

Influence of BMI on gingival health and salivary Candida carriage among adolescents with braces

*2022 Orthodontic Faculty Development
Fellowships (OFDFA)*

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FollowUp Form

Award Information

In an attempt to make things a little easier for the reviewer who will read this report, please consider these two questions before this is sent for review:

- Is this an example of your very best work, in that it provides sufficient explanation and justification, and is something otherwise worthy of publication? (We do publish the Final Report on our website, so this does need to be complete and polished.)*
- Does this Final Report provide the level of detail, etc. that you would expect, if you were the reviewer?*

Title of Project*

Influence of BMI on gingival health and salivary Candida carriage among adolescents with braces

Award Type

Orthodontic Faculty Development Fellowship Award (OFDFA)

Period of AAOF Support

July 1, 2022 through June 30, 2023

Institution

Eastman Institute for Oral Health, University of Rochester

Names of principal advisor(s) / mentor(s), co-investigator(s) and consultant(s)

Professor P. Emile Rossouw (principal advisor), Dr. Fawad Javed (co-mentor)

Amount of Funding

\$20,000.00

Abstract

(add specific directions for each type here)

My overall objectives are to develop as an orthodontic educator and maintain a full-time academic appointment. I was recently re-appointed as an Assistant Professor in the academic track; and my goal it to pursue a PhD degree and grow as an academician and independent researcher. This will help me advance through the academic ranks and eventually pursue tenure. I am invested to grow as a productive member in

my Institution. The Eastman Institute for Oral Health (EIOH), University of Rochester (UR), NY provides an ideal environment for me to achieve my future goals due to its state-of-the-art facilities, devoted and well-experienced mentors, and supportive environment. Previous support from the American Association of Orthodontists Foundation (AAOF) has been essential towards my academic development. Potential future support by AAOF will be instrumental towards achieving the following proposed plan:

- Educational activities: I will pursue a PhD degree from the National and Kapodistrian University of Athens, School of Medicine, Athens, Greece in a joint collaboration with the EIOH. As part of the PhD degree, I will conduct a prospective clinical study assessing the role of body mass index on oral health-related parameters in adolescents undergoing orthodontic treatment. I will also participate in educational courses offered by the UR regarding scientific writing and curriculum development. I plan to present at the 2022 International Association for Dental Research (IADR) General Session and Exhibition in Chengdu, China. I will participate in various scientific conferences and educators' meetings such as the American Board of Orthodontics 2022 Educators Symposium, and the 2022 American Dental Education Association (ADEA) Allied Dental Program Director's Conference in Portland, OR. I will attend the American Association of Orthodontists (AAO) 2022 Annual Session; and the Northeastern Society of Orthodontists (NESO) 2022 Annual Meeting.
- Research activities: I will conduct a prospective clinical study entitled: "Influence of body mass index on gingival health, whole salivary proinflammatory cytokine and adipokine profile and Candida carriage among adolescents undergoing fixed orthodontic therapy" (study initiation stage); and a prospective clinical study that evaluates weight changes in adults undergoing orthodontic treatment with fixed appliances versus clear aligners (subject recruitment phase). I will pursue publication of the study results; and oral presentation at future IADR meetings. I will serve as mentor in resident research projects; and as a committee member for Master's students.
- Teaching activities: I will serve as main course instructor for the Orthodontics Records Course, Intercept Orthodontic Treatment Seminars, American Board of Orthodontics (ABO) Article Review, ABO Mock Boards, and Journal Review Seminars; and as co-instructor in courses such as the Orthodontic Research, Cephalometrics and Growth and Development courses. I will serve as a Master's committee member and co-mentor in resident research projects.
- Clinical activities: I will treat orthodontic patients as part of faculty practice one day a week and serve as a Clinical Instructor in the Department of Orthodontics one day a week. I will supervise the treatment of interceptive orthodontic cases in the Department of Pediatric Dentistry twice a month. I will collaborate with other specialists in the treatment of complex interdisciplinary cases.

Respond to the following questions:

Detailed results and inferences:*

If the work has been published, please attach a pdf of manuscript below by clicking "Upload a file".

OR

Use the text box below to describe in detail the results of your study. The intent is to share the knowledge you have generated with the AAOF and orthodontic community specifically and other who may benefit from your study. Table, Figures, Statistical Analysis, and interpretation of results should also be attached by clicking "Upload a file".

During my 2022 OFDFA, I officially enrolled as a PhD student at the National and Kapodistrian University of Athens, School of Medicine. As part of my PhD degree, I have been conducting the proposed prospective controlled clinical study entitled: "Influence of body mass index on gingival health, whole salivary

proinflammatory cytokine and adipokine profile and Candida carriage among adolescents undergoing fixed orthodontic therapy". Support through this award was instrumental towards developing and initiating the proposed study. During my award period, I was able to initiate the study, obtain all required study materials, assemble the study team, set up the laboratory components of the study, and have so far enrolled a total of 16 patients; and completed 7 patient follow-ups (6 months with braces). The required sample size is approximately 50 patients (25 patients with increased BMI and 25 patients with normal BMI) and the goal is to complete patient enrolment within the next 1.5 years. We have been evaluating in the present study various parameters including clinical periodontal parameters [full-mouth plaque scores (FMPS), full-mouth bleeding scores (FMBS) and probing depths], oral health related quality of life [Oral Health Impact Profile (OHIP)-14], whole salivary levels of proinflammatory cytokines and adipokines (IL1- β , IL-6, TNF- α , leptin and resistin), and whole salivary levels of Candida carriage. A preliminary assessment of pilot data reveals a tendency for increased gingival inflammation and decreased oral health related quality of life in adolescents with an increased BMI versus a normal BMI; which supports our research hypothesis. However, due to the limited number of patients enrolled up to date it is challenging to conduct formal statistical analysis and determine statistical significance. Upon study completion we aim to publish the results in a reputed orthodontic journal such as the "American Journal of Orthodontics and Dentofacial Orthopedics" and present the findings in a future IADR meeting.

Were the original, specific aims of the proposal realized?*

Yes, the aims of the proposal have been successfully met, described as follows:

Research: The proposed prospective controlled clinical study ("Influence of body mass index on gingival health, whole salivary proinflammatory cytokine and adipokine profile and Candida carriage among adolescents undergoing fixed orthodontic therapy") was successfully developed and we have currently enrolled 16 patients. Preliminary data support the research hypothesis indicating worse periodontal and inflammatory parameters in adolescent orthodontic patients with increased compared to normal BMI. Moreover, I completed a prospective clinical study comparing weight changes during the early stages of orthodontic treatment with clear aligners versus fixed orthodontic appliances. We are currently under the manuscript preparation phase.

Education: I have enrolled as a PhD student at the National and Kapodistrian University of Athens, School of Medicine which is a research thesis-based program. I am planning to complete the program in the next 2 years. To hone my clinical skills in clear aligner therapy, I completed the 6-month Invisalign Fundamental Course (The Aligner Intensive Fellowship). I also completed an ACUE's Microcredential 2-month course on "Inclusive Teaching for Equitable Learning" as well as various educational webinars ("The Changing Landscape in Orthodontic Admissions", "Diversity and Inclusion in the Workplace Training-Unconscious Bias Awareness", "Diversity and Inclusion in the Workplace Training-Essential Concepts"). All these activities I perceive have helped me grow as a clinician, researcher, and orthodontic educator.

Teaching: I have taught several courses including the ABO Mock Boards (Principal Instructor), Interceptiv Orthodontics Course (Principal Instructor), Journal Review Seminars (Principal Instructor) and Clinical Research Course (co-Instructor). I have been responsible for the Orthodontics Records Course and the pre-clinical orthodontic orientation of junior residents. I have served as a lecturer for various orthodontic courses throughout the year including the Biomechanics Course, Orthodontic Clinical Case Seminars and a Growth and Development Core Course. I have served as a clinical instructor in the postgraduate orthodontic clinic. I have mentored several postgraduate residents and MS students in their research projects the past year.

Clinical: I have served as a clinical instructor at the Department of Orthodontics. I have served as a clinical instructor for interceptive orthodontic treatment at the Paediatric Dentistry Department. I provided direct patient care as part of faculty practice limited to Orthodontics.

Other academic activities: I am honored to have been promoted as an Associate Professor (academic track) and Program Director at the Department of Orthodontics at the Eastman Institute for Oral Health. I was also appointed as Chair-Elect of the Section on Orthodontics (SOO), American Dental Education Association (ADEA) (after serving as ADEA SOO Secretary for one year). I have recently been assigned as a Site Visitor for the Commission on Dental Accreditation (CODA) for Advanced Dental Education Programs in Orthodontics; and I was accepted as an active member of the prestigious Edward H. Angle Society of Orthodontists, North

Atlantic Component. The past year I had the honor to present at the Angle North Atlantic 2023 Annual meeting in Lisbon, Portugal and at the 2023 American Dental Education Association (ADEA) Annual Session and Exhibition in Portland, OR. Support from AAOF has been instrumental towards my academic growth.

Were the results published?*

No

Have the results of this proposal been presented?*

No

To what extent have you used, or how do you intend to use, AAOF funding to further your career?*

The AAOF funding has allowed me to develop independent prospective clinical research projects and pursue my PhD degree in an effort to grow as an orthodontic educator and independent researcher. Support from the AAOF also helped me pursue additional training opportunities and maintain membership in several dental and orthodontic associations. I plan to use the funding to further develop my skills by participating/presenting in national and international conferences, further develop my research, and publish and present the findings of the ongoing projects.

Accounting: Were there any leftover funds?

\$0.00

Not Published

Are there plans to publish? If not, why not?*

Yes, my goal is upon study completion to publish the results of the research project in a reputed orthodontic journal such as the "American Journal of Orthodontics and Dentofacial Orthopedics". AAOF support will be acknowledged.

Not Presented

Are there plans to present? If not, why not?*

Yes, my goal is upon study completion to present the findings of this proposal in a future AAO or IADR meeting. AAOF support will be acknowledged.

Internal Review

Reviewer Comments

Reviewer Status*

File Attachment Summary

Applicant File Uploads

No files were uploaded