AAO Foundation Award Final Report
6/19/2017

Award Type	Orthodontic Faculty Development Fellowship Award
Name(s) of Principal Investigator(s)	Tanya Al-Talib, DDS, MS
Title of Project	3-D Upper Airway Volume and Shape Comparison between High Risk and Low Risk Patients of Skeletal Class I and Class II adults
Period of AAOF Support	7/1/2016- 6/30/2017
Amount of Funding	$11,700
Summary/Abstract	Sleep disordered breathing (SDB) is a group of conditions characterized by breathing difficulties while sleeping. Obstructive sleep apnea (OSA) is the most common of these disorders. Prevalence of OSA is 9% in adult females and 24% in males. Mandibular retrognathism and obesity are the major risk factors for OSA. Method: Identifying the patients' risk for sleep disordered breathing using the Epworth Sleepiness Scale, using the Dolphin imaging to determine the patients' skeletal classification, and utilizing InVivo to measure the airway volume, minimum cross section area and shape. Sample included 87 patients 18-60 years of age. Results: 1. There were no significant differences in the airway volume or minimum cross section area between high risk vs. low risk patients ($p=0.45$). or between Skeletal Class I vs. Class II ($p=0.62$) 2. There were significant interactions in the airway volume ($p<001$) and minimum cross section area ($p<0.001$) between skeletal classification and risk for sleep disordered breathing ($p=011$). The mean difference in airway volume was greater between high risk and low risk in skeletal Class I (MD=51), while the mean difference in airway volume was much less apparent between high and low risk with skeletal Class II (MD=3). The mean difference in minimum cross section was also greater between high and low risk patients in Class I (MD=17), while the mean difference in minimum cross section was much less apparent in Class II (MD=0.4).

	3. There were no significant differences or interaction in cross section shape between the skeletal Class I and Class II in high risk or low risk patients.
Were the original, specific goals of the proposal realized?	This past year has been very busy as we were able to collect the data needed and analyze the data utilizing statistical analysis to evaluate the interaction of volume and minimum cross section area and comparing those values in Skeletal Class I and Class II patients with low and high risk for sleep disordered breathing. We were also able to identify some areas in our patient electronic health record that we can improve to improve our data base for future research projects.
Were the results published? **a.) If so, was AAOF support acknowledged.** **b.) If not, are there plans to publish? If not, why not?**	A manuscript is currently being prepared for publication and the AAOF support will be acknowledged as it is required by the AAOF.
Have the results of this proposal been presented? **a.) If so, when and where? And was AAOF support acknowledged.** **b.) If not, are there plans to do so? If not, why not?**	An abstract will be submitted to the AAO annual meeting in 2018 and the AADR in 2018. AAOF support will be acknowledged for both.
To what extent have you used, or how do you intend to use, AAOF funding to further your career?	I have been very fortunate to receive the Orhan C. Tuncay Teaching Fellowship Award. It has helped in all aspects of my orthodontic academic and clinical career. 1. I was able to conduct this research project and conclude the results. 2. I have published another article titled "The impacts of non-nutritive sucking habits on the risk for sleep disordered breathing in children." In the Journal of dentistry for Children 3. I was able to obtain my ABO certification. 4. I am attending sleep dental medicine meetings to develop in this field of research and clinical interest. 5. I have attended the Tweed course April 2016 to improve my clinical skills 6. I have attended the AAO meeting in San Diego, CA 7. I have also attended the ADEA annual session in Long Beach, CA 8. I am initiating more research projects in 3 D imaging and sleep disordered breathing. 9. Another study is being initiated that investigates the prevalence of sleep disordered breathing in children with ADHD in Las Vegas. 10. I am teaching the didactic courses that I enjoy in the pre-doctoral and post-doctoral levels and I am also performing clinical procedure with the orthodontic and pediatric dentistry residents I am truly appreciative of the AAOF for their ongoing support for junior faculty as they advance in their academic careers.