The relationship between skeletal configuration and soft tissue change after bracket debonding

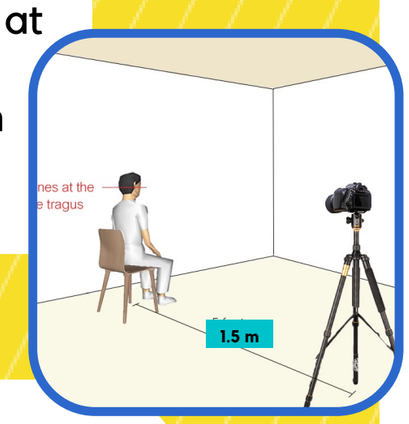
มหาวิทยาลัยรังสิต
RANGSIT UNIVERSITY

BACKGROUND

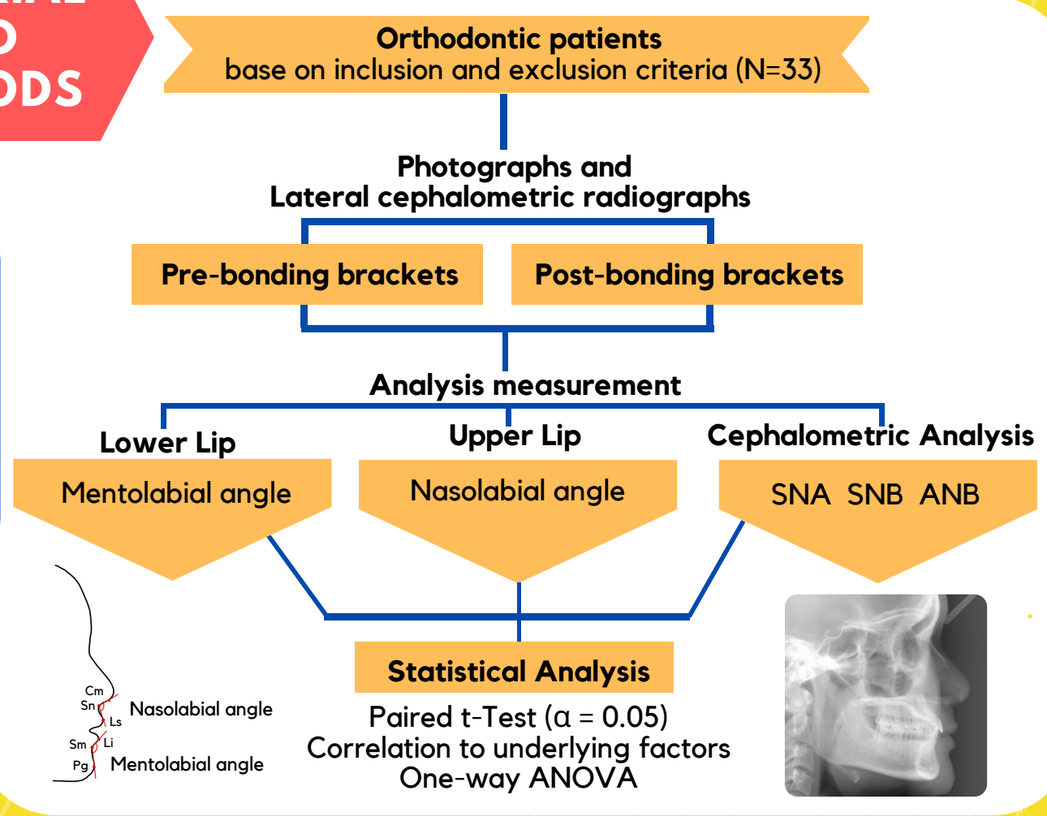
Nowadays, orthodontic treatment seeks to restore not only occlusal function but also esthetics by improving facial appearance. Labial orthodontic appliance creates an impact on lip profile. Various factors have been previously evaluated such as gender, lip thickness, etc. However, the skeletal configurations which support soft tissue profile has not previously examined whether it has an impact on the change of soft tissue profile before and after debonding labial orthodontic appliance.

OBJECTIVE

1. To evaluate the effect of bonded orthodontic brackets on soft tissue change at debonding stage
2. To determine the correlation between the change in soft tissue profile and skeletal configuration



MATERIAL AND METHODS



RESULT

The results from paired T-test showed that the nasolabial angle increased by 0.333 degree (p=0.694), whereas the mentolabial angle increased by 2.09 degree (p=0.046) from the pre-debonding angle. This means that the upper lip and lower lip profiles flattened when compared with nose. The mean difference in change of mentolabial angle showed statistical significance.

The result of Pearson's Correlation between soft tissue changes and underlying skeletal configurations showed that there was no statistically significant difference. Examination of this research revealed that most results tend to show weak correlation except SNB (p=0.982), which was strong correlation when compared with the change in mentolabial angle. However, there was no statistically significance for all examination.

By using one-way ANOVA, the skeletal configurations which were classified into various types, showing no statistically significant difference to mean difference nasolabial angle (p=0.703) and mean difference mentolabial angle (p=0.153).

DISCUSSION

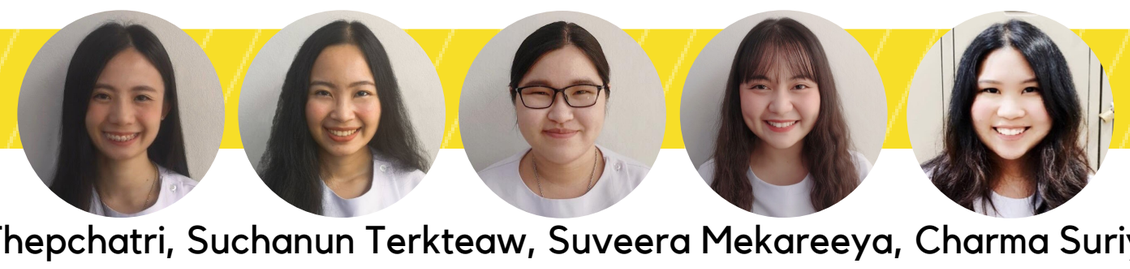
There have been previous studies of changes in the nasolabial angle and the mentolabial angle with the same statistical results as our research. In our research, we use photograph to measure various values, we think it can be used and it's a way to keep the patient from being exposed to radiation. As a result, there was a statistical significance in the mentolabial angle. This may needed to be taken as consideration to assess before removal of the bracket that the soft tissue profile may be further flattened. To prevent that if the bracket was removed, the soft tissue profile will flattened too much.

The study found that the relationship between soft tissue profile and skeletal configuration were not statistical significance. However, our sample size for each type of skeletal parameters are quite small. If we able to collect more samples, it may make the relationship more visible. There were probably had more parameters that can be measured other than the skeletal configuration that compared to changes in soft tissue such as lip thickness, time after orthodontic removal, age, gender, etc.

CONCLUSION

1. There was statistical significance in change of mentolabial angle but there was not statistical significance in change of nasolabial angle as in our study. Planning final esthetic of mentolabial angle before debonding orthodontic bracket may need to be considered.
2. The cephalometric parameters (SNA, SNB, and ANB), maxillary position, mandibular position and skeletal configuration were not statistically significant to mean different nasolabial angle and mean different mentolabial angle compared between before and after debonding orthodontic appliance.

Advisor
Dr.Khitparat Kamoltham



Students
Runchida Thepchatri, Suchanun Terkteaw, Suveera Mekareeya, Charma Suriyawanakul, Kevalin Jaroenpat