2ND INTERNATIONAL MEETING ON DENTAL RESEARCH

Universidade Federal de Goiás

March 20th-23rd, 2024

K Hotel, Goiânia - Goiás | Brazil

2nd International Meeting On Dental Research

March 20th - 23rd, 2024

Local: K Hotel, Goiânia, Goiás, Brazil

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President's message

It is with immense pride and gratitude that I reflect upon the recently concluded 2nd International Meeting on Dental Research. This gathering underscored our commitment to fostering international collaboration and highlighted the vitality of our collective pursuit of excellence in dental science. Our ambition to bridge gaps between academia and the professional realm and inspire the next generation of dental professionals and scholars was met with unparalleled enthusiasm and intellectual vigor.

I extend my heartfelt thanks to CAPES for their financial backing, and to the UFG, especially the Postgraduate Program in Dentistry at UFG, for their indispensable support. Their contributions were instrumental in creating a platform where luminaries from the global dental research community could share their invaluable insights.

The diversity of topics and the caliber of discussions were significantly enriched by the presence of renowned international researchers such as Prof. Abbas Jessani, Prof. Liliani Vieira, Prof. Quamarul Hassan, and Prof. Carlos Flores-Mir. Their expertise, alongside the distinguished work of scholars from prominent Brazilian universities, highlighted the multifaceted nature of dental research and its implications for global health.

The participation of over 200 individuals, including many undergraduate students, speaks volumes about the event's impact. It reflects a growing interest among our field's future pillars in evidence-based practice, which is a cornerstone in our fight against misinformation and a pathway to improving patient outcomes.

I must acknowledge the tireless efforts of the organizing committee, whose dedication made this event a beacon of knowledge exchange and professional growth. Their work, alongside the contributions of all speakers and attendees, has set a new benchmark for what we can achieve together.

We remain committed to nurturing the international collaboration and innovation this meeting has vividly exemplified. Our path is filled with opportunities to further elevate the standards of dental research and practice on a global scale.

Let us carry forward the momentum from this gathering, continuing to challenge the boundaries of our knowledge and foster a community where every discovery contributes to the broader tapestry of global health.

With deepest appreciation,
Prof. Pedro Paulo Chaves de Souza

PPGO'S coordinator message

It is with great honor and immense enthusiasm that we present the proceedings of the 2nd International Meeting on Dental Research, an event organized by the Graduate Program in Dentistry (PPGO) at the Federal University of Goiás, with support from CAPES and FAPEG. Having the opportunity to participate in this event, especially as the coordinator of the PPGO, is a privilege that reflects our program's collective commitment to academic excellence and to promoting research that positively impacts health and quality of life. This meeting represents not only a milestone in disseminating dental knowledge but also a celebration of the continuous efforts of everyone involved in raising the scientific and technical standards in our field.

This event plays a singular role in advancing the internationalization process of the PPGO. By bringing together researchers, faculty, students, and professionals from various parts of the world, the International Meeting on Dental Research strengthens ties with international institutions and research centers. This exchange is essential for expanding our global influence, establishing strategic partnerships, and developing collaborative projects that transcend borders, amplifying the impact of our research. Internationalization is one of PPGO's top priorities, as we believe that interacting with other academic and scientific cultures enriches our intellectual output and strengthens our commitment to a science that is universal in essence and reach.

Throughout this second edition, we have had the privilege of attending lectures and participating in roundtable discussions led by nationally and internationally renowned specialists, covering topics that reflect the most recent and innovative advances in various fields of dentistry. This event serves as a unique platform that fosters mutual learning and stimulates cutting-edge research. We hope that the content presented here inspires our students and researchers to explore new frontiers, thus contributing to the growth and recognition of the PPGO in the global scientific community.

I extend my deepest gratitude to everyone who contributed to making this event possible, from the organizing team members to the speakers and participants. Each of you played an essential role in shaping this gathering, which provided a unique opportunity for knowledge dissemination and the establishment of lasting scientific partnerships. This success results from collaborative work aimed at advancing dentistry and strengthening evidence-based practices.

May each moment of this event inspire us to continue dedicating our careers to promoting health and developing high-quality, innovative, and accessible dentistry. I am confident that we will leave this event with new ideas, projects, and an even stronger and more internationally connected network of contacts and collaborations.

I close with profound gratitude and the expectation that this meeting will continue to be a landmark of excellence and innovation. May we move forward inspired and committed to the values that guided this event.

A warm embrace to all.
Profa. Nádia do Lago Costa

Program

Wednesday, March 20th, 2024

2pm Opening Ceremony

2:30pm Discussion Panel: "Strategies and Policies of Internationalization: Paths to Human Resources Qualification and Research Strengthening"

4pm Poster presentations & Networking coffee

Thursday, March 21st, 2024

Symposium: Perspectives in Oral Health: The Research and Researchers
Moderators: Prof. Lidia Moraes Ribeiro Jordão and Prof. Rejane Faria Ribeiro-Rotta

8am "Health conditions of minorities and HIV patients" *Prof. Abbas Jessani*

8:45am "How can community service learning contribute to equitable dental care? Perspective from the community and learners" *Prof. Abbas Jessani*

9:40am "Student engagement and teaching: experiences from a Canadian university"
Profs. Liliani Vieira and Abbas Jessani

10:30am Networking coffee break

10:45am "PPGO/UFG Research group's presentation": Diagnosis and treatment of oral and maxillofacial complex diseases: training, research, and extension center; Dental public health.

12:30pm—2pm

Lunch break

Symposium: Cellular Biology in Dentistry
Moderator: Prof. Gileade Pereira de Freitas

2pm "Studies to understand the miRNA regulations on bone formation and homeostasis" *Prof. Quamarul Hassan*

2:30pm "Osseointegration of dental implants: cellular mechanisms involved in the interaction between osteoblastic cells and titanium with nanotopography" *Prof. Márcio Mateus Beloti*

3pm "Cell therapy for bone formation"
Prof. Adalberto Luiz Rosa

3:30pm "Photobiomodulation on bone repair"
Prof. Emanuela Prado Ferraz

4pm Networking coffee break

Program

Symposium: Oral Manifestations of Genetic Diseases
Moderator: Prof. Gileade Pereira de Freitas

4:30pm "Genetic counseling and the dentist's potential for practice" *Prof. Aparecido Divino da Cruz*

5pm "Validation of causal inference of genetically determined diseases with bone phenotype" *Prof. Pedro Paulo Chaves de Souza*

5:30pm "LncRNA Regulation During Skeletogenesis" *Prof. Quamarul Hassan*

Friday, March 22nd, 2024

Symposium: Systematic Reviews
Moderator: Prof. Maria Alves Garcia Santos Silva

8am "Systematic reviews with or without meta-analyses vs. Scoping Reviews - impact in practice" *Prof. Carlos Flores-Mir*

9am "Scoping reviews" *Prof. Graziela De Luca Canto*

10am Networking coffee break

10h30am—12h30pm

Round table and discussion: "The importance of international research networks" *Profs Eliete Neves da Silva Guerra, Graziela De Luca Canto, and Carlos Flores-Mir*

12:30pm—2pm

Lunch break

2pm "Opportunities for research and collaboration discussion" *Profs Abbas Jessani, Liliani Vieira and Dental Public Health & Diagnosis and treatment of oral maxillofacial complex diseases research groups**

4pm "Application of evidence in managing obstructive pediatric sleep apnea in day-to-day dental practice - maxillary expansion in Pediatrics OSA cases" *Prof. Carlos Flores-Mir*

5pm Closing ceremony

Saturday, March 23rd, 2024

8am—12pm

"Network meeting: research projects in bone biology" *Profs. Quamarul Hassan, Márcio Mateus Beloti, Adalberto Luiz Rosa, Emanuela Prado Ferraz, Pedro Paulo Chaves de Souza, and Gileade Pereira de Freitas*

CATEGORY
Research project summary

#01
Polymeric quality of a flow resin as a luting agent: an in vitro study

Marina de Almeida Silva Borges*, Abidiel Silva Guimarães, Lawrence Gonzaga Lopes – UNIVERSIDADE FEDERAL DE GOIÁS.

The success of an indirect restoration, bonded with photoactivated cement, relies, in part, on the quality of polymerization. Dual-cure cement is widely adopted for luting indirect ceramic restorations on posterior teeth due to its dual capability for light and chemical curing. However, drawbacks associated with this material, such as color instability, difficulties in application, and high cost, emphasize the need to explore alternatives to dual-cure cement. In this context, flow-type resins emerge as a promising substitute. Their chemical similarity to resin cement, along with endorsements from some manufacturers, positions them favorably as luting agents due to their improved chemical properties, ease of use, aesthetic qualities, and cost-effectiveness compared to dual-cure cement. Despite encouraging results from previous studies, there remains a lack of sufficient data regarding the polymerization quality of flow-type resins compared to dual-cure cement. This study aims to address this gap by analyzing and comparing the polymerization quality of flow-type resin and dual-cure cement when used as luting agents for posterior teeth restorations. To evaluate polymerization quality, a simulation will replicate the cementing process of MOD onlay prosthetic ceramics with varying opacities. The luting agent film will be subjected to a microhardness Knoop test. Statistical analyses will then be applied to the resulting data to compare the materials across different ceramic opacities. The outcomes of this study will contribute to the current evidence through the evaluation of flow resin microhardness in comparison to dual-cure cement, thereby providing valuable insights for clinical decision-making and the progression of dental restoration techniques.

#02

Clinical efficacy of endocrown restorations in posterior teeth with endodontic treatment: a systematic review

Abidiel Silva Guimarães*, Katieny Lacerda Tolentino, Karine Evangelista Martins Arruda, Lawrence Gonzaga Lopes – UNIVERSIDADE FEDERAL DE GOIÁS.

After endodontic treatment, aesthetic restorations in posterior teeth aim to restore masticatory function and aesthetics. Although there are several approaches suggested in the literature, such as inlays, onlays, and total crowns, there is currently no high level of evidence that establishes which design is superior in terms of clinical survival and success rates when associated with a retainer or not. This study aims to conduct a systematic review following the PRISMA protocol to compare the clinical performance of indirect endocrown restorations with onlays and crowns that include post and core. Upon registering the protocol in the PROSPERO database, searches will be performed in the following databases: PubMed, Lilacs, Imbase, Scopus, Livivo, Web of Science, Google Scholar, and ProQuest. Two independent researchers will select the study according to previously established eligibility criteria. Data will be extracted after the final selection of studies; a bias risk analysis will be conducted, a meta-analysis, and ultimately, an assessment of the certainty of the evidence Grading of Recommendations, Assessment, Development and Evaluation (GRADE). The goal is to establish solid scientific evidence to enable the clinical professional to make a more informed choice, aiming for greater longevity in the restorative treatment.

#03

Evaluation of the safety and effectiveness of Doctive® for the treatment of denture stomatitis: a double-blind randomized clinical trial

Egon Bernardo Mualeite*, Túlio Eduardo Nogueira, Francine do Couto Lima Moreira, Cláudio Rodrigues Leles, Nádia do Lago Costa – UNIVERSIDADE FEDERAL DE GOIÁS.

Denture Stomatitis (DS) is a common multifactorial oral fungal infection, particularly prevalent among users of removable upper complete dentures. The conventional treatment for this condition involves the use of nystatin, however, indiscriminate use can lead to hepatotoxic and nephrotoxic effects, allergic reactions, and potential fungal resistance. Antimicrobial photodynamic therapy (aPDT) has demonstrated efficacy due to its antifungal properties. Doctive is a commercial product in aPDT, containing methylene blue as its photosensitizer component. Therefore, there is a need to evaluate Doctive as an alternative treatment for DS. This work aims to conduct a clinical evaluation of Doctive® for treating DS. This is a parallel, prospective, double-blind, randomized clinical trial to be conducted at the NPPI-UFG. Participants diagnosed with DS will be randomly allocated into experimental (Doctive in lollipops) and control (nystatin oral suspension) groups. The action of methylene blue will be potentiated using a low-power laser device with specifications of 660 nm, 100 mW, and 28 J/cm² twice a week until clinical signs remission. Participants in the control group will be instructed to gargle with topical nystatin oral suspension of 100,000 IU. The sample size will be calculated after the pilot study. It will be based on the primary variable clinical aspect of DS, considering a statistical significance of 5% and a two-tailed test power of 80%. The present study intends to contribute with a safer and more cost-effective therapeutic alternative, accessible and easy to handle, offering a quality and satisfactory treatment to patients with DS.

#04

Evaluation of the quality of endodontic mechanical preparation of maxillary first molars: comparison between manual and rotary instrumentation

Mikaella Gomes Mialichi*, Stella Maris Lima, Maurício Barriviera, Marcos Porto Arruda, Taia Maria Berto Rezende – UNIVERSIDADE FEDERAL DE GOIÁS/ UNIVERSIDADE DE BRASÍLIA.

Nickel-titanium (NiTi) rotary instruments have become increasingly prevalent in endodontic therapy. Current fundamentals indicate that NiTi rotary instruments are well-executed and continuously evolving to achieve greater efficiency. The high flexibility, resistance, and heat treatment of NiTi instruments have distinguished them in comparison to stainless steel files. The aim of the present study is to compare manual instrumentation and rotary instrumentation based on periapical radiographs. Endodontic treatment will be performed on 50 first maxillary molars in the mesiobuccal canals, extracted for therapeutic reasons. Twenty-five teeth will be prepared by manual instrumentation with stainless steel files (Flexofile, Dentsply, USA), and 25 teeth by rotary instrumentation with NiTi files using the ProDesign S and Logic system (Easy, Brazil) to evaluate the adaptation of the main cone and radiographic assessment. Experienced professionals will be invited to analyze the radiographs obtained from the two instrumentation methods and determine which instrumentation is being used radiographically and in relation to the quality of the instrumentation. They will also highlight the factors influencing the choice of instruments and clinical sequence for the success of endodontic treatment, demonstrating practical evidence-based knowledge and optimizing the benefits of selecting and applying NiTi rotary instruments for root canal treatment.

#05

Clinical long-term performance of single implant mandibular overdenture

Xotchil Lourdes Tellez Flores*, Thalita Fernandes Fleury Curado, Túlio Eduardo Nogueira, Cláudio Rodrigues Leles – UNIVERSIDADE FEDERAL DE GOIÁS.

The treatment of edentulism with a single-implant mandibular overdenture is known to be one of the most affordable and simple implant treatment options available and with positive results. However, there is scarce information on the long-term performance of this treatment approach. The aim of this prospective study is to assess the 7 to 10-year follow-up outcomes of a cohort of patients rehabilitated with a single-implant mandibular overdenture opposed to a conventional maxillary complete denture. Patients were enrolled in two clinical trials (n=74), and received a single Ø3.75-mm external hexagon implant (Titamax TI Cortical; Neodent Osseointegrated Implants) in the mandibular midline. They were contacted in order to assess the following outcomes: implant stability, peri-implant marginal bone level and soft tissue health, patient satisfaction with the overdenture, and oral health-related quality of life. The incidence of maintenance events throughout the entire follow-up period were also recorded. Data were already collected and analysis will comprise descriptive statistics, calculation of incidence and incidence density rates, and within-subject comparison tests with a significance level of $p<0.05$. We expect to generate results that will contribute to knowledge about the behavior of this type of prosthesis in the long term and thus help in making rehabilitation decisions that suit the needs of the edentulous patient.

#06

Treatment decision for initial and moderate caries lesions by dental students from universities participating in the XII call of the MARCA program: a multicenter study

Rhadija Victória Mendonça Martins*, Samuel Carvalho Barbosa, Analía Mayra Cachia, Germán Enrique Di Girolamo Pinto, Nathaly Campero Ferrufino, Anunzziatta Fabruccini Fager, Lidia Moraes Ribeiro Jordão – UNIVERSIDADE FEDERAL DE GOIÁS/ UNIVERSIDAD NACIONAL DE ROSARIO/ UNIVERSIDAD NACIONAL DE LA PLATA/ UNIVERSIDAD DE LA REPÚBLICA/ UNIVERSIDAD PRIVADA DEL VALLE.

There is increasing evidence regarding less invasive treatment approaches to stop non-cavitated or microcavitated carious lesions, including biofilm removal, sealing and remineralization. This change in treatment modalities requires a modification in clinical behavior and dental professionals' education. Given that institutions in the XII call for the MARCA (Regional Academic Mobility Program for MERCOSUR) share common standards in the training of dental surgeons, it is proposed to study treatment decisions for initial and moderate caries lesions. The aim is to study treatment decisions for these lesions on the occlusal and proximal surfaces of permanent molars, among final-year dental students from MARCA Program participating universities (Universidad Nacional de La Plata and Universidad Nacional de Rosario - Argentina, Universidad Privada del Valle - Bolivia, Universidad de la República – Uruguay, and Universidade Federal de Goiás - Brazil). An international cross-sectional and multicenter study will be accomplished. A modification of Liberman (2020) self-reported, self-administered, on-line questionnaire will be applied regarding different levels of treatment decision making for caries lesions. Student data will be collected, such as sex, age, skin color and other variables concerning socioeconomic status. All students in the last period of Dentistry at universities participating in the MARCA program will be invited to participate. Data analysis will be conducted, presenting absolute and relative frequencies of treatment options and associations will be made between the outcome variable according to the clinical situation and independent variables. It is expected to find uniformity in treatment decisions among final-year dental students across the Universities participating in the MARCA Program's XII call.

#07

Is there a difference in the utilization and satisfaction of users of Primary Health Care dental services? Family Health Strategy versus traditional model

Samuel Carvalho Barbosa*, Gabriela Montenegro dos Anjos, Túlio Eduardo Nogueira, Melissa Procópio Rodrigues, Jorge Felipe Marques Vidal, Érika Fernandes Soares, Newillames Gonçalves Nery, Lidia Moraes Ribeiro Jordão – UNIVERSIDADE FEDERAL DE GOIÁS/ SECRETARIA MUNICIPAL DE SAÚDE DE GOIÂNIA.

The Brazilian Unified Health System (SUS) has two models of Primary Health Care (PHC): traditional (hospital-centric and free demand) and, more recently, the Family Health Strategy (FHS) (multidisciplinary teams and assigned population). The health care model has been studied as a macrostructural level factor that can influence the utilization of dental services. The aim of this study is to verify whether there are differences in the utilization of dental services between the two models of PHC in the city of Goiânia, Goiás, including the reasons for seeking dental care, user's knowledge about the service, experience of difficulties, scheduling system, and waiting time. This cross-sectional observational study will analyze data previously collected in 2022-23 by the research team, which included 18 PHC units and 200 participants. Primary outcomes will be the utilization of SUS dental service once in life, the existence and typification of difficulties when obtaining care, and the explanatory variable will be the type of PHC model where care was received. Answers to open questions (reason for seeking care and difficulties) will be categorized to enable quantitative analysis. Descriptive and inferential analyzes (bi- and multivariate) will be carried out using SPSS 29.0. In all analyzes a significance level of 5% will be adopted. It is expected that dental services in the FHS model will present higher rates of utilization (effective access), reasons for seeking the service that are less related to emergencies, shorter waiting times and higher levels of satisfaction than traditional units.

#08

Evaluation of the effect of narguile and electronic cigarette use on oral cells

Jullia Rodrigues Cardoso*, Camila Alves Costa, Ana Carolina Elias Hanna, Nádia do Lago Costa – UNIVERSIDADE FEDERAL DE GOIÁS.

The habit of smoking using alternative forms to conventional cigarettes, such as narguile, has been growing globally, especially among young people, with the justification of choosing a "less harmful" option. The chemical composition of tobacco, combined with the effects of its smoke, is responsible for causing lung, esophageal and oral cavity cancer, cognitive impairments, potentially malignant disorders in the mouth, and periodontal disease. The clear observation of its harmful effects is hindered by the complexity and various variants involved in these tobacco forms, causing most studies on the subject to opt for the simple manipulation and insertion of tobacco extracts into cells, thus obtaining partial results, since they ignore the effects of its smoke, a simplification that will not occur in the present study. The objective of this study is to evaluate in human immortalized keratinocytes (HaCaT) and periodontal ligament cells, the latter obtained from freshly extracted premolars and/or third molars following a pre-established protocol, the effects of direct exposure to narguile and electronic cigarette smoke, allowing the recognition and tabulation of the real molecular, cytomechanical, and biochemical changes triggered by use. The results will be tabulated and analysed using the SPSS software, considering $p<0.05$ as the level of statistical significance. It is therefore expected that by subjecting such prepared cell groups in 3D models and following a diversified and well-defined exposure protocol, greater cytotoxic potential will be found in the exposed cells, increased invasive capacity of non-invasive cells, cell proliferation, overexpression of proteins, increased oxidative stress, and pro-inflammatory cytokines.

#09

Tryptase+ mast cell density in samples of oral squamous cell carcinoma and healthy oral mucosa and its relationship with clinical-pathological prognostic factors

Ana Carolina Penha Machado*, Adriel Vieira Vargas, Diego Antônio Costa Arantes – UNIVERSIDADE FEDERAL DE GOIÁS.

Oral squamous cell carcinoma (OSCC) represents a significant proportion of head and neck tumors, often associated with poor prognosis. Mast cells, particularly those expressing tryptase, have emerged as potential contributors to tumor progression through angiogenesis and immune modulation. This retrospective observational study aims to evaluate tryptase-positive mast cell density in OSCC samples compared to healthy oral mucosa and its correlation with clinical-pathological prognostic factors. Samples will be collected from the Oral Pathology Laboratory at the Federal University of Goiás, Brazil, and subjected to histological and immunohistochemical analyses. The study seeks to elucidate the role of mast cells in OSCC pathogenesis and their potential as therapeutic targets or prognostic indicators. By correlating mast cell density with clinical outcomes, this research aims to provide insights into OSCC progression and facilitate the development of personalized treatment strategies. Anticipated results include distinguishing mast cell density differences between OSCC and healthy mucosa, informing diagnostic and therapeutic approaches. Statistical analysis will utilize IBM SPSS 20.0, applying tests such as Pearson $\chi 2$ and Mann-Whitney. This study is expected to contribute to a better understanding of OSCC pathophysiology and guide future research on immunocellular profiling in malignant neoplasms.

#10

The impact of dental prophylaxis on surface roughness of various glass ionomer cement types

Osly Fedrigo Bandeira Filho*, Terezinha de Jesus Esteves Barata, Gustavo Adolfo Martins Mendes – UNIVERSIDADE FEDERAL DE GOIÁS.

The development of different types of Glass Ionomer Cements (GIC) arises as a consequence of the need for improvement of their mechanical properties. Among these properties, wear resistance is particularly important against the injuries applied on restorations and sealing of pits and fissures, in the long term. It is known that prophylactic treatment, performed by the dentist, can generate an increase in roughness and, consequently, greater biofilm retention, thus, there is a relationship between the abrasiveness of prophylactic pastes used and surface wear. The aim of the present study is to analyze the surface roughness in different types of GICs after prophylactic treatment with clinically used dentifrices, conventional and charcoal-based. Ninety samples will be made with conventional GIC (Maxxion R - FGM); resin-reinforced (Vitremer - 3M ESPE) and nanoparticulate (Equia Forte - GC), divided into three groups (n=10) according to the material used for prophylaxis. All samples will undergo the same simulated prophylaxis protocol varying the materials, namely: clinically used dentifrice (Herjos – Coltene), conventional (Colgate Total 12 – Colgate. Palmolive) and charcoal-based (Colgate Luminous White Activated Charcoal – Colgate. Palmolive). The samples will be analyzed for surface roughness (Ra standard) before and after prophylaxis using a TR210 profilometer (Digimess) and evaluated qualitatively in scanning electron microscope images. Although evidence suggests that there is no abrasive wear with application of common dentifrice on nanoparticulate GIC, an increase in surface roughness is expected as the abrasiveness of the prophylactic paste increases, mainly in conventional and resin-modified GIC.

#11

Clinical evaluation of composite resin restorations relative to the presence of marginal defects after seven years of clinical follow-up

Thaís Silva Mendonça*, Mikaella Gomes Valadares, Abidiel Silva Guimarães, Lawrence Gonzaga Lopes – UNIVERSIDADE FEDERAL DE GOIÁS.

Among the available adhesive systems, the universal adhesive system stands out for its ability to adhere to different surfaces and its versatility in terms of application modes, aiming for effective adhesion and greater longevity for restorations. The aim of the study is to evaluate potential defects at the interface of Class I and II composite resin restorations, performed with universal adhesive in three application modes, after 7 years of follow-up. The restorations will be scanned using intraoral scanning with the Intraoral Scanner Element 2 (iTero®, Align Technology) to analyze visible areas relative to the tooth/restoration interface for the presence or absence of defects. The obtained images will be evaluated, and the area related to potential defects will be measured, adopting scores: 0 - absence of defects at the occlusal and/or proximal interface; 1 - presence of one defect at the occlusal or proximal interface; 2 - presence of two defects at the occlusal and/or proximal interface; 3 - presence of three defects at the occlusal and/or proximal interface; 4 - presence of four or more defects at the occlusal and/or proximal interface for evaluation. Data will be tabulated in IBM SPSS Statistics for Windows, version 24, and subjected to tests to compare each group and to analyze the difference between groups, both with a significance level of 5% ($p \leq 0.05$). It is expected to advance knowledge on the measurement of defects at the occlusal and proximal interface of restorations and their impact on clinical practice.

#12

Reproducibility and color stability of monochromatic composite resins

Wannessa Laureano Dornelio da Silva*, Diego Sousa Carvalho, Gustavo Adolfo Martins; Andreia Assis Carvalho – CENTRO UNIVERSITÁRIO ALFREDO NASSER/ UNIVERSIDADE FEDERAL DE GOIÁS.

The monochromatic composite resin is increasingly gaining popularity in restorations due to its color compatibility. This composite possesses distinctive characteristics based on "monochromatic intelligence technology," enabling it to capture the color of the surrounding tooth through the size of its filler particles. The aim of this study is to evaluate the optical properties of Vittra Unique monochromatic composite resin (FGM) and Transcend Forma (Ultradent) in cavity preparation in manikin teeth using a digital spectrophotometer and to compare their results with conventional composite resins Vittra (FGM) and Forma (Ultradent). This will be an in vitro laboratory study in which twenty prepared teeth (lower second molar, tooth 47, Class I) from a dental manikin will be restored with monochromatic (n=10) and conventional (n=10) composite resins. After evaluating color reproducibility, they will be immersed in distilled water and dyes to assess color stability. The Shapiro-Wilk test will be used to assess the normality of the color variation score. If the scores are normally distributed, comparisons between resin types will be conducted using ANOVA and Student's t-test. It is expected that teeth restored with the composite resins Vittra Unique (FGM) and with the composite resin Transcend Forma (Ultradent) reproduce color similarly to without preparation teeth and to restorations made with conventional composite resins, Vittra (FGM) and Forma (Ultradent), respectively. Additionally, it is expected that the restorations exhibit color stability and low staining after immersion tests.

CATEGORY
Preliminary or final results from original research

#13
What do orthodontists know about cone beam computed tomography integrated with orthodontic aligners? A pilot study

Kris Fellipe do Nascimento Santos*, Alessah Carolyna de Andrade Fernandes, Milena Moraes de Oliveira Lenza, Brunno Santos de Freitas Silva, Maurício Guilherme Lenza, Fernanda Paula Yamamoto-Silva – UNIVERSIDADE FEDERAL DE GOIÁS/ INSTITUTO LENZA DE PÓS-GRADUAÇÃO.

The enhancement and technological development in orthodontic aligners have been driven by the need for more aesthetically pleasing and comfortable patient treatments. This new treatment modality has obtained significant interest among both patients and orthodontists, leading to a marked increase in treated cases. However, being an emerging therapy modality, it still presents challenges in achieving finishes of comparable quality to those seen in conventional intervention. An approach adopted by some companies involves integrating Cone Beam Computed Tomography (CBCT) into case planning to enhance the outcomes of orthodontic aligner treatments. This study aims to evaluate the knowledge of orthodontists regarding the integration of CBCT into aligner planning. Through a cross-sectional study design, orthodontists were invited to complete a virtual questionnaire concerning their understanding of this subject. The final sample comprised 14 participants. Approximately 86% of orthodontists noted a distinction between CBCT and medical tomography. However, only 7.1% of the participants considered CBCT to be important for case planning. The majority of them (87.7%) were familiar with the concept of integrating CBCT with virtual planning for aligners. Regarding the specification of CBCT parameters, 60% of participants did not provide any. In conclusion, while orthodontists possess limited knowledge of CBCT, they acknowledge the potential benefits of integrating this imaging modality into virtual aligner planning. Therefore, it is advisable to enhance the training and education in CBTC for these professionals, considering the potential for incorporation into their practice.

#14

Ageism in dentistry: a scoping review

Liandra Alves Botacin*, Eunice Ellen Gontijo de Menezes, Túlio Eduardo Nogueira – UNIVERSIDADE FEDERAL DE GOIÁS.

Ageism, also known as etarism or age-based discrimination, is a social phenomenon characterized by stereotypes, prejudice, and discrimination based on an individual's age. This prejudice can manifest within the field of Dentistry, highlighting the importance of comprehending its implications in dental practice. This scoping review aimed to identify existing scientific evidence about ageism in dentistry. The study protocol was developed according to the Joanna Briggs Institute manual and registered on the Open Science Framework platform. A search strategy was developed in collaboration with an experienced librarian for ten databases, including PubMed and grey literature. The search was conducted in April 2023, and database alerts were created to keep the search updated. Publications included in the review were selected without language or publication date restrictions. Identified studies underwent screening in the Rayyan app to remove duplicates, with two reviewers independently analyzing titles and abstracts. Data extraction from included studies focused on authors' names, publication year, sample characteristics, study objectives, key findings, and conclusions. Of 261 identified records, 34 publications met the inclusion criteria, with the majority (52.6%) published between 2018 and 2023. Ageism against older adults emerged as the most frequently addressed type, primarily through cross-sectional studies (89.5%). Sex was identified as a factor associated with ageist attitudes, with females exhibiting lower occurrences. Moreover, students in clinical stages or professionals with more clinical experience demonstrated greater empathy and lower instances of ageist attitudes. Ten of the included publications reported the validation process of the Ageism Scale for Dental Students (ASDS), a specific tool for assessing ageism in dental students. In conclusion, while ageism in dentistry is gaining attention in healthcare research, further studies are warranted to elucidate associated factors and to assess effective strategies for combating this prejudice.

#15

Ageism against older adults and associated factors: a cross-sectional study among dental students in Goiás, Brazil

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Ageism, also referred to as etarism or age-based discrimination, is a prejudice, discrimination, or stereotype related to age. Ageist behaviors directed towards older people are present in society, and little is known about their occurrence among dental students. The aim of the study was to assess the occurrence of ageism towards older adults and investigate associated factors among dental students of the metropolitan region of Goiânia, Goiás, Brazil. This was a cross-sectional observational study in which dental students who had completed at least one clinical academic component responded to a self-administered questionnaire. The questionnaire included items assessing ageism using the Brazilian version of the Ageism Scale for Dental Students (ASDS-Braz), empathy (Jefferson Scale of Empathy - JSE), sociodemographic information, educational background, and religiosity measured by the Duke University Religion Index (DUREL). Data analysis was performed using SPSS 25.0 software, employing descriptive statistics, comparison tests (Mann-Whitney and Kruskal-Wallis), and Spearman correlation. A significance level of 5% was applied to all analyses. Participation involved 807 dental students from seven Higher Education Institutions in Goiás, Brazil. The majority were female (n=587; 73%) and single (n=650; 80.8%). Only 34.9% (n=282) of participants reported previous exposure to Geriatric Dentistry content/activities. A significant difference in the ageism total score was observed among educational institutions ($p<0.01$), as well as between students with and without previous exposure to Geriatric Dentistry content ($p<0.01$), and between students with and without prior knowledge of the term ageism ($p<0.01$). Furthermore, a significant negative correlation was identified between ageism and empathy scores ($p<0.01$, $\rho=-0.235$). Based on these findings, we conclude that dental students who reported prior involvement in academic activities related to geriatric dentistry and familiarity with the term ageism showed significantly lower ageism scores, indicating reduced ageist behavior. Additionally, a significant negative correlation was found between ageism and empathy scores.

#16

Assessment of Genetic Counseling (GA) services in Goiás

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Genetic counseling (GC) is the communication by a professional about the occurrence or risk of a genetic disease in a family, enabling understanding of the diagnosis, prognosis, heredity factors and therapeutic resources. According to the Royal College of Physicians of the United Kingdom, 6-12 specialists would be needed for every 1 million inhabitants. In Brazil, there are only 342 medical geneticists, and 35 clinical genetics services enabled in the Unified Health System (Sistema Único de Saúde - SUS). The number of genetic counselors is not known. This work aims to characterize the GC service profile in Goiás and to map the distribution among the state regions. We used the Tabwin program to tabulate the approved treatment of GC in the SUS, considering the State of Goiás in the year of 2023. The data obtained were tabulated in an EXCEL spreadsheet, and graphs were generated to represent the findings visually. Only Goiânia and Anápolis provided the procedure in the state in 2023. Concerning age demographics, the data from Anápolis indicates that most GC services cater to patients aged 5 and below, followed by adults. Services for age groups are utilized in descending order from 6 to 10 years, 11 to 18 years, with the elderly receiving the least services. Conversely, in Goiânia, adults are the primary recipients of GC, succeeded by adolescents (11 to 18 years), children (6 to 10 years), the elderly, and lastly, infants and toddlers (up to 5 years old). Regarding gender distribution, services are predominantly utilized by women. Regarding ethnicity, individuals of mixed race comprise the majority of the clientele, followed by black and white populations. The regions receiving the most substantial services are the macro-central west, macro-central-north, and macro-central-southeast. This highlights a pressing need to scrutinize the requirements for GC across different demographic sectors within Goiás.

#17

Oral health service in Primary Health Care in Goiânia, Goiás: a cross-sectional study of factors associated with utilization and user's satisfaction

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As the oral health service (OHS) within the Unified Health System (UHS) experiences significant expansion and relevance in the national health policies, it becomes imperative to conduct research evaluating its utilization and user satisfaction. The objective of this study was to assess the factors associated with utilization and satisfaction of users of the OHS in Primary Health Care (PHC) in Goiânia, Goiás, Brazil. This was an observational cross-sectional study. Data collection was conducted through a questionnaire administered in an interview format. Data were analyzed using SPSS 24.0 through descriptive statistics, association tests (Pearson's Chi-square and Mann-Whitney), and logistic regression. Nineteen health units (HUs) were visited, and 405 participants responded to the questionnaire. Greater utilization of the OHS was associated with lower monthly individual income (OR=0.23; 95% CI: 0.076-0.716; p=0.011), receiving oral health guidance (OR=5.40; 95% CI: 3.415-8.551; p<0.001), and usual means of transportation being walking to the HU (OR=0.48; 95% CI: 0.300-0.794; p=0.004). Among those who reported using the OHS in PHC (n=178), 147 (82.5%) were included for the analysis of satisfaction with the OHS. Higher satisfaction regarding the reception at the HU (p<0.01) and the last appointment (p=0.02) was observed for users who reported receiving oral health guidance within SUS. For those who reported difficulty accessing the OHS, lower satisfaction was observed regarding scheduling (p<0.01), operating hours (p=0.01), office facilities (p<0.01), and problem resolution (p=0.04). Based on the results, it can be concluded that having an income above 3 minimum wages was associated with lower utilization of the OHS, while receiving oral health guidance and walking to the HU implied higher utilization. Users who managed to use the OHS in PHC considered themselves satisfied with the experience, particularly with the last appointment provided by the dentist; however, it is necessary to improve the scheduling process and appointment availability to enhance user satisfaction.

#18

The development and use of an oral health self-efficacy scale for patients using mandibular overdentures

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Albert Bandura introduced the concept of self-efficacy, which reflects an individual's belief in their ability to achieve specific goals. This study aimed to develop an oral health self-efficacy scale and investigate its relationship with peri-implant health in overdenture users. Conducted at the Prosthesis and Implant Research Centre (NPPI) at the Federal University of Goiás (UFG) in Goiânia, Brazil, the study received ethics approval. The Oral Health Self-Efficacy Evaluation for Overdenture Users (OHSE-OVER), a 25-item questionnaire, was designed to assess various aspects, including routine challenges, performance ratings, attitudes, and special occasions. Participants were overdenture users with mandibular implants. Follow-up assessments included plaque evaluation, peri-implant bleeding, and denture plaque. Analysis involved Confirmatory Factor Analysis and regression using IBM-SPSS 22.0 and Mplus 8.8. Out of 74 invited participants, 69 took part, predominantly female, aged 36-81, with half being smokers and most on regular medication. The mean self-efficacy score was 2.35, showing good reliability (Cronbach's alpha = 0.799). Confirmatory factor analysis supported a four-factor model. Higher self-efficacy correlated with improved hygiene outcomes and male sex, while it inversely correlated with plaque index in dimensions 1 and 2. This study underscores the significance of self-efficacy in oral health outcomes for overdenture users, particularly its association with hygiene indicators. The validation of OHSE-OVER enhances its usefulness in both clinical and research settings for assessing and addressing self-efficacy in these patients.

#19

Cell proliferation of the pre-osteoblastic cells cultured on microtextured titanium grade II, IV, and V.

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In most clinical scenarios, dental implant therapy is a predictable, safe, and reliable rehabilitation method for edentulous patients to restore masticatory and aesthetic function. The material used to produce dental implants can be commercially pure titanium (Ticp) or alloys. The dental implant companies have focused on manufacturing their implants of Ticp grade II, Ticp grade IV, or titanium-aluminum-vanadium alloy (Ti-Al6-V4), known as Ti grade V. Based on the above, this study aims to evaluate the cell proliferation of pre-osteoblastic cells cultured on microtextured titanium discs grade II, IV, and V. For that, MC3T3-E1 lineage cells, subclone 14, were cultured on titanium discs with different grades, and the cell proliferation was evaluated on days 1, 2 and 3. The results showed that cell proliferation was similar among the groups on day 1 ($p > 0.05$), and the cell proliferation was more significant on days 2 and 3 between the Ticp IV and Ticp V groups compared to the Ticp II group ($p < 0.001$ for both). Based on these findings, Ticp IV and Ticp V generally presented higher cell proliferation than Ticp II.

#20

Evaluation of the in situ alkaline phosphatase activity of pre-osteoblastic cells cultured on microtextured titanium discs grade II, IV, and V.

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Dental implants are the most modern treatment for oral rehabilitation of edentulous patients, improving masticatory performances and aesthetic function. Commercially pure titanium (Ticp) or their alloys are the preferred materials for manufacturing dental implants. Available brands generally used in the manufacture Ticp grade IV, Ticp grade II, and titanium-aluminum-vanadium alloy (Ti-Al6-V4), known as Ti grade V. However, the biological bases of cell behavior on this material are unclear. Based on the above, this study aims to evaluate the osteogenic potential of pre-osteoblastic cells cultured on grade II, IV, and V microtextured titanium discs. For that, MC3T3-E1 lineage cells, subclone 14, were cultured on different discs of Ti, and the in situ alkaline phosphatase activity (ALP) was evaluated on day 7. The results showed that the in-situ ALP activity showed no statistically significant difference between the groups ($p = 0.072$). Based on these findings, both groups presented similar in situ alkaline phosphatase activity in the period evaluated.

#21

Dynamic evaluation of the repair process in dental extraction wounds in rats, using fluorochromes

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The alveolar repair sequence includes clot formation, replacement by granulation tissue, connective tissue, osteoid tissue, bone matrix maturation, and epithelialization. This process is considered complete when the socket is filled with newly formed bone tissue. Several methodologies, such as fluorochrome injection, are used to study the alveolar repair process. For this reason, the aim of this study is to present a methodology that allows the use of fluorochromes in the analysis of this alveolar healing phase. Thus, 5 rats had their upper right central incisors extracted. At day 6 calcein was injected, at day 15 alizarin was injected, and at day 21, oxytetracycline was injected. After 35 days the animals were euthanized. After the samples were obtained, the middle third of the socket was analyzed. Predominance of calcein was observed next to the lingual wall, showing the beginning of ossification from the periodontal ligament. A great amount of alizarin staining was observed, confirming that the period of greatest bone deposition is the second week and a smaller amount of oxytetracycline staining were also seen, demonstrating that the repair process actually occurs from the periphery to the center of the alveolus and that there was a smaller rate of bone mineralization. This study was able to show the dynamics of the socket repair process in a clear and illustrative manner, besides being easy to reproduce and relatively inexpensive.

#22

Evaluation of the root canal filling in the apical third of molars using a blooming artifact reduction filter in cone beam computed tomography scans

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The root canal filling 1 to 2 mm short from the apex is crucial to promote sealing of the periapical tissues whilst avoiding inflammatory processes. The use of Cone Beam Computed Tomography (CBCT) is a standard form of evaluation of the root canal filling. However, materials with high atomic weight have their image expanded due to the Blooming Artifact. The software E-Vol DX has a Blooming Artifact Reduction Filter (BAR), which can reduce this scanning artifact. The present study evaluated the apical filling within 60 inferior molars using CBCT scans, in the E-Vol DX software. The procedures before the filling were access preparation, working length determination and root canal preparation. The ProTaper Next® files system was used in the root canal preparation, with the X1, X2 and X3 files for the mesiobuccal and mesiolingual canals, whereas in the distal canal the X4 and X5 files were used. Between files, the root canal was irrigated with 3 mL of 2.5% sodium hypochlorite and, lastly, with 17% EDTA. The root canal filling technique was the lateral condensation, with the AH Plus® cement. After the procedures, CBCT scans were taken and for each canal the image was analyzed with and without the BAR filter in the sagittal axis. The volumetric expansion of the filling was evaluated at the levels smaller than 1 mm, equal to 1 mm and larger than 1 mm. The t Student test was used to verify statistical significance ($p<0.05$). The results show that there were no statistically significant differences from the use of the BAR filter and that the volumetric expansion varied up to 1mm in length. The BAR filter is useful to avoid volumetric increase in the Blooming artifact within CBCT scans. When analyzing the apical limit of the filling, there was a variation up to 1 mm in length.

#23

Protective potential of chrysin in the bone tissue of mice after ingestion of aluminum chloride.

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Humans ingest aluminum (Al) throughout their lives even during the neonatal phase. As one of the main sites of accumulation, bone tissue formation is impaired by Al intake. In vitro studies have demonstrated that chrysin, as an antioxidant flavonoid, is capable of promoting osteoblast differentiation and osteogenesis, as well as preventing mineral loss. In that regard, the objective of this study was to determine the relative frequency of collagen fibers and proliferating cell nuclear antigen (PCNA), as well as the distribution of osteonectin, in order to evaluate the protective potential of chrysin on bone of mice treated with AlCl3. Thirty adult male mice were divided into control (C), aluminum (Al), chrysin 10mg (C10), chrysin 30mg (C30) and chrysin 100 mg (C100). The C group was treated with saline; the Al group was treated with AlCl3 (100 mg/Kg/day) for 45 days and saline from the 46th to the 60th day. Chrysin groups (C10, C30 and C100) were treated with AlCl3 (100 mg/Kg/day) during 45 days, so, from the 46th to the 60th day they received chrysin with their respective dilutions. Sections (5µm) were stained with picrosirius red, photomicrographs were obtained using a polarized light microscope and the relative frequency (%) of fibrillar collagen was determined using a multipoint grid (M130). Al intake significantly decreased the relative frequency (%) of collagen in the Al group ($p<0.05$) and chrysin showed an osteoprotective effect at all doses evaluated ($p<0.05$). These results highlight the ability of chrysin to prevent the toxic effects of Al on bone and suggest its potential use as a food supplement for bone health. More studies are needed to expand knowledge of natural compounds that may have protective effects on bone tissue.

#24

Clinical and thermographic evaluation after extractions of lower third molars and different low-level laser therapy protocols: a double-blind randomised clinical trial

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The effect of low-level laser therapy (LLLT) on postoperative symptoms and tissue repair of third molars is controversial. This study aimed to compare the parameters of pain, oedema, temperature, and soft tissue closure in dental sockets that received two different LLLT protocols following extractions. Thirty-one participants had their teeth 38 and 48 extracted. Subsequently, one of the dental sockets received LLLT at a wavelength (WL) of 808 nm (808 group) and the other dental socket received the LLLT at WLs of 808 nm and 660 nm (808+660 group). The LLLT was applied immediately after the surgical procedure and on the 3rd and 7th days. The mean of Visual Analogue Scale (VAS) values for pain were 1.45 for the 3rd day and 0.52 for the 7th day in the 808+660 and 808 groups. The mean pogonion-tragus measurement, used to assess facial oedema on the 3rd day, was 15.38 cm in the 808+660 group and 15.48 cm in the 808 group. The mean facial temperatures in the 808+660 group were 34.9 degrees Celsius (ºC) on the 3rd day and 35 ºC on the 7th day. In the 808 group, the mean temperatures were 34.9 ºC on the 3rd day and 34.9 ºC on the 7th day. Regarding the dimensions of the dental socket, the mean was similar for both groups. Significant differences between the groups were only observed in the pain parameter and only on the 7th day, being greater for the 808+660 group ($p = 0.031$). LLLT with the addition of WL 660 nm associated with WL 808nm was not associated with reduced pain, oedema, or faster closure of the soft tissues of the dental socket following extractions of the lower third molars, in the protocols used.

#25

Water fluoridation surveillance in Goiás - an overview of the drinking water quality surveillance information system (SISAGUA), 2014-2022

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Background: The fluoridation of public water supply is a public health strategy designed to reduce dental caries in the population. To ensure its effectiveness and to reduce the risk of fluorosis, the Brazilian municipalities must carry out the surveillance (heterocontrol) of the method, following the parameters of the Ministry of Health. Monitoring data should be regularly recorded in the Drinking Water Quality Surveillance Information System (SISAGUA). Aim: To describe the use of SISAGUA for the registration of the monitoring of the fluoride parameter in the water supply by the municipalities of the State of Goiás from 2014 to 2022. Methods: Transversal retrospective study using secondary data of the 246 municipalities, obtained in the SISAGUA. The reports of the analyses of the water samples inserted by the monitoring sectors of each municipality were analysed in the period from 01/01/2014 (the year of the system´s start) until 31/12/2022. The statistical analysis was descriptive (n; %). Results: All municipalities (N=246) were registered in the SISAGUA, 238 (96.7%) had potable water, 225 (91.5%) were served by a single sanitation company (Saneago) and 194 (78.9%) were fluoridated. A total of 115 (46.7%) municipalities used the system to feed surveillance data on fluoride at least once in the analysed period and 174 (70.4%) entered control data. The Ministry of Health monitoring target for the period was met by nine (7.8%) municipalities and eight (7%) recorded surveillance data every year. Conclusion: The insertion of data about fluoride levels in the SISAGUA was not carried out according to the standards of the Ministry of Health in most of the municipalities in Goiás between 2014 and 2022. This may compromise the benefits of the water fluoridation strategy to the population.

#26

Inflammatory profile of the gingival crevicular fluid and clinical outcomes of hospitalized patients with COVID-19

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The COVID-19 pandemic showed that oral health plays an important role in systemic health and the prognosis of infected patients. The SARS-CoV-2 has been detected in the oral cavity, including in gingival crevicular fluid (GCF). Thus, the aim of this study was to assess the inflammatory profile of the GCF of COVID-19 hospitalized patients and explore their possible association with the disease severity and status periodontal disease. IL-17A, IL-4, IL-10, IFN-γ, TNF-α, IL-6 e IL-12 cytokines were evaluated by a flow cytometer assay based on beads (CBA). The results showed that the IL-12 levels were higher in patients with worse COVID-19 outcomes, including severe-critical symptoms ($p<0.001$), admission to the intensive care unit (ICU) ($p=0.003$), and death ($p<0.001$). Similarly, IL-6 levels were higher in patients with poorer symptoms ($p=0.029$) and admission to ICU ($p=0.042$). The levels of IL-17A, IFN-γ, TNF-α, and anti-inflammatory cytokines (IL-4 and IL-10) showed no difference in COVID-19 outcomes. Concerning the periodontal status, IL-12 level was higher in patients with periodontitis ($p<0.001$). This emphasize the importance of periodontal environment in the pathogenesis of COVID-19, for the periodontal pockets being reservoirs for SAR-CoV-2, facilitating the viral invasion and enhancing the proinflammatory cytokines production, which can disseminate in the body and contribute to systemic inflammation of critically ill patients with COVID-19. All these findings reinforce the role of periodontitis in this network and the importance of GCF assessment to control the cytokines levels. Hence, this study suggests the role of GCF as a possible inflammatory biomarker and supports the need for periodontal healthcare to avoid aggravations in the inflammatory cascade and prevent the dissemination of subgingival bacteria in patients with COVID-19.

#27

Development of a questionnaire to assess late manifestations of covid-19 in the oral and maxillofacial complex

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Despite the uncertainties surrounding post-COVID, it is known that this condition has a multisystemic nature and that the most affected systems are in the oral and maxillofacial region. However, there is still no robust theoretical- based instrument that assesses the long-term consequences of this disease in this region. The objective of this study was to build and evaluate the evidence of validity of an instrument for evaluating the sequelae of COVID-19 in the oral and maxillofacial complex. A cross-sectional study was carried out with 75 participants. The construction of the questionnaire followed the method proposed by the University of Cambridge (2011), consisting of six stages: definition and elaboration of the construct to be measured, choice of the measurement method, selection and formulation of items, scoring problems, pilot testing and field testing. The Content Validity Index (CVI) > 0.8. In addition, participants were evaluated through an extraoral and intraoral physical examination, saliva collection, and blood typing. Data were stored in Excel and analyzed using IBM Statistical Package for Social Sciences. Descriptive statistics demonstrated that long COVID was observed in 60 (80.0%) patients, and the most prevalent late signs and symptoms were: persistent - cough (21.7%) and headache (12.0%), and new - change memory (29.0%), reasoning difficulties (15.3%) and alopecia (15.3%). The results highlighted the instrument's applicability, comprehensibility, acceptability and relevance for evaluating late oral and maxillofacial manifestations of COVID-19 in the Brazilian adult population, representing the development of a pioneering, pragmatic questionnaire on the topic.

#28

Late oral and maxillofacial manifestations of COVID-19

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Long COVID is characterized by the persistence of signs and symptoms after the acute phase of COVID-19. As it is a new topic, there is a scarcity of studies focused on the effects of this condition on the oral and maxillofacial complex, a region with a high potential for the virus to enter the body and, in addition, those that exist to date have only investigated sequelae in isolation. This study aimed to evaluate the association between late oral and maxillofacial manifestations and sociodemographic and medical factors in individuals with a history of positive diagnosis for COVID-19. A cross-sectional study was carried out with a total sample of 75 participants, these patients being regulated by the Unified Health System (SUS) and non-regulated patients attended at the Outpatient Clinics of the Faculty of Dentistry (FO) of the Federal University of Goiás (UFG), students of undergraduate and postgraduate courses, teachers and administrative technicians from UFG. Data collection included the application of a questionnaire, physical examination, saliva collection and blood typing. The data obtained were analyzed using the IBM Statistical Package for Social Sciences software. Multiple logistic regression was performed to evaluate the variables that could impact the development of long-term COVID-19. The level of significance was considered at $p < 0.05$. In the multiple analysis, being female (OR = 4.16; 95% CI = 1.10–15.78) and being older (OR = 1.05; 95% CI = 1.01–1.10) represented a risk factor for long COVID. Therefore, there was an association between late oral and maxillofacial manifestations of COVID-19 and sociodemographic factors such as sex and age, and such results constitute an essential direction for trends in associations between variables that will be tested in the future in a multicenter study on the same theme.

#29

Parental beliefs in and attitudes toward teething signs and symptoms: a systematic review

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Parents believe that teething is associated with signs and symptoms, which may induce them to give medications that could harm their children. Some children may require alleviation of symptoms and overall attention. The aim was to assess parents' beliefs in and attitudes toward teething. Through electronic databases and gray literature, this systematic review identified cross-sectional studies reporting parents' beliefs in, knowledge about, and attitudes toward the signs and symptoms of primary tooth eruption in children aged between 0 and 36 months. Three reviewers independently selected the studies, collected the information, assessed methodological quality, and checked for accuracy with disagreements solved by a fourth reviewer. The Agency of Research and Quality in Health questionnaire for cross-sectional studies was used for quality assessment. Descriptive analysis with median and interquartile ranges was adopted. Twenty-nine studies comprising 10 524 participants from all geographic regions were included. The methodological quality of the studies was moderate. Most parents have beliefs in signs and symptoms during dentition, the most reported symptom being the desire to bite. Oral rehydration was the most exposed attitude in the studies included. Only a small proportion of parents reported no attitude. The majority of parents believed in at least one sign or symptom associated with teething, and only few of them would do nothing or just wait for the signs or symptoms to pass, with no difference among countries.

#30

The influence of polyethylene fibers insertion on the residual shrinkage stress, cuspal strain, and fracture load of molars restored with two resin composites

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Background of the research area: The Ribbond insertion on cavities preparation walls is known as Wallpapering Technique. Some clinicians are calling this technique as stress-free restoration. However, the shrinkage is inherent in any material of a resinous nature. Objective: To evaluate the effect of the polyethylene fiber insertion (Ribbond) on cuspal strain (CS), polymerization shrinkage (PS) and fracture resistance (FR) in extensive MOD cavities with two types of resin composites. Methods and Materials: An in vitro laboratory study was developed. The composite mechanical characterization of Filtek Z250XT and Filtek Z250XT+ Ribbond set were calculated. Forty mandibular third human molars were selected with similar shape and volume. MOD cavities preparations with 5.0X5.0 mm were prepared. Samples were randomly distributed according to restorative technique (oblique incremental– Filtek Z350XT / bulk– Filtek One Bulk Fill) and to presence/absence of Ribbond (n=10). The CS was measured using a strain gauge test. The samples were submitted to the FR test. The failure mode (FM) was evaluated and classified in repairable and not repairable fracture. Residual shrinkage stresses were analyzed using three-dimensional finite element analysis (FEA – 3D). The stresses were evaluated using the Modified Von Mises criterion. CS and FR data were statistically analyzed using Two-way ANOVA and Tukey HSD (α=0,05). Results: The polyethylene fiber insertion did not influence in CS of molars restored with resin composites (p=0.128). However, the filling technique factor was significant (p=0.022) for CS. The interaction between the Ribbond presence and filling technique factors were not significant (p=0.290). The Ribbond insertion, the filling technique and the interaction between these factors were not significant. The FM predominant were repairable. Conclusions: The Ribbond insertion did not influence the CS and FR in MOD cavities restored with two types of resin composites. The Ribbond insertion decreased the stress at the tooth-restoration interface in FEA.

#31

Effect of Tanshinone IIa sulfonic sodium on LPS-induced osteoclastogenesis

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Tanshinone IIa sulfonic sodium (T06) is the water-soluble derivative of the lipophilic active compound Tanshinone IIa, isolated from Salvia miltiorrhiza (Danshen). This compound is used in traditional Chinese medicine, is approved for cardiovascular treatment, and has antioxidant, anti-inflammatory, and anti-apoptosis action. T06 can selectively inhibit the collagenolytic activity of Cathepsin K (Ctsk), which participates in the degradation of the organic phase of the bone matrix. Unlike other Ctsk Inhibitors, such as Odanacatib, which are associated with many side effects, T06 does not interfere with TGF-β processing. Osteoclast differentiation can be triggered by lipopolysaccharide (LPS), which is present in bacterial infections such as periodontitis. This study aimed to investigate the effect of T06 on LPS-induced osteoclastogenesis in vitro. Bone marrow macrophages were isolated from mice, primed for 24h with RANKL, and exposed to LPS for 4 days in the presence of various concentrations of T06 [0-50μM]. Cell viability was measured by MTT. In a parallel experiment, cells were TRAP-stained, and the cytoskeleton was labeled with rhodamine-labelled phalloidin. Cells were photographed using optical and fluorescence microscopy, and TRAP+ multinucleated cells were counted. Actin rings were visualized in a fluorescence microscope. T06 was not cytotoxic at any of the concentrations tested and positively modulated osteoclastogenesis induced by LPS in culture plates ($p<0.05$) in the concentrations [2.5 and 0.5μM] as assessed by TRAP+ multinucleated cell counting. Treatment with T06 (1μM) did not interfere with actin ring formation. In conclusion, T06 does not inhibit LPS-induced osteoclastogenesis. Further studies are needed to investigate if T06 can impair collagen degradation and bone resorption by LPS-induced osteoclasts.

CATEGORY
Report of international experience

#32
Opportunities for tertiary education: how Brazil became the new frontier for Jamaicans in pursuit of higher learning - a 2-year follow-up

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In 2021, I embarked on a transformative journey by enrolling in the Post Graduate Programme of Dentistry (PPGO) at the Federal University of Goiás (UFG) with support from the Organisation of American States (OAS) and the International Cooperation Group of Brazilian Universities (GCUB), continuing the recent trend for Jamaicans seeking higher education opportunities in Latin America. My experience at UFG has been instrumental in both personal and professional realms, involving adaptation to a new culture and overcoming language barriers. Academically, the program provided abundant opportunities for scholarly engagement, including participation in prestigious conferences such as the inaugural UFG International Meeting on Dental Research and the 2023 Brazilian Society of Dental Research Conference (SBPqO) in Campinas, Sao Paulo. These experiences not only enriched my academic profile but also facilitated the establishment of collaborative links between the Faculty of Dentistry at UFG and the School of Dentistry at the University of the West Indies, fostering potential partnerships for mutual growth and development. Moreover, this chapter of international education and collaboration is far from concluded, as I have been granted the opportunity to extend my academic pursuit with a doctoral degree at UFG, becoming the first international student to enroll in the programme. This continuation underscores the enduring value of international experiences in fostering academic advancement and cross-cultural understanding, not only for individuals but also for broader educational institutions and communities in the Caribbean and beyond.

#33

Researching and practicing oral medicine in Latin America: a Brazilian master student's short-term experience in an Argentinian university

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Research in the area of changes in the stomatognathic system requires integrated knowledge across several specialties. Knowing how stricto sensu higher education institutions in Latin America integrate related areas can be an enriching academic and personal experience. Objective: To report the experience of a master's student in Dentistry at the Federal University of Goiás, in the area of changes in the stomatognathic system, at the Universidad Nacional de Cuyo (UNCuyo), Mendoza, Argentina. Description of the experience: The Montevideo Group Universities Association (AUGM) program, for 20 days, in April 2018, mediated student mobility. Some of the activities were: discussion and monitoring of ongoing research of doctoral students in Cell Biology, at the Institute of Histology and Embryology of Mendoza (IHEM), a Scientific and Technological Center linked to the Faculty of Medical Sciences. Assistance in the Disciplines of Integrated Clinical I and II, Stomatology, the Dental Medicine Course of the Faculty of Dentistry, and experience of the Faculty's Imaging Diagnostic Service. In addition, care at the Dermatology Service and the Oral and Maxillofacial Surgery and Traumatology Service of the Luis Lagomaggiore Public Hospital. Final considerations: During this period, different activities were developed that support the area of changes in the stomatognathic system. Even though some areas were not directly linked to the Faculty of Dentistry, the coordinator of exchange activities understood the importance of experience in different areas for a more complete academic experience. Demonstrating that, even in another country and culture, professional integration is fundamental in training more complete researchers.

#34

Taking a leap into the void to fulfill dreams

Angela Natalia Garnica Hilarión*, Fernanda Paula Yamamoto Silva – UNIVERSIDADE FEDERAL DE GOIÁS.

The human being in his purest essence is dreamer and usually thinks that he can achieve great feats, however, as he grows and becomes mature, he receives blows from reality, where living in a consumerist and highly competitive society is required to fulfill certain canons or social goals to be considered "successful". Following that dreamy instinct, I always thought I could contribute socially by doing science and investigation from my field of action that is dentistry, but unfortunately, in my country which is Colombia it's not very common for these processes to be carried out in my area and in case they occur they are usually very expensive. Which discouraged me and continued my career only clinical. However, 1 year ago I received one of the best gifts of my life, the opportunity to do my master's degree in the University Federal of Goiás and return to my true passion which is science and investigation, and I decided to go out of my comfort zone leaving behind my family, my career and undertaking research in the field of stomatology. Final considerations: Today I'm grateful to be part of a recognized and good concept program, where I can perfect my teaching and research skills, as well as the cultural relationship that is widely enriching in Brazil where we have diversity ethnic, culinary, artistic and social, which has allowed to me develop my social and humanistic skills and broader critical thinking, which is of great importance in my professional training.

#35

Building industry-academy collaboration to advance science and innovation: the ITI-Straumann partnership

Marcela Figueiredo de Paiva*, Nádia do Lago Costa, Cláudio Rodrigues Leles – UNIVERSIDADE FEDERAL DE GOIÁS.

Bridging the gap between academia and the industry is essential to incorporate techniques and products into clinical practice more efficiently, and universities are encouraging scientists and students to take up industry-identified projects into their routine. In 2014, NPPI-UFG started a relationship with a Swiss implant company (Straumann AG, Basel) and its related research support foundation (ITI – International Team for Implantology) through a successful research grant application (US$50K). Straumann is the world's leading implant company, focused on the development and marketing of commercial products, while ITI is a prestigious research funder dedicated to advancing and promoting clinical expertise in implant dentistry through education and research. In 2019, Straumann contacted Prof. Leles through the Global Head of Clinical Operations (Michel Mallaun) and Clinical Study Manager (Jessica Becaud). Straumann demanded a large clinical trial to produce clinical evidence on a novel mini-implant system for overdentures, focusing on testing protocols for flapless surgery and immediate loading. This study was funded by ITI (US$200K) and Straumann (products+instruments). After four years, this study was concluded. It resulted in high-quality evidence published in five articles in high-impact journals, three manuscripts submitted, two master dissertations, one Ph.D. thesis, and a comprehensive study report for regulation purposes in the European Union. In 2022 and 2023, Prof. Leles visited Straumann's headquarters to present the interim and final results and discuss further collaborations. In the last few years, a solid partnership has been constructed based on mutual confidence and transparency. Currently, six Straumann-demanded studies are being conducted in cooperation with Swiss and UK partners.

#36

The UK-Brazil research collaboration on Gerodontology and Prosthodontics: a 7-year institutional report

Isabela Kattan Fontinele Azevedo*, Cláudio Rodrigues Leles, Gerald McKenna – UNIVERSIDADE FEDERAL DE GOIÁS/ QUEEN 'S UNIVERSITY BELFAST.

This report describes the collaboration between NPPI-UFG and the Centre for Public Health of the Queen's University Belfast (QUB), United Kingdom. QUB is an internationally respected university (ranked 85th – Times Higher Education Impact Rankings, 2023), represented by Professor Gerry McKenna, world leader in Geriatric Dentistry and Prosthodontics. The collaboration started in 2017 and continued with joint projects, publications, mutual visits to Belfast and Goiânia, and meetings at the IADR congress. A Memorandum of Understanding between QUB and UFG was signed in 2021, with a 5-year duration. A number of research outputs were produced, including mutual co-authorship in 15 published articles and 8 under review in high-impact journals, 2 book chapters, and several presentations in scientific meetings. Gerry supervised two Brazilian PhD students in Belfast (PDSE-Capes), and co-supervised their doctoral thesis. The cooperation also included Gerry's participation in several research projects with substantial contributions to the experimental design and methods, supervision, drafting papers, and final reports. Gerry is also co-applicant of two clinical research projects funded by the Swiss Foundation International Team for Implantology (ITI grants), and 3 funded projects by FAPEG. Currently, we are leading a large project on the impacts of edentulism and prosthetic rehabilitation, which comprises a series of systematic reviews, preliminary studies, and a large clinical trial. Funding applications were submitted and are under consideration by both UK and Brazilian funding agencies. This cooperation is crucial in outlining innovative and promising strategies for new projects and exchange programs, strengthening connections between the two universities, and positively impacting the quality of research and care for the aging population.

#37

The Brazil-Switzerland connection in Implantology and Geriatric Dentistry: strengthening international partnerships through clinical research at NPPI

Yasmin Milhomens Moreira*, Nádia do Lago Costa, Cláudio Rodrigues Leles – UNIVERSIDADE FEDERAL DE GOIÁS.

Switzerland is renowned for its excellence in dentistry and is internationally recognized for its educational and research institutions. Leading researchers from three of the four Swiss dental schools, located at the Universities of Geneva (UG), Zurich (UZ), and Bern (UB), have been conducting collaborative studies with the NPPI-UFG (Research Center for Prostheses and Implants) over the past eight years. Their focus has been on improving patients' quality of life through innovative treatment approaches. The QS World University Rankings for Dentistry 2023 placed UB, UZ, and UG in 7th, 8th, and 25th positions, respectively. The NPPI has built strong and close collaborations with department heads Martin Schimmel (UB), Frauke Müller (UG), Murali Srinivasan (UZ), and other associates such as Manrique Fonseca (UB), Sabrina Maniewicz (UG), and Samir Abou-Ayash (UB). These collaborations span various aspects of oral rehabilitation and gerontology. This Brazil-Switzerland collaboration has produced 23 PubMed-indexed articles, seven submitted manuscripts, two student exchanges in Bern funded by Capes-PDSE and the Swiss government, three multicenter clinical trials, and ongoing clinical research projects funded by ITI. There have been five visits to Brazil over the past five years. Professor Cláudio Leles has received the status of Adjunct Professor in the Department of Reconstructive Dentistry and Gerodontology at the University of Bern, and Guest Professor in the Clinic of Special Care and Geriatric Dentistry at the University of Zurich. Additional research projects are planned for the coming years, including three studies funded by Straumann/ITI that incorporate digital dental protocols, data management, and exchange using the RedCap platform, as well as planned visits of Swiss partners to Goiânia.

#38

Edentulism and prosthetic rehabilitation: global perspective and a PhD international student´s family challenges

Luciana de Moura Brito*, Cláudio Rodrigues Leles, Gerald McKenna, Emma Hunter, Nathan Congdon – UNIVERSIDADE FEDERAL DE GOIÁS/ QUEEN'S UNIVERSITY BELFAST.

In my first year of the doctorate at the Federal University of Goiás (UFG), I was invited to be part of a multicenter international research about edentulism which allowed me an experience of a sandwich PhD at Queen's University of Belfast (QUB). It was a process with numerous steps and requirements, but it went fairly quickly. We arrived in August to set up housing and family adjustments with a mix of expectations, joys, and uncertainty about what awaited us. Faced with an already established edentulism project, one of the most common global disabilities, I began my preliminary searches on 8 databases (2229 articles) with assistance and training from a specialized health science librarian with a defined review question: what are the most commonly used and most successful treatment interventions for edentulous patients globally? This much-desired international experience provided us with experiences about adversities with climate, language, multicultural cuisine, and one particular challenge for my children: the proximity with refugee classmates from countries at war. These unique moments brought us even closer. Last month in Belfast, I obtained a protocol research publication in PROSPERO, a systematic review platform, CRD42024483759. Furthermore, I could see the grandeur and modernity of QUB, a private and high-cost institution, of which I had the privilege of being part. Also, I can say that Brazilian researchers and professionals are at the forefront of international knowledge and techniques.

#39

Contribution of the postgraduate program in dentistry in Brazil to academic and professional growth

Egon Bernardo Mualeite*, Cláudio Rodrigues Leles, Nádia do Lago Costa – UNIVERSIDADE FEDERAL DE GOIÁS.

After participating in a selection process in Mozambique in 2022, I was approved for the postgraduate program in Dentistry, master's level, at the Faculty of Dentistry at the Federal University of Goiás (PPGO-UFG), starting in 2023. My arrival in Brazil took place in March 2023. At first, I faced several challenges, including culture, food, time zone, and climate. The subjects offered by PPGO-UFG were very useful for my academic and professional growth. During this period, I made great progress in scientific research methodologies. For the first time, I had in-depth knowledge of conducting randomized clinical trials. The Biostatistics discipline helped my academic growth, bringing theoretical-practical concepts to the description and analysis of data in scientific research. I had the privilege of learning to operate statistical software for the first time. The subject of Oral Diagnosis brought me real clinical situations in which I needed to intervene, specifically in cases of mouth lesions whose management was surgical excision. I had my first experience performing a biopsy in Brazil. The subject Education in Higher Education added more value to my teaching practice, which I intend to take with me back to Mozambique. The teaching internship contributed positively to developing teaching material, teacher-student relationships, and student assessment methods. The program's professors are highly qualified to teach the subjects and guide research. The colleagues and professors are very hospitable and welcoming. Much can be said about this experience, but the learning gained will be part of this little professional for life.

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