CHAPTER 8

CONCLUSION

In this present study, the surface microhardness and the nanohardness were utilized to measure the changes in the human enamel and dentin adjacent to the fluoride releasing materials. The main objective was to compare the hardness changes in two dimensions, one was on the surface as a function of distance and the other in the subsurface of tooth-material interface. The measured areas were proved to have no significant difference of hardness for both enamel and dentin. The two fluoride releasing materials released substantial amount of fluoride while the resin composite released none. Those factors were controlled before the experiments were performed.

Findings of the present study were summarized below:

1. Fluoride releasing materials could significantly reduce the hardness drop of enamel and dentin adjacent to the materials when subjected to demineralization process.
2. The effect of fluoride releasing materials was depended on the type of the materials.
3. The fluoride releasing materials had significant effect on enamel and dentin hardness within the area of 100x100 microns from the interface and tooth surface.
4. Fluoride was found to have substantial amount in the area where hardness was high.

Further research is required to find the factor which can also cause the rise of hardness and also the least amount of fluoride that can inhibit the demineralization process. In this study it can be implied that the fluoride releasing materials can possibly the material of choice in the clinical situation in terms of protection and delaying the caries formation.