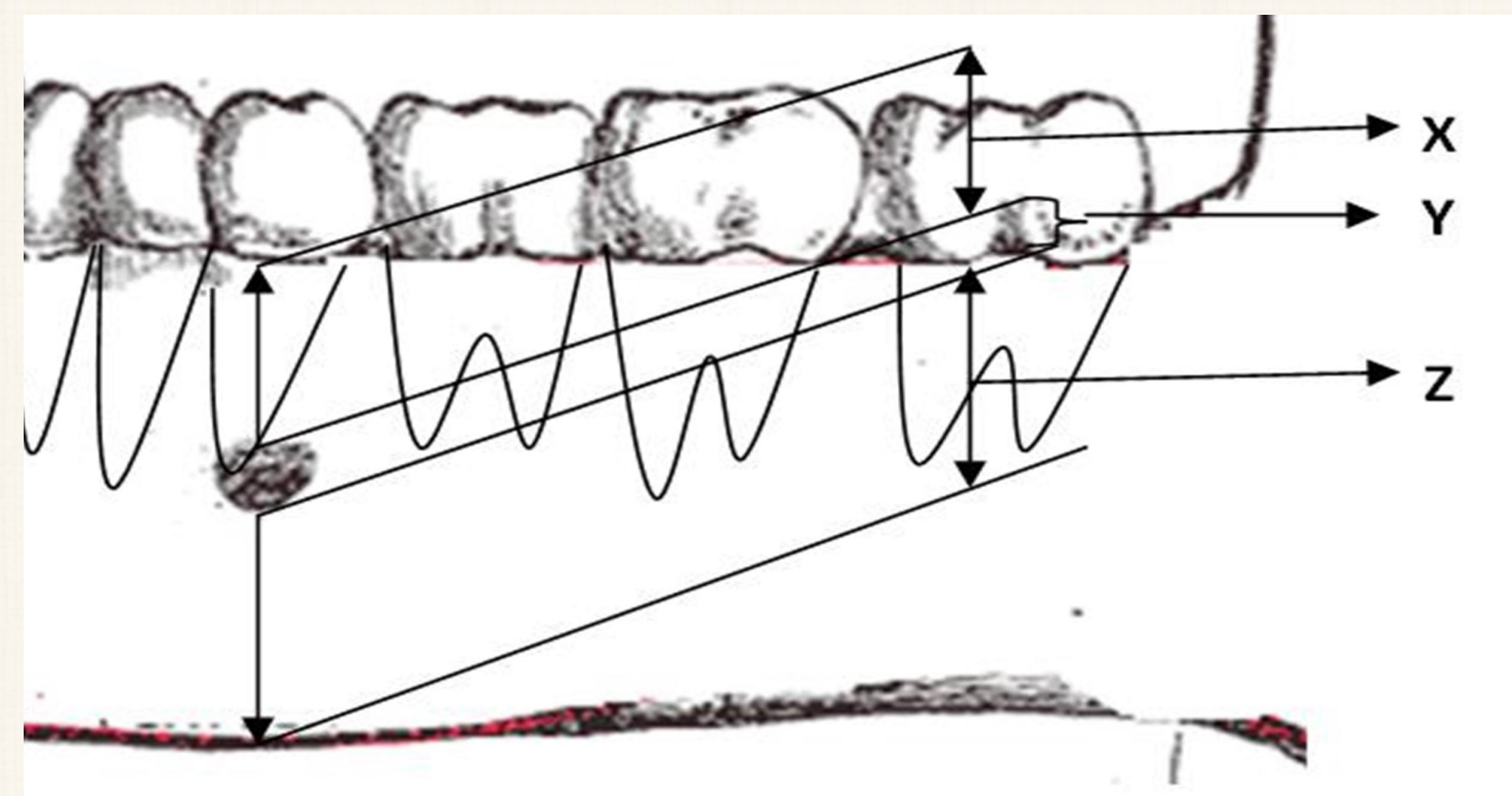
- The accurate identification of location of Mental Foramen(MF) is important for both diagnostic and clinical procedures.
- The mental bundle could be traumatized during periapical/orthognathic surgeries/implant placement resulting in paresthesia or anesthesia.
- The MF has been reported to vary in its appearance, size and locations in different population groups.<sup>1-12</sup>
- With a thorough literature search and to the best of our knowledge, till date, there has been no such study representing the Dravidian group of people in South India.

## Objectives

- To document radiographic information on appearance, size, horizontal and vertical locations of MF among the Dravidian ethnic group.
- To determine the relationship of age and gender with the radiographic appearance and location.

## Methodology

- 1662 Panoramic radiographs were randomly selected from the de-identified register (during 2 year period) held at Manipal Hospital, India and retrospectively evaluated and examined for eligibility against selection criteria (245 fulfilled the inclusion criteria).
- Patients aged from 19-60 were divided into 2 groups - Group A(19-40 years) and Group B(41-60 years). Radiographs were those of 156 males and 89 females.
- Each radiograph was traced on a tracing paper to record the horizontal location, vertical locations and size of MF.
- The **appearance of MF** was determined by visual examination and was classified as any one of the four different types<sup>9,10</sup>: Continuous, Separated, Diffuse and Unidentified type.
- The **horizontal location** in relation to the apices of the teeth were categorized<sup>11</sup> as - Anterior to 1<sup>st</sup> PM, In line with 1<sup>st</sup> PM, Between 1<sup>st</sup> and 2<sup>nd</sup> PM, In line with 2<sup>nd</sup> PM, Between 2<sup>nd</sup> PM and 1<sup>st</sup> Molar, In line with 1<sup>st</sup> molar.
- The **vertical location** was estimated<sup>9,10</sup> as shown in the figure below. The ratio of x:z gave the relative vertical field of the foramen.



- Size** of each MF was recorded in mm both in horizontal and vertical direction using digital caliper.
- The Intraclass correlation coefficient and Kappa statistics for the inter and intra examiner reliability were 0.82 and 0.95 respectively.
- Chi-square and t-test were employed. The level of two-sided significance was set at 5%.

## Conclusions

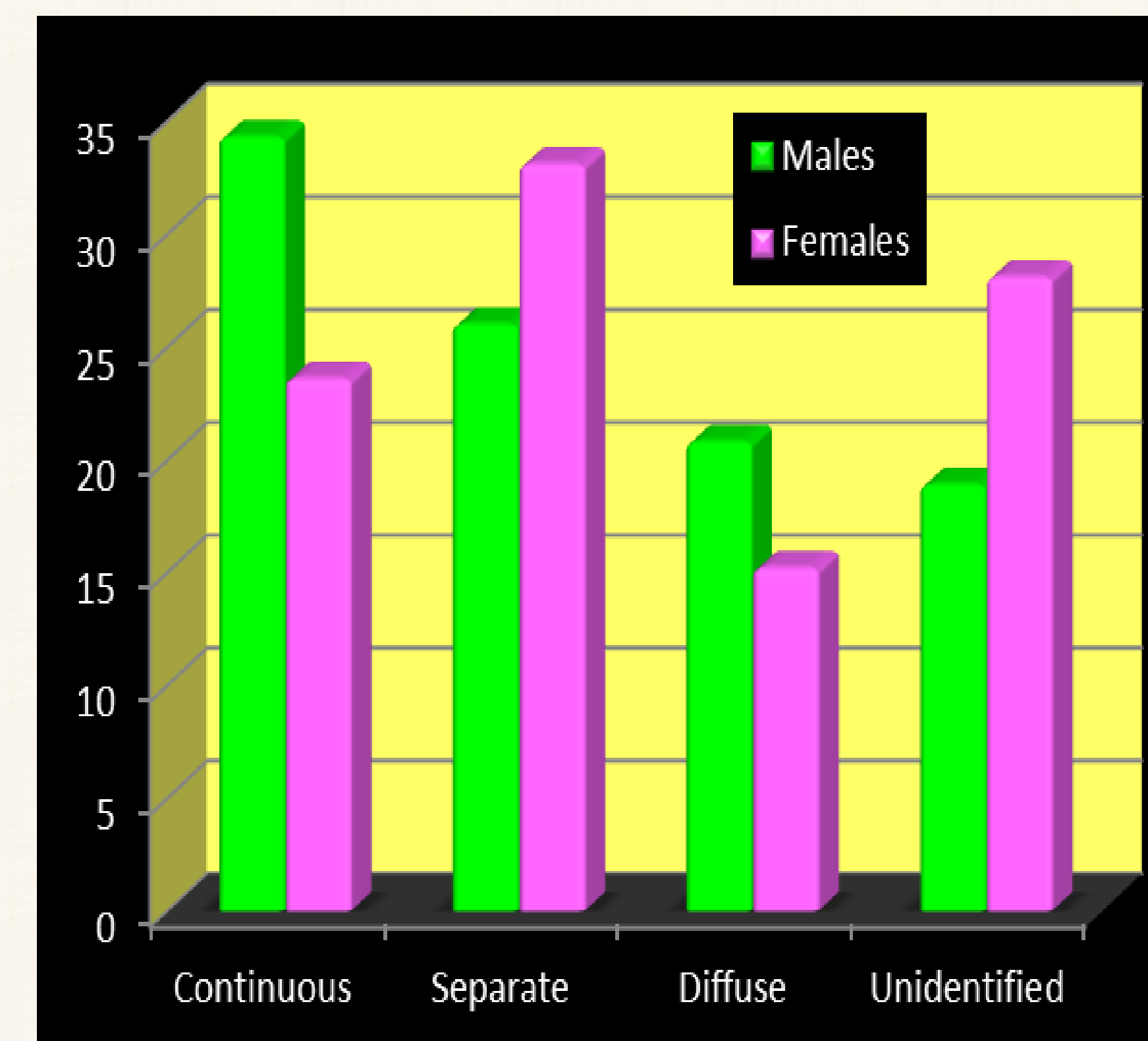
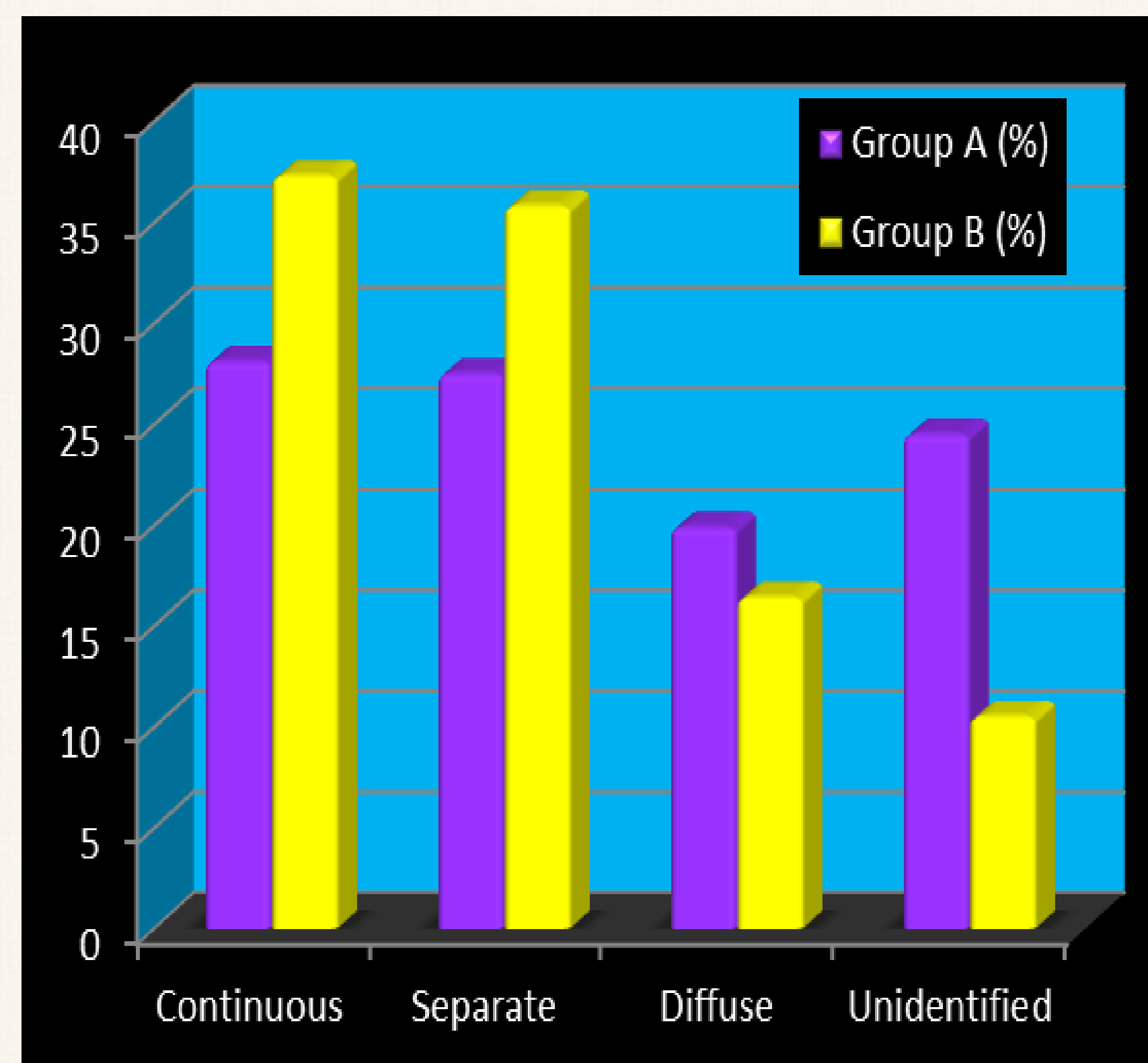
- The results of our study supports few<sup>2,5,6,7,8</sup> (but not all) previous studies in special regard to the locations of MF, which clearly indicates that it has positional variations in different population groups.
- These findings can be used as reference material by the dental practitioners of South India while performing clinical procedures that involve MF.

### References

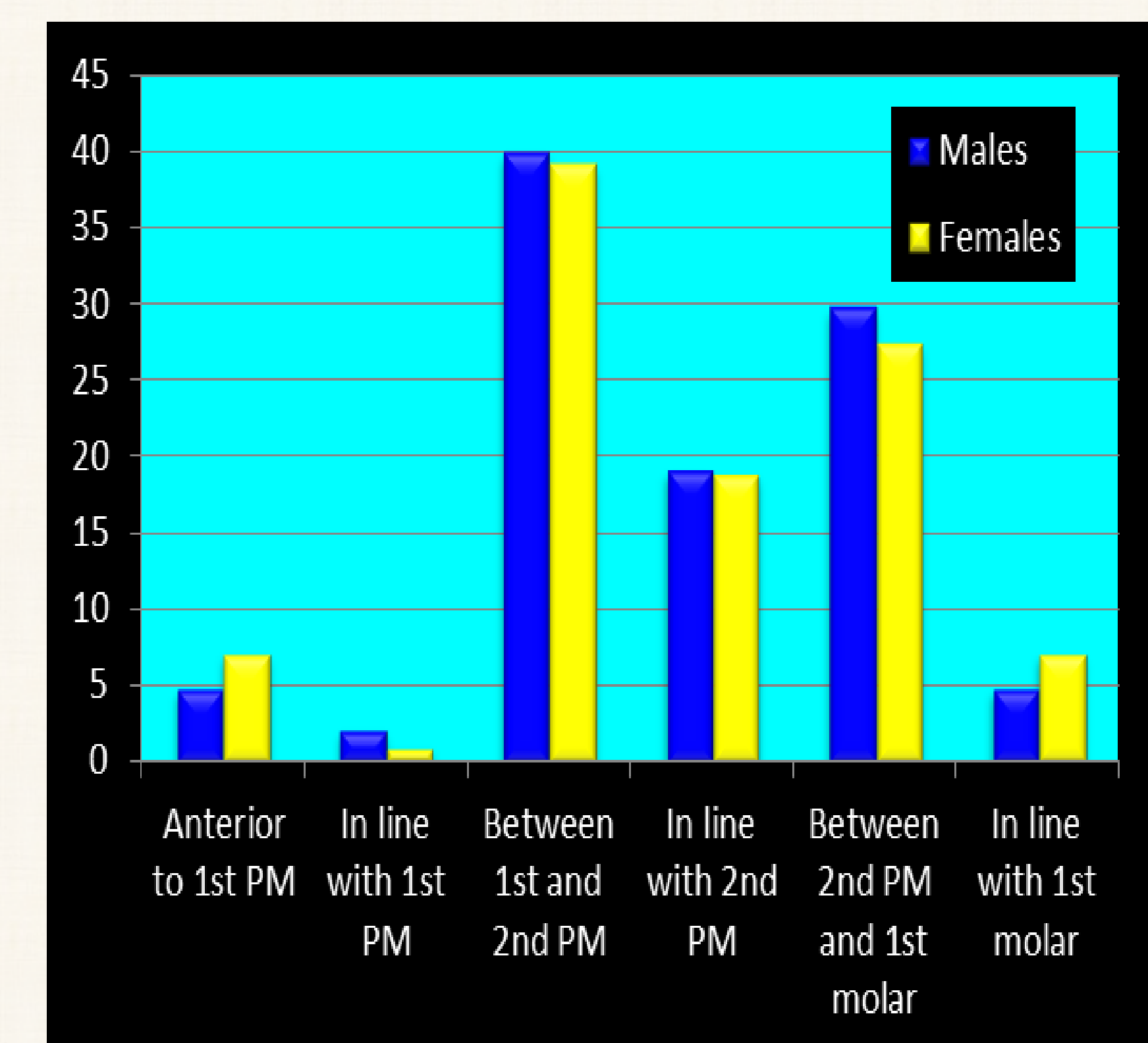
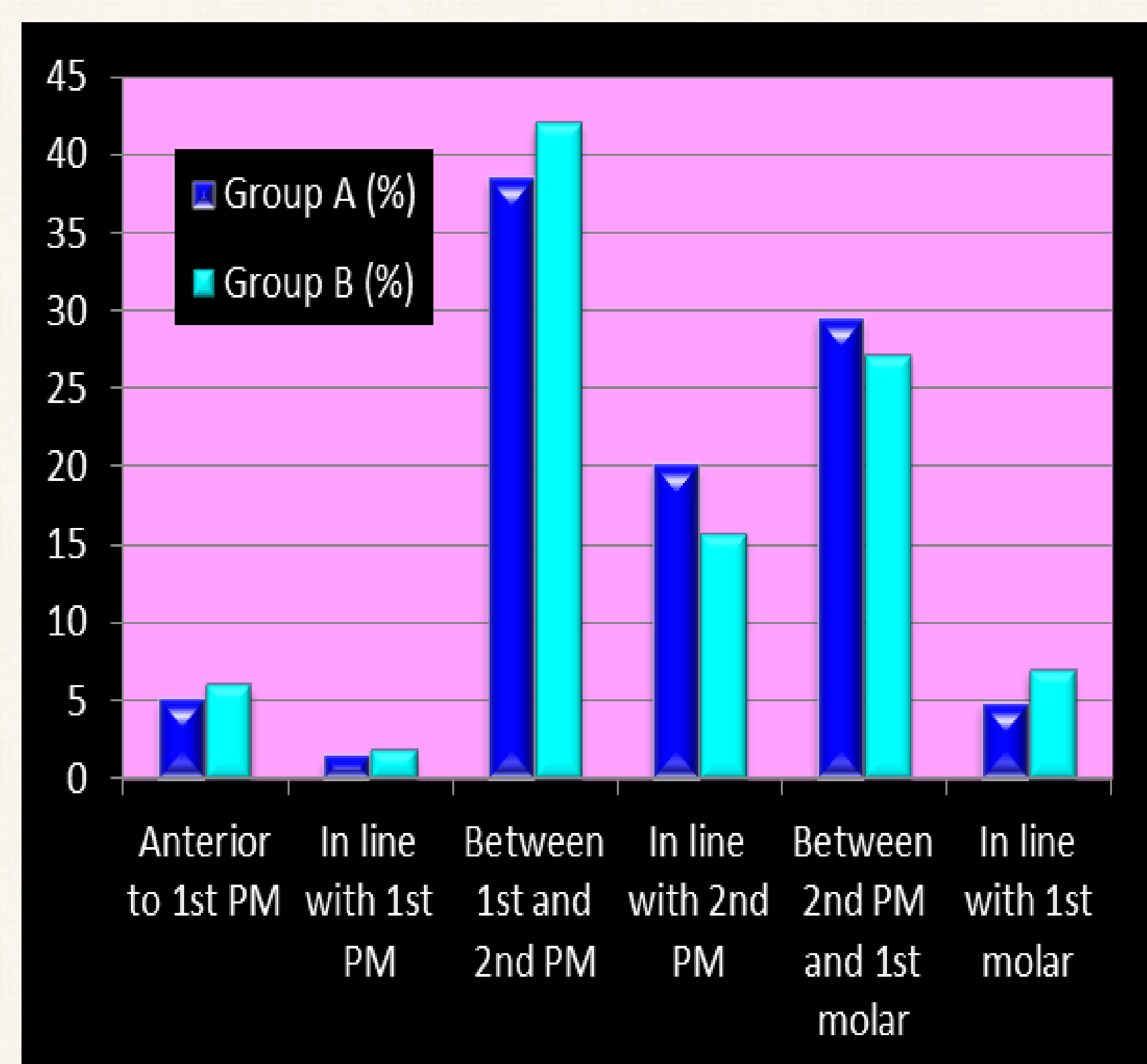
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## Results

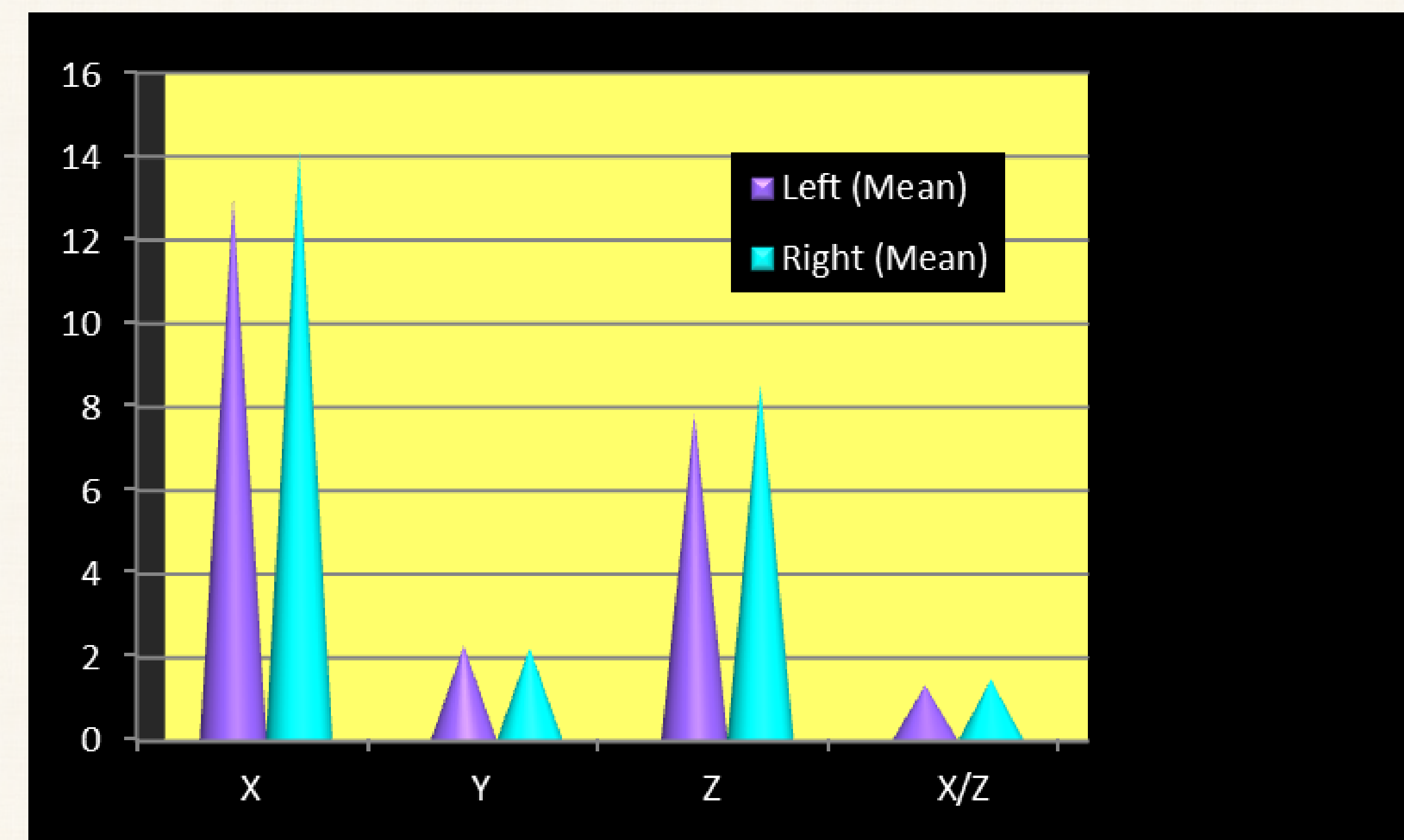
### Appearance of MF in age groups(p=0.0004) and gender(p=0.006)



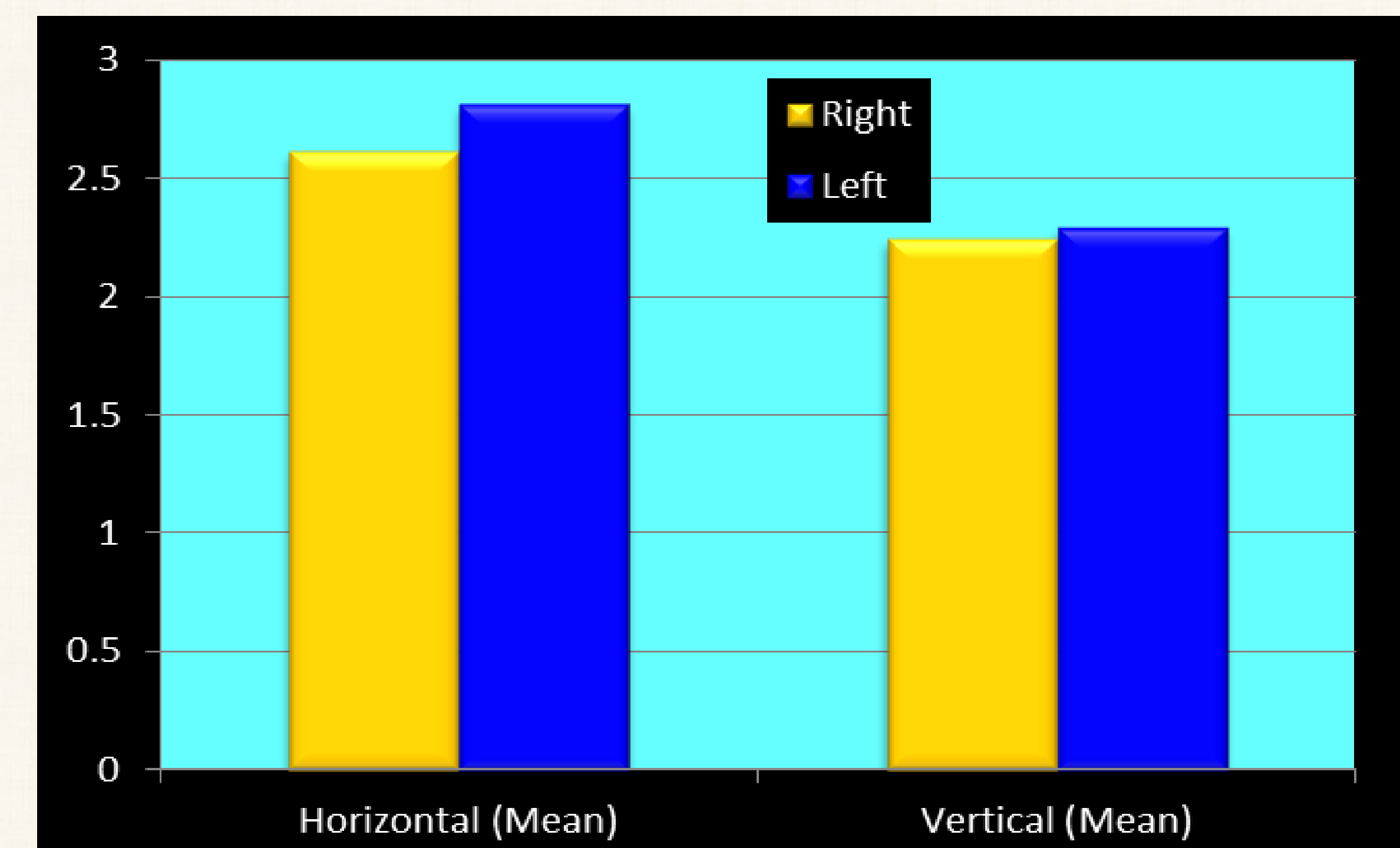
### Horizontal location of MF in age groups(p=0.841) and gender (p=0.768)



### Vertical location of MF on right and left sides(p=0.17)



### Dimensions(mm) of MF on right and left sides(p=0.74)



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