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Dr. Ambedkar International Centre, New Delhi February 15th–16th, 2025

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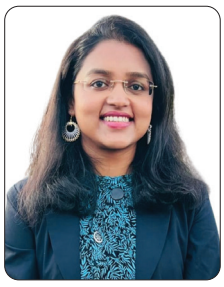
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GUEST EDITORIAL



Dear Colleagues,

Strengthening Oral Health Surveillance in India: A Critical Step Towards Evidence-Based Policy and Action

Oral diseases such as dental caries, periodontal disease, tooth loss, and oral cancers remain among the most prevalent health conditions worldwide, affecting an estimated 3.5 billion people - disproportionately concentrated in middle-income countries. The Global Oral Health Status Report 2022 by the World Health Organization (WHO) underscores the urgent need to prioritize oral health as a core component of public health systems. In India, the situation is especially concerning, with per capita dental expenditure being less than one US dollar annually - among the lowest globally - despite a substantial burden of untreated dental caries affecting over 40% of children and 30% of adults.

The current oral health data landscape in India is fragmented, primarily based on isolated, hospital-based, or regional studies. A robust oral health surveillance system is essential to generate reliable, population-level data. Such systems not only track disease prevalence and risk factors but also allow for targeted interventions and equitable allocation of healthcare resources. Given the strong link between oral health and overall wellbeing, including its impact on quality of life, this becomes a national priority. Recognizing this, the World Dental Federation (FDI) has called for the development of national oral health indicators and comprehensive surveillance systems as part of its 2030 vision for universal oral healthcare. In line with these global goals, the FDI launched the Oral Health Observatory (OHO) initiative in 2014, aimed at generating standardized, comparable data on oral health across countries. In India, the Indian Dental Association (IDA) collaborated with FDI to roll out the OHO project at the national level. Using FDI's digital app-based platform, data were collected from 1,049 patients across private dental clinics, providing valuable insights into oral health status, care-seeking behaviours, and quality of life metrics.

The findings were revealed that over 80% of participants had periodontal disease. The mean age was 38.6 years, and males accounted for 61% of the sample. Only 51.5% had visited a dentist in the past year, with key barriers being the perceived absence of symptoms and lack of time. Alarmingly, preventive care was markedly under-emphasized, and daily sugar consumption and tobacco use were high. The filled component of dental status was five times lower than decayed and missing components—signifying inadequate treatment completion and poor oral health-seeking behaviour.

These findings were deliberated at a 2023 national workshop conducted by IDA in collaboration with FDI, Haleon and many important stakeholders. The consensus called for adapting the questionnaire to the Indian context, expanding the survey to a more representative population, and building a sustainable national surveillance model. Through this, the IDA aims to bridge current evidence gaps and drive meaningful oral health reforms. A future rooted in evidence, policy alignment, and community engagement is not just aspirational—it is urgently needed.

Best Regards

Dr. Lakshmi Balraj
Chief Research Officer, IDA

FROM
IDA Head Office



Subhra Nandy
President, IDA



Ashok Dhoble
Hon.Sec.General, IDA

Dear Colleagues,

It is with immense pride that we present this special issue of the Journal of the Indian Dental Association (JIDA) dedicated to the groundbreaking Global Conclave on Oral Health Innovation & Research that we successfully hosted on February 15-16, 2025, at Dr. Ambedkar International Centre, New Delhi.

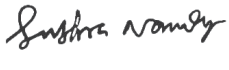
Our vision to establish this Conclave took root in 2023, and we were deeply honored to receive recognition and encouragement from the Honorable Prime Minister of India, Shri Narendra Modi. His inspiring message that "oral health is among the most significant indicators of good health and well-being" and that "the participation of innovation heads, industry associations, investors, young entrepreneurs and manufacturers will help in learning from each other's experiences" provided us with tremendous motivation to bring this vision to fruition.

Hon. Prime Minister rightly noted that "dentists not just help fight dental diseases and ailments, but also help improve the overall quality of life." This profound understanding of our profession's impact has inspired us to create a platform that truly fosters advancement in oral healthcare, bringing together brilliant minds from across the globe to exchange knowledge, share innovations, and forge meaningful collaborations.

JIDA has always been committed to disseminating quality scientific information, and this special issue takes that commitment further by showcasing the remarkable innovations emerging from within our country. We give a special ode to all abstract winners whose exceptional work is featured comprehensively in these pages. This special issue encompasses detailed highlights of the Conclave, providing readers with valuable insights into the cutting-edge developments shaping our profession.

Our sincere gratitude to the dedicated editorial team of JIDA and the tireless organizing committee whose seamless integration of efforts made this Conclave a grand success. Together, we continue to build a robust foundation for scientific innovation and excellence in dentistry, contributing to the Prime Minister's vision of building a healthier nation.

As you peruse this issue, we hope you find inspiration in the collective achievements of our dental community and join us in our ongoing journey toward advancing oral healthcare for all.



Subhra Nandy
President, IDA



Ashok Dhoble
Hon. Sec. General, IDA

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PA01

Bridging Tradition and Technology: AI-Based Real-Time Feedback for Dental Wax Carving

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Purpose

Dental wax carving is a fundamental exercise in dental education, essential for understanding tooth morphology and developing manual dexterity for clinical practice. Traditional teaching methods often posed challenges, such as limited individualized guidance and subjective evaluation. To overcome these limitations, this study developed an AI-driven application designed to provide real-time guidance, step-by-step tutorials, and standardized assessments for dental wax carving.

Methods

Deep Machine Learning and conventional teaching method, the AI-based application utilized machine learning and image recognition algorithms to analyze wax carvings against ideal anatomical models, offering personalized feedback and objective evaluation. This technology enhanced students' learning experiences by improving precision, reducing inconsistencies in assessment, and fostering independent skill development.

Results

A prototype of the application was tested on a sample of first-year Bachelor of Dental Surgery (BDS) students, comparing AI-driven training with conventional methods. Statistical analysis, including t-tests and regression models, was conducted to evaluate improvements in carving accuracy, efficiency, and user satisfaction. The results demonstrated that students using the AI-assisted approach achieved greater precision and consistency in their carvings compared to those relying on traditional methods. But we would like to mention that prototype was only tested for initial modules and submodules hence based on these we can not draw any significant conclusions about the real time assessment.

Conclusion

By bridging traditional and modern teaching approaches, this innovation successfully transformed dental education, making skill acquisition more accessible, standardized, and effective, ultimately better preparing students for clinical practice. Development of AI driven app is helpful but dexterity places an important role. AI machine needs to developed and tested for better understanding.

Key Words

Carving, Dentistry, Education

PA02

The phenomenological approach in Dentistry - A narrative review

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Purpose

Phenomenology is a branch of philosophy that focuses on human lived experience. Illness including dental diseases can affect this living experience. Within the dental literature, there is very little reported on the use of phenomenology compared to other healthcare sciences. Hence, the aim was to review the literature and provide an overview of various applications of phenomenology in dental research.

Methods

This study was a narrative review using literature in the last 10 years identified by web-based search on PubMed and Scopus using keywords. A total of 33 articles that were closely related to the field and application in dentistry were included. The methodology, main results, and future research recommendations, if applicable, were extracted and reviewed.

Results

The authors in this study had identified several areas such as orofacial pain and pain control research, dental anxiety, dental education, oral healthcare perceptions and access,

Conclusions

There are several advantages of using the phenomenological research method, such as the small sample size needed, the diverse and unique perspective that can be obtained and the ability to improve current understanding, especially from the first-person.

Key Words

Experience, Dentistry, Individual perceptions, Oral Healthcare, Phenomenology, Qualitative research

PA03

Qualitative Exploration of Oral Health Integration into School Health: A Thematic Analysis Approach

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Purpose

This qualitative study aimed to explore the barriers, facilitators, and feasibility factors for incorporating oral health into school health programs in Bengaluru, India.

Methods

In-depth interviews were conducted with 26 key stakeholders, including school administrators, teachers, parents, and healthcare professionals. Data was analyzed using thematic analysis to identify recurring patterns and insights.

Results

Findings revealed significant barriers including inadequate resources, limited oral health awareness among stakeholders, and insufficient focus on oral health within existing curricula. Facilitators included strong administrative support, active student participation, and community collaboration. The study highlighted the importance of innovative teaching methods and comprehensive health curricula in fostering sustainable oral health practices.

Conclusions

There is a need to address resource gaps, enhance stakeholder awareness, and strengthen administrative support to overcome integration barriers. The research provides actionable recommendations for designing effective oral health programs tailored to urban contexts, aiming to promote lifelong health benefits and reduce healthcare costs.

Key Words

Integration barriers, Oral health, Qualitative study School health programs, Thematic analysis, Urban health

Category: Postgraduates

PA04

Transforming Facial Landscapes With Intrusion Appliance

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Purpose

Open bite correction is one of the most challenging orthodontic procedures due to its multifactorial etiology and the limitations of conventional treatment methods. The introduction of temporary anchorage devices (TADs) has significantly improved the management of these cases by offering more precise and minimally invasive approaches. This case report highlights the innovative use of bucco-palatal implant anchorage for the successful correction of an open bite through anterior intrusion.

Methods

A 23-year-old female presented with a chief complaint of an anterior open bite and difficulty in chewing. Clinical examination revealed a significant anterior open bite of approximately 3 mm, with supra-erupted maxillary posterior buccal segments. The patient also exhibited a hyperdivergent skeletal pattern and increased lower facial height. Cephalometric analysis confirmed an increased mandibular plane angle (hyperdivergent pattern), along with supra-eruption of the maxillary posterior buccal segments, contributing to the open bite.

The treatment approach aimed at correcting the anterior open bite by intruding the posterior buccal segments and normalizing the vertical dimension. Posterior buccal segments were intruded by placement of zygomatic plates buccally and implants palatally and the force of 150 gms on both sides was applied through coil springs buccally and elastic chains palatally.

The patient was reviewed every 4 weeks to monitor the progress of posterior intrusion, assess the stability of the anchorage, and make necessary adjustments to the force application. The intrusion phase lasted for approximately 8 months, followed by a finishing phase to refine occlusion and ensure the stability of the bite.

Results

The open bite was successfully corrected with significant posterior intrusion, improving anterior occlusion and facial aesthetics. Post-treatment cephalometric superimpositions confirmed there is a reduction in overbite by 5 mm, and SN-Go-Gn from 34 to 29 degrees and a decrease in ANS-Me from 66 mm to 60 mm.

Conclusion

Buccal zygomatic plate anchorage, in conjunction with palatal implants, offers a predictable and effective solution for open bite correction. This case demonstrates its potential for achieving stable, functional, and aesthetically pleasing results.

Key Words

Bucco-palatal implant, Open bite correction, Orthodontic biomechanics, Skeletal anchorage, Zygomatic plate

PA05

QR Medicines – The Upcoming Revolution In The World Of Medicine

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Today's problem

In this modern era, the proverb "Food is Medicine" has evolved into "Medicine is Food," reflecting our increased reliance on medications in our daily lives. This shift underscores the importance of having essential knowledge about the medications we consume, such as their expiry date, indications, contraindications, and maximum retail price—information typically found on the back of the tablet strip.

However, in countries like India, purchasing a full strip of tablets can be challenging for many due to economic constraints. Often, people buy just a few tablets at a time, which results in a lack of crucial information that would typically be available on the full strip. This situation poses significant risks, as people may not have access to vital details that ensure safe and informed medication use.

Proposed Solution

To address this issue, I propose incorporating QR codes on the back of each tablet covering in all the tablet strips. By scanning these QR codes with a smartphone or other device, individuals can instantly access comprehensive information about the medication. This information could include dosage instructions, manufacturing and expiry date, potential side effects, contraindications,

interactions with other drugs, and maximum retail price. Additionally, the information could be available in multiple languages, catering to diverse populations and ensuring accessibility for all.

Implementing QR codes would not only bridge the information gap but also empower individuals to make informed decisions about their health. It would reduce the risk of medical errors, enhance patient safety, and ultimately promote better health outcomes.

This approach leverages technology to provide an innovative solution to a pressing problem, making essential medical information readily available to everyone, regardless of their economic status.

Key Words

Basic Information of Tablets, Drug Packing and QR Codes.

PA06

Comprehensive Kinematic Jaw Analysis after Total Temporomandibular Joint Replacement in Ankylosis Patients

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Background

Temporomandibular joint (TMJ) ankylosis is a debilitating condition where the mandible fuses to the condylar fossa via bony or fibrotic tissues, severely limiting mouth opening and essential functions like eating, speaking, and oral hygiene. Management aims to restore function, correct facial deformities, relieve airway obstruction if present, and prevent re-ankylosis. While total joint reconstruction (TJR) is the gold standard among treatment options, there is a lack of studies evaluating post-surgical mandibular motion patterns in these patients.

Objectives

• Primary Objective: To evaluate 3D kinematics of mandibular border movements following unilateral and bilateral total TMJ replacement surgery using a 3D jaw tracker.

• Secondary Objectives:

- To assess muscle activity using electromyography (EMG)
- To evaluate biting force distribution using T-Scan technology

Method

- 3D Jaw Tracker: A magnet attached to the mandibular central incisors was used to record vertical, anteroposterior, and lateral mandibular motions. Measurements included maximum inter-incisal opening (MIO), maximum protrusion, lateral excursions (right and left), mandibular movement velocities, and overall motion.
- Electromyography (EMG): Bilateral EMG signals were recorded from the masseter and anterior temporalis muscles.
- T-Scan: Biting force distribution was assessed using T-Scan technology.

Results

- Mandibular kinematics measurements facilitated accurate estimation of occlusal and mandibular loading during static and dynamic tasks.
- Average mouth opening ranged from 25 mm to 49 mm. Lateral excursions averaged 2.2 mm on the left (1.1–5.5 mm) and 3.58 mm on the right (1.7–19.8 mm). The average mandibular closing velocity was 188.3 mm/sec, and the opening velocity was 246 mm/sec.
- T-Scan data indicated higher force distribution on the ipsilateral prosthetic condyle, while EMG showed greater muscle activity in the contralateral non-prosthetic condyle during rest and clenching in unilateral TJR cases. In bilateral TJR patients, muscle synergy and activity were reduced on both sides.

Conclusion

- Total TMJ replacement effectively restores mandibular motion, with measurable improvements in mouth opening and functional movements.
- Force distribution patterns differ between unilateral and bilateral TJR, with significant implications for prosthetic load management and muscle adaptation.
- Bilateral TJR cases demonstrate reduced muscle activity and synergy, emphasizing the need for targeted postoperative rehabilitation.

This study underscores the value of advanced diagnostic tools like 3D jaw tracking, EMG, and T-Scan in evaluating and optimizing outcomes in TMJ ankylosis patients undergoing TJR.

Key Words

Temporomandibular joint ankylosis, total joint replacement, mandibular kinematics, 3D jaw tracking, electromyography (EMG), T-Scan, occlusal force distribution, muscle activity, prosthetic condyle, postoperative rehabilitation.

Category: Undergraduates

PA07

Assessing Feasibility and Applicability Of FDI Approved Sustainable Dental Practice in Delhi – A Hybrid Study Design

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Purpose

To assess the importance of sustainable dentistry amongst practicing dentists in Delhi.

Methods

A close-ended, self-administered questionnaire was circulated amongst 3000 practicing dentists across Delhi registered under the Indian Dental Association (IDA), of which 479 responded. A cross-sectional questionnaire-based survey was conducted alongside focus group discussions, forming a hybrid study design. The questionnaire assessed knowledge and barriers in delivering sustainable oral healthcare across four domains: Preventive Care, Operative Care, Integrated Care, and Ownership of Care. A pilot study was conducted prior to the main survey. Ethical approval was obtained, and informed consent was collected. Statistical analysis employed non-parametric tests, while qualitative feedback was explored via group discussions.

Results

479 practicing dentists participated in the study out of which 57% were females and 43% were males. More than 70% of the respondents were of less than 40yrs of age. Over 70% of the participants were familiar with FDIs sustainable dentistry concept and practiced sustainable dentistry. Nearly 70% of the respondents believed that the infrastructure layout of their clinic is amenable to sustainable dental practice and were willing to make changes to make it more sustainable. Almost 50% of dentists felt that they don't have enough training and knowledge about sustainable dentistry. Almost 95% participants gave importance to educating patients regarding preventive dental care. Majority of the participants felt that they face lapses in BMW management due to the collection agencies being irregular. 40% participants felt that it is expensive and time consuming to test and treat water lines frequently. More than 50% are not practicing digital impression making due to the high cost of the armamentarium and unwillingness of the patients to pay extra for such services. Almost 50% of the practices would generate single use plastic waste on a daily basis as other options were expensive. Nearly 32% participants felt that the patients expect them to use new ppe kits every time. As per our study, 91.4% of the respondents did not practice sustainable dentistry. There was a significant correlation between the longevity of dental practice and the age of the practitioner with them practicing sustainable dentistry by adopting preventive dentistry, following effective biomedical waste management, promoting sustainable practices in their operating environment and reducing generation of single use plastic. It was found that there is a significant relationship between years

of practice and sustainability of a dental practice. Practitioners aged 41-50 years have the highest percentage of sustainable dental practices. Focussed group discussions were held to tackle the barriers faced by the dentists and appropriate solutions were discussed.

Conclusion

Our study reveals that a huge majority of dentists in Delhi do not practice sustainability. The main reasons for this are the lack of appropriate training and knowledge regarding sustainability, lack of resources and the lack of support by regulatory agencies in spreading awareness, providing subsidies, strengthening rules and regulations regarding sustainability. The need of the hour is to spread awareness amongst dentists as well as patients, provide adequate resources and formulate a plan on how to adopt sustainability in dentistry.

Key Words

Biomedical waste management, Dental practice, Environmental sustainability, FDI guidelines, Preventive care, Sustainable dentistry

PA08

Positioning clamp for fixed orthodontic retainers

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Background

The retention phase is as important in orthodontic treatment as the active phase. Various types of retainers exist, including Hawley retainers, clear retainers, bonded/fixed retainers, vacuum-formed retainers, and Essix retainers. Bonded retainers offer advantages over conventional removable retainers due to their invisibility from the front, reduced need for patient cooperation, and potential for long-term (up to 10 years) or permanent retention. The positioning of a bonded retainer is customized based on the patient's occlusal traits, such as bite depth and the presence of soft tissue. However, placing a fixed retainer can be challenging due to the difficulty in securing its position before initial bonding.

Purpose

This paper describes the design of a clamp/clip/clasp intended to hold a fixed/bonded/permanent orthodontic retainer in place during composite bonding, preventing displacement of the retainer wire.

Method

The device consists of a stainless steel clip with two arms designed to hold the retainer wire against the teeth. A spring and lever mechanism within the clip allows it to grip both the wire and the tooth. Pinching the clip's prongs will open it; releasing the prongs will allow the spring to close it, securing the wire. The arms are angled at 110 degrees relative to the clip's body to avoid interference with the orthodontist's visibility and accessibility. The arm in contact with the retainer wire features serrations for enhanced grip, while the opposing arm has a slightly curved plate to properly hold the teeth. This design aims to stabilize the fixed retainer, enabling composite bonding at the desired position.

Conclusion

This clamp is expected to enhance the stability of the retainer wire and reduce the time required for fixed retainer placement. It is envisioned as a commercially available, autoclavable, and reusable product made of stainless steel.

Patent no.: IN202511012542 (Intellectual property in India)

Key Words

Bonded retainer, Clamp, Clasp, Clip, Fixed retainer, Orthodontics, Permanent retainer

PA09

AI Based Probe To Measure Width and Depth of A Cavity

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Purpose

Accurate measurement of cavity width and depth is essential for precise diagnosis, treatment planning, and successful restoration outcomes in dentistry. This study introduces an innovative artificial intelligence (AI)-based probe designed to measure cavity dimensions in real-time with high precision, enhancing clinical decision-making and outcomes.

Methods

The AI-based probe combines advanced AI algorithms with high-resolution sensors, utilizing both ultrasonic and optical technologies to capture spatial data. The data is processed by AI, trained on a large dataset of cavity profiles, to compute cavity dimensions with sub-millimetre accuracy. The device features an intuitive interface that displays measurements and visual reconstructions in real time.

Results

Preliminary trials demonstrate that the AI-based probe achieves superior accuracy and reliability compared to traditional measurement techniques. The non-invasive design minimizes patient discomfort and streamlines clinical workflows.

Conclusion

The AI-based probe represents a significant advancement in precision dentistry, offering applications in caries detection, cavity preparation, and treatment evaluation. Implications: Future research will focus on expanding the probe's capabilities for complex scenarios and integrating it with digital workflows for comprehensive dental care. This innovation has the potential to set new standards in operative dentistry.

Key Words:

Artificial Intelligence (AI), Cavity Measurement, Ultrasonic and Optical Technologies, Real-Time Assessment, Precision Dentistry

Poster Presentations

Category: Faculty & Independent Researchers

PO01

Mobile Geriatric Oral Health Care Unit

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Former Professor and Head Oral Medicine and Radiology, Chennai

Purpose

Accurate measurement of cavity width and depth is essential for precise diagnosis, treatment planning, and successful restoration outcomes in dentistry. This study introduces an innovative artificial intelligence (AI)-based probe designed to measure cavity dimensions in real-time with high precision, enhancing clinical decision-making and outcomes.

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Key Words:

Artificial Intelligence (AI), Cavity Measurement, Ultrasonic and Optical Technologies, Real-Time Assessment, Precision Dentistry

PO02

Mandibular defect reconstruction using 3D printed titanium reconstruction plate

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AIIMS – CAPFIMS

Purpose

Advanced imaging modalities, Virtual surgical planning and 3D printing technology over the decade has made reconstructive mandibular surgery predictive and accurate. Hereby presenting a case of mandibular defect secondary to resection in a 24-year-old female who had fibro osseous lesion. The patient was referred for condylar repositioning and defect bridging before free fibula grafting.

Methodology

The patient had central mandibular defect along with bilateral condylar sag and Antero superiorly displaced ramal fragments owing to masticatory muscle pull. Computed Tomography images in DICOM (Digital Imaging and Communications in Medicine) format was utilised for 3D virtual Plan. Bilateral condylar repositioning in glenoid fossa was performed in all three dimensions. Another patient mandible was utilised as a template for implant designing. Screw positioning guides and reconstruction plate were designed. Implants and guides fabricated using DMLS (Direct Metal laser Sintering) and SLS (Selective Laser Sintering)

technology. Surgical site accessed through pre-existing scar and masticatory muscles were stripped to allow ramal mobilisation and repositioning of condyle bilaterally. Screw guides used to predetermine implant fixation holes. Suprahyoid muscles slinged to the plate. Sterile implant fixed in predrilled holes and closure done in layers.

Results

Post surgical wound healing was satisfactory. The 3D printed reconstruction plate restored facial profile, good chin throat angle and the mandibular form for future fibula graft. Functionally the patient had improved airway and bilaterally repositioned the ramus condyle unit.

Conclusion

3D printed mandibular reconstruction plate provides predictive results in complex mandibular reconstruction cases. These implants help repositioning of bony segments with greatest accuracy and benefit in achieving superior aesthetic results.

Key Words

3D printed reconstruction plate, Patient Specific mandible defect bridging plate, Virtual Surgical Planning

PO03

"Revisiting Coronectomy" with Guided Bone Regeneration

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Introduction

Impacted third molar teeth are a common clinical condition, often leading to significant pain, infection, and complications, such as inferior alveolar nerve (IAN) injury, which can significantly affect patient quality of life. Coronectomy, which involves removing the crown and coronal root while preserving the apical root, reduces the risk of nerve damage. However, literature shows that root migration is a significant problem, with up to 53% of cases requiring re-surgery for root removal. Guided Bone Regeneration (GBR), using biomaterials, may prevent root migration and improve bone healing. This study evaluates the role of GBR in preserving IAN function and preventing root migration after coronectomy.

Aim

This randomized, double-blind, split-mouth study aims to compare root migration and root exposure after coronectomy with and without GBR in 20 patients with impacted mandibular third molars. The primary outcome measures include root migration and root exposure. Secondary outcome measures include pain, IAN deficit, wound infection, wound dehiscence, and residual root mobility.

Material and Methods

Twenty patients with impacted mandibular third molars and IAN involvement underwent bilateral coronectomy. GBR was applied to one side, and the contralateral socket served as a control. Over six months, patients were evaluated for root migration, root exposure, IAN function, pain, wound infection, wound dehiscence, and residual root mobility. At the end of the six-month period, OPG and CBCT were done to assess primarily root migration and also bone regeneration.

Results

Coronectomy, both with and without GBR, preserved IAN function in all patients, with no significant nerve damage observed. The most common impaction pattern was mesioangular. The most frequent sign of nerve involvement on OPG was interruption of the superior border of the inferior alveolar canal. The mean root migration in the control site (without GBR) was 2.6 mm at the six-month follow-up, whereas in the GBR-treated site, no root migration was observed, suggesting the superior outcome of GBR in preventing migration.

No cases of wound infection, wound dehiscence, root exposure, or residual root mobility were observed. Pain was mild, present only during the first week, and resolved without issue. Bone regeneration was significantly enhanced in GBR-treated sites, with improved bone volume and quality observed on OPG and CBCT.

Conclusion

Coronectomy with GBR is a highly effective and innovative technique for managing impacted third molars. This approach not only ensures the preservation of the inferior alveolar nerve (IAN) but also provides substantial pain relief and remarkable improvement in bone healing. The incorporation of GBR plays a pivotal role in preventing root migration and significantly enhancing the healing process. With enhanced bone regeneration and superior stabilization, this technique emerges as a promising and reliable option, especially in high-risk cases. This approach is poised to be a game-changer in dental surgery, offering unparalleled benefits.

Key Words

Coronectomy, Guided bone Regeneration, Impacted mandibular Third molar

Category: Postgraduates

PO04

Accuracy of Artificial Intelligence in answering questions related to NAM

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Introduction

Artificial Intelligence (AI) has emerged as a valuable tool in various fields, including healthcare. This study evaluates the accuracy of five AI models—ChatGPT, Microsoft Copilot, Meta AI, Gemini, and Claude AI—in answering questions related to nasoalveolar moulding (NAM), a presurgical orthodontic technique for cleft lip and palate management.

Material and Methods

The responses to 28 questions related to NAM were evaluated by two experts using a modified Likert scale. The readability and reading grade levels were also evaluated. The inter-rater reliability was assessed using Cohen's kappa.

Results

The accuracy scores varied significantly among the models. Claudi Ai demonstrated superior depth and clarity in responses, while Meta AI exhibited limitations in comprehensiveness. Inter-rater reliability was high ($\kappa = 0.92$), confirming consistent evaluations.

Discussion and Conclusion

AI models show promise in providing accurate information on NAM, with Claudi AI outperforming others. However, variability in performance highlights the need for continuous refinement to ensure reliability in clinical contexts.

Key Words

Artificial Intelligence, Cleft lip and palate, Nasoalveolar moulding, , Virtual Assistants

PO05

Clinical Applications and Therapeutic Role of Orthodontic Splints in Occlusal and Parafunctional Management

Dr. Rahul Paul

Dr. Deepti Yadav

Dr. Ish Kumar Sharma

Dr. Isha Singh[1]

[1]*Inderprastha Dental College and Hospital Ghaziabad*

Purpose

The aim of this report is to explore the clinical significance, indications, and therapeutic applications of orthodontic splints, particularly in managing temporomandibular joint disorders (TMD), bruxism, and other parafunctional conditions, along with their role in occlusal correction and post-surgical stabilization.

Methods

A clinical case report approach was employed to demonstrate the functional use of an occlusal splint in a patient with bruxism. The occlusal adjustments

were guided by T-Scan analysis to achieve optimal occlusion. The case emphasized the selection and customization of the splint type, particularly an Anterior Midline Point Stop (AMPS), to reduce temporalis muscle activity. The classification of splints-permissive, directive, and pseudo-permissive-was also reviewed in the context of various clinical indications.

Results

The use of an occlusal splint, specifically the AMPS design, significantly reduced contraction activity of the temporalis muscle and improved occlusal stability. The patient showed symptomatic relief from bruxism-related discomfort, demonstrating the splint's effectiveness as a non-invasive intervention. The verticalization splint additionally served as a reliable guide in restoring vertical dimension without the complexity of traditional occlusal recording methods.

Conclusion

Orthodontic splints serve as versatile and effective tools in the management of TMDs, parafunctional habits, and occlusal instability. Customized selection and accurate adjustment of the splint design are critical for maximizing therapeutic benefits and patient comfort. AMPS and verticalization splints show particular promise in neuromuscular relaxation and vertical dimension restoration, respectively.

Key Words

AMPS, bruxism, occlusal adjustment, occlusal stability, Orthodontic splints, parafunctional habits, T-Scan, TMD, verticalization splint

PO06

Clinical Applications of Infrazygomatic Crest and Buccal Shelf Implants in Orthodontics: A Comprehensive Review of Extra-Alveolar Skeletal Anchorage

Dr. Rahul Paul

Dr. Deepti Yadav

Dr. Ish Kumar Sharma

Dr. Shahana Khan[1]

[1]*Inderprastha Dental College and Hospital, Ghaziabad*

Purpose

The aim of this study is to explore the clinical significance, placement protocols, and treatment outcomes associated with infrazygomatic crest (IZC) and buccal shelf (BS) implants, which serve as extra-alveolar temporary anchorage devices (TADs) in orthodontics. These devices provide a reliable alternative to traditional anchorage methods by offering superior biomechanical control, especially in the management of complex orthodontic cases including open bite, Class II, and Class III malocclusions.

Methods

A narrative review was conducted based on existing literature and clinical evidence regarding the use of IZC and BS implants. The study outlines anatomical landmarks, insertion protocols, recommended implant dimensions, and indications for each anchorage site. Emphasis was placed on utilizing cone-beam computed tomography (CBCT) for pre-operative evaluation, which includes assessment of bone density, implant site accessibility, and proximity to critical anatomical structures. Clinical case examples were used to illustrate the versatility and effectiveness of these anchorage methods.

IZC Implant Placement: Implants are inserted in the dense cortical bone of the infrazygomatic crest, typically between the first and second maxillary molars, above the mucogingival junction.

BS Implant Placement: Implants are placed in the buccal shelf region of the mandible, distal to the mandibular first molar and anterior to the external oblique ridge.

Results

Both IZC and BS implants demonstrated high success rates when placed with appropriate technique and imaging support.

IZC Implants: Enabled effective en-masse retraction of anterior teeth, molar distalization, intrusion of posterior teeth for open bite correction, and full-arch distalization in non-extraction cases.

BS Implants: Proved valuable in treating Class III malocclusions, enabling distal movement of the entire mandibular arch without extractions or surgery.

Conclusion

Infrazygomatic crest and buccal shelf implants have

revolutionized skeletal anchorage in orthodontics. Their extra-alveolar positioning allows for safe and predictable anchorage, while avoiding root damage and reducing the need for patient compliance associated with conventional anchorage methods like headgear or elastics. These implants have become indispensable for achieving complex tooth movements and enhancing the efficiency and effectiveness of orthodontic treatment. Individualized treatment planning, accurate imaging, and anatomical assessment are essential to maximize their success.

Key Words

Buccal Shelf (BS) Implants, CBCT in Orthodontics, En-Masse Retraction, Extra-Alveolar Anchorage, Infrazygomatic Crest(IZC) implants, Molar Distalization, Non-Compliance Anchorage, Orthodontic Biomechanics, Skeletal Anchorage, Temporary Anchorage Devices (TADs)

Category: Undergraduates

PO07

SPARKLE SAFE POD – Where cleanliness meets convenience

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[1]*Manav Rachna Dental College, Delhi*

Background

The concept was motivated by the difficulties experienced by people who wear aligners , dentures and retainers. For those with hectic schedules, in particular, the effectiveness and simplicity of traditional ways of cleaning and maintaining these dental appliances are frequently lacking. By offering a digital, portable solution that combines advanced technology with usefulness, the invention seeks to speed-up this procedure. This innovation makes it simpler for customers to properly maintain their dental appliances whether at home, at work, or while on the go by utilizing 3D printing and vibrating motors to provide a thorough cleaning experience. Enhancing oral hygiene practices and improving the user experience.

Aim

The invention aims to completely change how dental appliances—such as retainers, dentures, and aligners—are cared for and cleaned. For people who lead busy lives the invention aims to make dental hygiene maintenance easier by offering a portable, digital solution that combines technology and practicality. The objective is to improve oral health results and user experience by optimizing cleaning efficacy and efficiency through the integration of 3D printing with vibrating mechanisms.

Innovation/Highlight

A revolutionary method for maintaining dental appliances is presented in our poster. Our innovation makes it easier to clean retainers, dentures, and aligners, providing consumers with a practical, portable option for maintaining their dental health.

Conclusion

To sum up, our design redefines dental appliance care by combining digital dentistry with 3D printing. We're modernizing processes for improved dental health using water-based cleaning and 3D printed bristles.

PO08

A Novel Mask for Real-Time Detection of Oral Malodor and Bacterial Activity

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Manav Rachna Dental College, Delhi

Background/Aim:

Oral malodor (halitosis) is a potential indicator of poor oral hygiene and dental issues, such as caries and periodontal diseases, as well as a source of personal discomfort and social anxiety. Traditional methods for detecting malodor, like organoleptic assessments by professionals, are subjective, inconsistent, and impractical for daily use. Many individuals seek a discreet, portable solution providing real-time feedback on oral malodor, especially before social interactions, professional meetings, or public events. The need for a reliable, on-the-go device to instantly monitor and address oral malodor throughout the day is more pressing than ever.

Objective

To develop and evaluate a mask equipped with biosensors capable of detecting oral malodor and bacterial activity in real time, providing an accessible tool for enhancing oral health awareness and preventive care.

Methods

The mask integrates advanced biosensors to detect volatile sulfur compounds (VSCs) such as hydrogen sulfide and methyl mercaptan, along with other malodor-inducing compounds like dimethyl sulfide, indole, and skatole. It employs gas sensors based on metal-oxide semiconductors (MOS), electrochemical sensors, and photoionization detectors (PID) for high sensitivity and selectivity. Enzymatic sensors and microbial detection systems measure bacterial byproducts linked to cariogenic and periodontal pathogens. Breath samples are continuously analyzed, with results conveyed through integrated visual indicators or a paired smartphone app.

Results

The mask proposes an efficient solution for real-time detection of oral malodor by accurately identifying key compounds linked to halitosis. It can detect hydrogen sulfide when levels exceed 0.00004 ppm, methyl mercaptan over 5.1×10-13 ppm, and indole above 0.0003 ppm. Its advanced biosensor technology ensures rapid, reliable monitoring and immediate feedback on breath quality. This device addresses the need for fast, on-the-go solutions, empowering users to manage malodor confidently before critical interactions.

Conclusion

This innovative mask replaces subjective malodor assessments with a practical, scientifically validated alternative. By enabling early detection of oral health issues and fostering preventive care, the device represents a transformative step in oral health monitoring and management.

Key Words

Oral malodor, halitosis, biosensors

PO09

CHITOSAN: A Promising Biomaterial for Innovative Dentistry

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Purpose:

To introduce the Applications of Chitosan nanoparticles in the innovative world of dentistry

Method:

The method of preparation of Chitosan from the scratch, begins from Chitin, goes on further by demineralization of the collected raw material, followed by deproteinization and deacetylation, and at the end by purification and grinding the product into fine particles.

We have researched and collected the information from various articles which show the preparation of chitosan.

Results:

Chitosan is a readily available, nontoxic, biocompatible, and biodegradable substance. Additionally, this polysaccharide has anti-inflammatory & antibacterial qualities along with muco-adhesion and biocompatibility.

It has been verified for using in many industries including:

1. Health management:
    - It helps in weight loss and reduces the cholesterol level in body
2. Environmental application
    - Use for water treatment process
3. Cosmetic and skincare
    - Moisturising the skin and anti-aging
4. Biomedical application
    - Drug delivery
    - Dental implant coating

- Wound healing
- Periodontal tissue regeneration
- Enamel repair and remineralization
- Adhesion and dental bonding
- Modification of toothpaste and mouthwash

Conclusion

Chitosan exists as nanoparticles.

It sustains hemostasis and reduces blood loss.

It can also promote tissue regeneration at a faster rate. The sealing of wound site is one of the important use. It works as an antifungal and antimicrobial agent. And above all it is a biodegradable substance. A very broad spectrum of uses can be seen with chitosan that includes the industries from cosmetics, biomedical, health to the water treatment processing units.

Key Words

Antimicrobial, Biodegradable, Biomedical, Nanoparticles

Table Clinics

Category: Faculty & Independent Researchers

TC01

PriciGuide® and PriciPost® Systems

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Purpose

The PriciGuide® system represents a breakthrough in guided endodontics through its patented, modular, and sleeveless design. Unlike conventional systems that rely on sleeves for bur orientation, PriciGuide® employs innovative guide rails, enabling precise bur alignment without obstructing the clinician's view. This design allows for seamless use of existing rotary instrumentation while enhancing visibility and adaptability, especially in the posterior regions of the oral cavity. Beyond endodontics, the platform's versatility supports applications such as guided implant placement, offering a cost-effective solution for precision-driven procedures. The system is particularly effective in managing complex clinical scenarios such as:

- Severely calcified canals
- Through-the-prosthesis root canal therapy (TTP-RCT)
- Minimally invasive access cavities

The PriciPost® system complements PriciGuide® by introducing a novel, guided approach for post space preparation and retrieval. It eliminates the need for traditional peeso reamers and ultrasonic instruments, thereby reducing procedural errors, increasing efficiency, and improving post placement predictability—especially in anatomically complex or previously treated cases.

Method

Both systems are driven by an advanced digital workflow, ensuring individualized accuracy and clinical precision:

- CBCT imaging is used to visualize internal anatomy three-dimensionally.
- Intraoral scanning captures precise surface details.
- A 3D virtual treatment plan is developed using software such as BlueSkyBio, facilitating exact trajectory planning.
- Customized 3D-printed templates are fabricated based on the virtual plan, guiding the clinician throughout the procedure.

This digital integration bridges the gap between diagnostic imaging and procedural execution, delivering patient-specific guides with exceptional precision.

Results

The systems have been successfully utilized in a wide range of clinical cases, including:

- Pulp canal obliteration (PCO)
- Minimally invasive access opening
- Through-the-prostheses Root Canal Treatment (TTP-RCT)

In each case, the systems demonstrated:

- Improved accuracy in canal and post-space localization
- Reduced chairside time
- Minimized iatrogenic errors (such as perforation or unnecessary dentin removal)
- Preservation of sound tooth structure
- Enhanced operator confidence and patient satisfaction

Clinical feedback and follow-up data affirm their reliability and versatility across various endodontic and restorative challenges.

Conclusion

The PriciGuide® and PriciPost® systems represent the next generation of guided dental technologies. By merging digital precision with clinical flexibility, these systems empower clinicians to address even the most complex cases with confidence and efficiency. Their ability to improve outcomes, conserve tooth structure, and simplify procedures marks a significant advancement in minimally invasive and digitally assisted dentistry.

Key Words

Digital dentistry, Guided endodontics, Innovation, PriciGuide®, PriciPost®, Patented technology

Category: Postgraduates

TC02

Nova-Ster - A Portable Multi-Phase Flash Sterilization Device

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Purpose

Sterilization is vital in healthcare to prevent cross-infections, protecting patients, clinicians, and researchers. Autoclaves, the gold standard, use high-pressure steam but are bulky and unsuitable for mobile clinics, remote areas, or resource-limited settings and have drawbacks such as manual rinsing, long cycles, high costs, and environmental impact. Hence, this device was ideated to create a sustainable, holistic, quick, compact, and efficient sterilization device to address these challenges effectively in various healthcare scenarios.

Method

The "NOVA-STER" is a novel, fully automated, portable sterilization device for non-critical and semi-critical reusable instruments. It features an automated ultrasonic rinsing system, pre-vacuum flash sterilization, and vacuum drying, completing the process in just 9 minutes. It also hosts a detachable bristle top scrubbing and rinsing unit to mechanically cleanse the soil debris on critical biomedical instruments contaminated with body fluids. This detachable unit contains a supplementary water cartridge and a heat-resistant antiseptic slot attached adjacent to the powered bristle top. A detachable drain tube must be secured to an outlet valve from the instrument chamber and connected to an outlet basin to eliminate the water containing the soil debris.

Results

NOVA-STER provides equal efficiency to the gold standard autoclave-based sterilization while eliminating inconsistencies from manual rinsing. It incorporates dual mechanisms of heat-based and chemical sterilization, offering flexibility for critical instruments.

Conclusion

"NOVA-STER" is economically sound and highly beneficial for private practices, mass screening camps, and healthcare facilities with high patient turnover, where frequent and rapid sterilization is essential. This eliminates the need for manual cleaning and prevents moisture-related damage, ensuring dry sterilization by the end of the cycle.

Key Words

Autoclave, Bio-medical, Chemical Sterilization, Sterilization, Ultrasonic

Introduction

TC03

Ergonomic Operator Tool – A Dentist's Pivotal Aid

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The International Ergonomics Association defines ergonomics as "The scientific discipline concerned with the understanding of the interactions among humans and other elements of a system, and the profession that applies theoretical principles, data, and methods to design, to optimize human well-being and overall system performance."

Purpose

Dentist's posture affects the muscle activities in the neck and shoulders during treatment, and various components of the dental unit chair may affect

the dentist's posture. This invention correlates to a posture correction system, targeted for dental practitioners, integrated with sensors that would monitor and maintain optimal ergonomic posture during procedures.

Methods

Ultrasonic sensors are embedded on the dental stool along the spine curvature to detect angular deviations of the spinal posture and measure the dentist's distance from the patient. A control unit processes data from these sensors in real time, issuing corrective feedback through signals when posture or proximity deviates from predefined ergonomic thresholds.

Results

These sensors provide prompt feedback about the credibility of posture, helping practitioners maintain proper posture, reducing musculoskeletal strain, and enhancing long-term spinal health without disrupting workflow.

Conclusion

This design enhances comfort and minimizes the physical exertion of dentists, reducing the risk of musculoskeletal disorders (MSDs) commonly associated with dental practice.

Key Words

Ergonomics, Musculoskeletal disorders (MSDs), Ultrasonic Sensors

TC04

The Digital Sculpture: AI & Data Analytics in Maxillofacial Prosthodontics

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Abstract:

Artificial intelligence (AI) is revolutionizing prosthodontics, particularly in the development of maxillofacial prostheses. These prostheses are essential for patients with facial deformities caused by trauma, congenital abnormalities, or surgical interventions such as tumor resections. By restoring functionality and aesthetics, maxillofacial prostheses significantly enhance patients' physical and emotional well-being. However, traditional methods of designing and fabricating these prostheses are often time-intensive, laborious, and dependent on highly skilled professionals. The introduction of AI has transformed this field, offering innovative solutions that enhance precision, efficiency, and customization.

AI-powered tools such as machine learning, computer-aided design (CAD), 3D imaging, and generative design algorithms enable highly personalized prosthetic designs. These technologies analyze patient data, including CT scans, MRI images, and facial scans, to create detailed virtual models. AI facilitates the prediction of functional outcomes and ensures the prosthesis is tailored to fit the patient's unique anatomical structure, providing optimal comfort and performance. Additionally, advanced manufacturing techniques like AI-assisted 3D printing and robotic milling allow for rapid prototyping and fabrication. This reduces production time, minimizes errors, and delivers high-quality prostheses with greater consistency.

For complex maxillofacial cases, AI supports pre-surgical planning and interdisciplinary collaboration through virtual simulations and predictive modeling. This allows clinicians to design prostheses that not only restore function but also achieve precise aesthetic integration, replicating skin tone, texture, and facial symmetry. AI's ability to enhance both functional and aesthetic aspects of prostheses ensures superior outcomes for patients.

The integration of bionic eye technology into maxillofacial prosthetics marks a significant advancement in the rehabilitation of patients with orbital defects resulting from trauma, tumor resection, or congenital anomalies. Traditional orbital prostheses have focused primarily on cosmetic restoration; however, the advent of visual prosthetics—commonly referred to as bionic eyes—offers the potential to restore partial visual function in select cases. These devices, which interface with the optic nerve or visual cortex, can be incorporated within anatomically accurate orbital prostheses,

merging aesthetic and functional outcomes. The combined approach requires a multidisciplinary collaboration between ocularists, maxillofacial prosthodontists, neurosurgeons, and biomedical engineers. While current bionic eye systems provide limited visual resolution, ongoing developments in neuro-interface technology, wireless power transmission, and biocompatible materials are rapidly expanding their capabilities. The integration of bionic eyes into orbital prostheses represents a transformative step toward holistic rehabilitation—addressing both psychosocial well-being and functional sensory restoration in maxillofacial patients.

Recent advances in AI-driven sensor technologies have enabled the creation of bioelectronic "smart noses" that can mimic aspects of human olfaction by detecting and classifying odors through chemical sensors and machine learning algorithms. When integrated into maxillofacial prostheses, these systems offer novel sensory feedback mechanisms, potentially aiding patients in recognizing environmental cues such as smoke, gas leaks, or spoiled food. AI enhances the specificity and adaptability of these prosthetic sensors by continuously learning from environmental exposure and refining odor recognition patterns. The combination of AI, nanotechnology, and biocompatible materials opens new pathways for restoring lost sensory function in patients with nasal defects due to trauma, tumor resection, or congenital absence. As this field evolves, AI-powered sensory nasal prostheses promise not only improved safety and quality of life but also a new frontier in functional maxillofacial prosthetic design.

The integration of AI into maxillofacial prosthodontics is reshaping the field by streamlining workflows, improving clinical results, and reducing reliance on traditional, resource-intensive methods. As AI continues to advance, it holds immense potential to deliver personalized, cost-effective, and efficient prosthetic care. This abstract highlights the transformative role of AI in maxillofacial prosthodontics, emphasizing its ability to improve rehabilitation outcomes and elevate the quality of life for patients.

Key Words

Maxillofacial prosthesis, Implantalogy, CAD/CAM, Artificial Intellegences

Category: Undergraduates

TC05

AMALGAVAC Smart Suction System

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Background:

The AMALGAVAC – Smart Suction System is designed to address the growing concern over the disposal of dental amalgam and mercury, which remains a significant challenge in dental practices, especially in countries where its usage is still prevalent, like India. Amalgam contains mercury, a known neurotoxin and environmental pollutant, that can seep into water sources if not properly managed. Current systems in dental practices do not offer a comprehensive way to safely filter and store amalgam waste, leading to risks for both health and the environment. The lack of an efficient method for amalgam waste disposal in dental college, where large amounts of mercury are handled by students, amplifies the problem. Additionally, the health risks to dental professionals and patients due to mercury exposure have long been overlooked, despite mercury's hazardous impact on the nervous system and environment. There was a clear need for a simple, cost-effective and easily implementable solution to handle this waste without compromising dental care.

Methodology

AMALGAVAC is an innovative solution designed to address the critical need for effective amalgam and mercury waste management in dental practices. Its methodology encompasses several key components:

- Advanced Filtration System: AMALGAVAC employs a sophisticated filtration mechanism to capture amalgam particles and mercury from dental wastewater. This system ensures that harmful substances are effectively removed before they can enter the public water supply, thereby protecting environmental and public health.

- User-Friendly Design: The device is designed for easy integration into existing dental office setups. Its straightforward installation and maintenance processes encourage widespread adoption among dental practitioners, facilitating compliance with environmental regulations.
- Sustainable Operation: AMALGAVAC utilizes eco-friendly materials and energy-efficient processes, aligning with the growing trend toward sustainable healthcare solutions. This commitment to environmental responsibility not only addresses current ecological concerns but also positions AMALGAVAC as a forward-thinking solution in dental practice management.

By combining these elements, AMALGAVAC offers a comprehensive approach to amalgam and mercury waste management, ensuring safer dental practices and contributing to broader environmental conservation efforts.

Conclusion

AMALGAVAC is a revolutionary innovation that effectively addresses an urgent need in dental practices by offering a safe, sustainable, and scalable solution for amalgam and mercury waste management. Its design prioritizes health, environmental protection, and ease of use, making it a leading contender. The product not only improves current dental practices but also aligns with future trends of eco-friendly and responsible healthcare.

TC06

Multi Colour Periodontal Probe

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Purpose

To design a periodontal probe that enhances diagnostic accuracy and visual perception in the detection and management of periodontal diseases.

Methods

The probe is constructed with a stainless-steel handle featuring a gnarled texture for improved grip, a hollow interior, a length of 12cm, and a diameter of 5 mm. A biodegradable Poly Lactic acid (PLA) shank attaches to the handle, measuring 12mm in length and 3 mm in width. The working end of the probe, also made of PLA, tapers from 1mm at the shank to 0.6mm at the disposable tip. Colour coded markings are provided along the working end: black (first 3mm and last 2mm), green (4^{th} mm), red (5^{th} mm), yellow (6^{th} mm), blue (7^{th} mm), violet (8^{th} mm).

Results

The distinct colour coded markings aid in stage specific periodontal diagnosis and treatment planning, improving diagnostic accuracy and visual perception during periodontal assessments.

Conclusion

The Multi Colour Periodontal Probe presents an innovative, user-friendly tool that facilitates better diagnosis and management of periodontal diseases through improved visual cues and ergonomic design.

Key Words

Periodontal probe, diagnostic tool, colour-coded markings, Poly Lactic Acid (PLA), periodontal diagnosis

TC07

Evaluation of the Therapeutic Efficacy of Chia Ointment on Gums in Patients with Acute Chronic Gingivitis and Acute Periodontitis

Pearl Gupta

SGT University, Gurugram

Background:

Acute chronic gingivitis and acute periodontitis are common oral health issues characterized by inflammation and infection of the gums. Conventional treatments often involve antibiotics and anti-inflammatory medications, which can have side effects. Chia seeds, rich in omega-3 fatty acids and antioxidants, have been traditionally used for their medicinal properties.

Objective

To evaluate the efficacy of chia ointment in reducing inflammation and improving gum health in patients with acute chronic gingivitis and acute periodontitis.

Methodology

A randomized, double-blind, placebo-controlled clinical trial was conducted on 20 patients diagnosed with acute chronic gingivitis and acute periodontitis. Patients were divided into two groups: a treatment group receiving chia ointment and a control group receiving a placebo. Patients were instructed to apply the ointment/placebo topically to the affected gums twice daily for 15 days. Clinical parameters, including gingival index, plaque index, and pocket depth, were assessed at baseline, every week.

Results

The treatment group showed significant reductions in gingival index, plaque index, and pocket depth compared to the control group. Chia ointment was found to be effective in reducing inflammation and improving gum health in patients with acute chronic gingivitis and acute periodontitis.

Conclusion

Chia ointment is a safe and effective adjunctive treatment for managing acute chronic gingivitis and acute periodontitis. Its anti-inflammatory and antioxidant properties make it a promising natural remedy for promoting oral health.

Key Words

Chia, Gingivitis, Pocket depth

Insights, Impact & Outcomes: Conference Highlights

1. Introduction

The Global Conclave on Oral Health Innovation & Research (GCOHIR), an esteemed initiative by the Indian Dental Association (IDA), was conceived to advance oral healthcare through pioneering research, interdisciplinary collaboration, and industry-driven innovation. Hosted at the renowned Dr. Ambedkar International Centre, New Delhi, on 15th and 16th February 2025, this distinguished two-day event provided a vital platform for researchers, clinicians, academicians, industry leaders, and policymakers to engage in high-level discussions, exchange knowledge, and contribute to shaping the future of oral health.

Designed to bridge the divide between research, innovation, and clinical practice, the conclave facilitated dynamic dialogues, showcased cutting-edge technological advancements, and fostered strategic alliances. With an emphasis on oral health devices, pharmaceuticals, Indian traditional medicine, engineering applications, and intellectual property rights, GCOHIR significantly influenced the evolution of oral healthcare, setting new global benchmarks. The event featured thought-provoking keynote addresses, expert-led panel discussions, hands-on workshops, industry exhibitions, and unparalleled networking opportunities, driving meaningful progress in oral health research and practice.



2. Vision of the conclave

The vision of the Global Conclave on Oral Health Innovation & Research was to lead the way in oral health through innovation, application, and promotion of dental education, research, and patient care. By fostering interdisciplinary collaboration, GCOHIR aimed to establish a globally recognized platform for advancing oral healthcare solutions.

Aligned with Hon'ble PM Shri Narendra Modi's vision of Viksit Bharat and the transformative power of Digital India, the conclave underscored India's commitment to pioneering self-reliant and advanced oral healthcare. Through collaborative efforts, technological advancements, and strategic partnerships, GCOHIR sought to:

- **Strengthen Industry Collaborations:** Facilitate connections between academia, clinical practice, and industry for impactful healthcare solutions.
- **Encourage Cross-Disciplinary Synergies:** Promote integration between dentistry, biomedical engineering, material sciences, pharmaceuticals, and traditional medicine.
- **Showcase Breakthroughs in Oral Health:** Provide a platform for cutting-edge technologies and novel treatment methodologies.
- **Navigate Legal and Ethical Frameworks:** Support researchers and entrepreneurs in regulatory compliance and intellectual property management.
- **Foster Funding and Investment Opportunities:** Link innovators with investors, grant providers, and funding bodies.
- **Advance Knowledge and Skills:** Equip professionals with insights into emerging trends and research advancements.

At its core, GCOHIR envisioned a future where scientific advancements seamlessly integrated with clinical excellence, driving enhanced patient

care, improved oral health outcomes, and a globally recognized ecosystem for dental research and innovation.

Following the ceremonial felicitation of the esteemed guests, Dr. O.P. Kharbanda delivered the Welcome Remarks, setting the tone for the conclave's commitment to bridging research, innovation, and clinical excellence. His address was followed by Dr. Rajiv Chugh and Dr. Sharad Kapoor, who articulated the strategic objectives of the conclave and its role in shaping the future of oral health research, policy, and education. A compelling Keynote Address was delivered by Dr. Abhishek Kunwar, who emphasized the critical link between oral health and non-communicable diseases (NCDs), advocating for integrated healthcare frameworks to address global challenges in dentistry.

An insightful presentation by Dr. Ashok Dhoble provided an overview of the Indian Dental Association's vision, highlighting ongoing initiatives, policy frameworks, and collaborative efforts to strengthen the oral healthcare landscape.

A pivotal moment of the ceremony was the Official Launch of the following designed to enhance clinical protocols, research frameworks, and public health strategies, including:

- The Infection Prevention and Control - The Guiding Document for Dental Professionals in India
- National Collaborative Workshop on Future of Dentistry Vision 2030: Challenges and Opportunities - Advancing Oral Health through Science, Research, Education, Practice, and Advocacy

3. Inaugration Ceremony

The Inauguration Ceremony of the Global Conclave on Oral Health Innovation & Research (GCOHIR) marked the commencement of this transformative event. With a distinguished gathering of national and international luminaries, the ceremony underscored the collective vision for pioneering advancements in oral health science, policy, and clinical practice.

The proceedings were eloquently conducted by Dr. Lakshmi Balraj, Master of Ceremony, who guided the event's formal inaugural session. The ceremony began with the traditional lighting of the lamp, a symbolic act signifying the pursuit of knowledge and enlightenment in oral healthcare.

Distinguished Dignitaries on the Dais:

- **Dr. Sharad Kapoor** – Conclave Organizing Secretary, GCOHIR
- **Dr. Rajiv Chugh** – Conclave Chairman, GCOHIR
- **Shri Rashid Shaban** – Scientist D, Joint Director, Ministry of Electronics and Information Technology (MeitY)
- **Dr. O.P. Kharbanda** – Conclave Reception Chairman, GCOHIR
- **Dr. Subhra Nandy** – President, IDA
- **Mr. Enzo Bondioni** – Executive Director, FDI World Dental Federation
- **Dr. Ashok Dhoble** – Hon. Secretary General, IDA
- **Dr. Abhishek Kunwar** – National Professional Officer, Non-Communicable Diseases, WHO India
- **Dr. Mahesh Verma** – Chief Patron, GCOHIR
- **Dr. Deepak Muchhala** – Treasurer, IDA



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- **Manual on Oral Potentially Malignant Disorders and Oral Cancer for Dental Professionals -**

The ceremony concluded with the resonant notes of the Indian National Anthem and with an atmosphere of inspiration and purpose, the inauguration set the stage for the impactful discussions, groundbreaking research presentations, and collaborative engagements that unfolded throughout the conclave.







4. Scientific Programmes

4.A. Keynote Sessions

The Keynote Sessions at the Global Conclave on Oral Health Innovation & Research (GCOHIR) served as a cornerstone of the event, bringing together distinguished thought leaders, pioneering researchers, and industry experts from renowned national and international organizations to share transformative insights into the future of oral healthcare.

BHIM HALL

Day 1

Name of the Topic	Name of the Speaker & Organisation
Keynote Series: 1) Periodontal Regeneration: Harnessing Stem Cells to Combat Gum Disease 2) Stem Cells & Biomaterials: A New Era in Soft Tissue Regeneration for Oral Health	1) Dr. Gopalakrishnan (Dr. D. Y. Patil Dental College and Hospital, Pimpri, Pune) 2) Dr. Sharath Shetty (Dr. D. Y. Patil Dental College and Hospital, Pimpri, Pune)
Efficacy of Herbal dentifrice in management of Dentinal Hypersensitivity post scaling & root planning in chronic Periodontitis - A randomised clinical trial	Dr. Santosh Martande (Dr. D. Y. Patil Dental College and Hospital, Pimpri, Pune)
Immersive technology & what you can do with it	Prof. Amitha Ranauta (Queen Mary University of London, UK)
Building the Future of Innovation: Establishing a Successful Incubation Center	Dr. Mahesh Verma (Guru Gobind Indraprastha University)
Implementation & Translational Research, Funding & Support at ICMR for advancing innovations in the country	Dr. Nitika Monga (Indian Council of Medical Research, New Delhi)
Innovative Strategies in Effective Patient Education & Preventive Care Compliance	Dr. Mansi Chopra (NCD Alliance)
Digital Dentistry Initiatives by Ministry of Electronics & Information Technology, Government of India	Mr. Deepak (C-DAC)
Saliva Based POCT Device for Diagnosis of Oral Diseases	Dr. Subash Chandra Nayak (IDA, Odisha)

Day 2

Name of the Topic	Name of the Speaker & Organisation
Tackling the Oral Cancer Burden in Sri Lanka: Innovative Strategies & Lessons from best practices	Dr. Ruwan Jayasinghe (Sri Lanka Dental Association)
Promotion & Funding options for R&D and Innovations	Dr. Vinay Kumar & Dr. Anoop (Department of Scientific and Industrial Research (DSIR)
Materiovigilance in Dentistry - the need & ways to report adverse events due to dental devices	Dr. Shalya Anand (International Health Literacy Association, USA)
AI-Driven Patient Risk Assessment	Dr. Padma Gadiyar (Oral Tech AI, Australia)
Pioneering Intellectual Property: Patents, Copyrights, Tradenames	Dr. Harpreet Singh (Baba Jaswant Singh Dental College & Hospital)
An overview of Innovations in Cleft Lip & Palate repair	Dr. Shrey Srivastava (Kanti Devi Dental College & Hospital, Mathura)
Socially Accountable Research: Bridging Policy, Practice & Oral Health in India	Dr. Arvind Babu (University of West Indies, Jamaica)
Innovation for Prevention- Tools & Techniques for Improving Oral Health	Dr. Ashwin Jawdekar (Bharati Vidyapeeth Dental College, Navi Mumbai)
Telemedicine- Vaidya Vani at LHMC – An Innovative approach	Dr. Parvesh Mehra (Lady Hardinge Medical College, Delhi)

NALANDA HALL

DAY 1

Name of the Topic	Name of the Speaker & Organisation
Advancing Dental Care: Recent Practical Applications of LASER Technology across all Fields of Dentistry with Case Study Insights	Dr. Apoorva Gupta (AK Global Dent
Orofacial pain as a new speciality which bridges the gap between medicine & dentistry - Chronic pain diagnosis & management - Case Study of best practices	Dr. Sumit Gupta (RAK Dental, UAE)
Probiotics & Oral Health: Innovations in Microbiome Management	Dr. Lakshman Samaranayake (University of Hong Kong)
Motivating business towards innovation in Oral Healthcare – An Industry Perspective	Prof. Stephen Mason (Global Medical Lead, Haleon)
Research Sustainability in Dentistry	DATO' Dr. Mohamed Ibrahim Abu Hassan (MAHSA University, Malaysia)
Diagnosis & treatment of Oral Mucosal lesions: The Eyes cannot see what the mind doesn't know	Dr. Dipti Bhatnagar (Rayat Bahra Dental College)

DAY 2

Name of the Topic	Name of the Speaker & Organisation
Robotics in healthcare with a focus on dentistry	Dr. Shashi Kumar (Elevatronix) Prof. Karali Patra (IIT, Patna)
Frugal Innovations for Strengthening Primary Oral Health Care	Dr. Manu Mathur (Queen Mary University of London, UK)
Models of Successful Trans-Border Collaborations in Oral Health	Dr. Priyanka Gudsoorkar (University of Cincinnati, USA)
Leveraging Technology for Global Collaboration in Oral Healthcare	Dr. Jessica Klabak (Solidarity Dental Foundation, USA)
Research integrity & professionalism	Prof. Shenuka Singh (University of KwaZulu-Natal, South Africa)
Research & Development of a New Dental Restorative Material for Dental Clinics, High Altitudes, Deep Seas, Supersonics & Celestial Spaces	Col. Manu Krishnan (Army Dental College)
Why Medics should be Innovators & Entrepreneurs: Fostering Early Collaborations with Technology Developers & Startups	Dr. Baswaraj (Navarachana Pvt. Ltd)
1) Artificial Intelligence in Forensic Dentistry, Diagnosing & reporting child abuse by dentist 2) Recent Advancements in Bite Mark Analysis, Dental Identification Systems & Forensic Age Estimation	1) Dr. Parul Khare Sinha (Sharda University, Noida) 2) Dr. Abraham Johnson (National Forensic Sciences University)
Dental Pulp Stem Cells: Pioneering Approaches to Nerve Regeneration & Pain Management.	Dr. Aarti Bohora (SMBT IDS&RC, Nashik)

4.B. Panel Discussions

Day 1

Panel Discussion 1: Enhancing Preventive Oral Healthcare through Community-Based Strategies

Moderator: Dr. Kumar Rajan (Consultant - Public Health and Emergency Preparedness)

Panellists:

- Dr. SG Damle (Vice-Chancellor & Director-General, Maharishi Markandeshwar University)
- Dr. HS Grover (President, Indian Society of Periodontology)
- Dr. Abhishek Bhadranna (General Secretary, Practicing Oral Pathologists and Microbiologists Association (POPMA))
- Dr. Mansi Chopra (Deputy Director, HRIDAY, NCD Alliance)



Points Discussed:

1. Child and Adolescent Preventive Oral Health – Emphasized early intervention, school-based programs, and parental education.
2. Periodontal Health and Systemic Disease Prevention – Addressed preventive strategies for gum disease, its systemic links, and risk factor modification.
3. Community Oral Health Policy and Risk Reduction – Focused on integrating oral health into national health initiatives.
4. Partnerships, Equity, and Multi-Sectoral Collaboration – Explored the role of NGOs, advocacy, and UHC integration.

Panel Discussion 2: Facilitators & Barriers for Conducting Oral Health Research in India

Moderator: Prof. O.P. Kharbanda (Pro VC Ramiah University, Professor Emeritus National Academy of Medical Sciences)

Panellists:

- Dr. Manu Mathur (Professor & Head, Centre for Dental Public Health & Primary Care, Queen Mary University of London)
- Dr. Ranganathan K (Secretary, International Association of Oral and Maxillofacial Pathology)
- Dr. Himanshu Aeran (Pro Vice-Chancellor, Ras Bihari Bose Subharti University)
- Lt Col Saravanan SP (Assistant Professor, Periodontology, Army Dental Centre Research and Referral)



Points Discussed:

- Identified major barriers preventing dental professionals from pursuing research.
- Discussed essential facilitators for promoting research in oral health sciences.
- Debated the necessity of a central research lab for MDS/PhD programs.
- Explored funding allocation for research labs in dental schools.
- Addressed the employment of BDS graduates with PhDs as full-time faculty.

Panel Discussion 3: Antimicrobial Resistance Stewardship: Innovations, Challenges & Sustainable Solutions

Panellists:

- Dr. Vijay Mathur (Professor & Head, Pediatric and Preventive Dentistry, Centre for Dental Education and Research, AIIMS, New Delhi)
- Dr. Kumar Rajan (Consultant - Public Health and Emergency Preparedness)
- Dr. Sangeeta Sharma (Professor and Head, Department of Neuropsychopharmacology, Institute of Human Behaviour & Allied Sciences, Delhi)



Points Discussed:

- National program for AMR containment.
- Bioavailability and appropriate sourcing of antibiotics for dentists.
- Classification and monitoring of antibiotic prescriptions.
- AMR Audits

Panel Discussion 4: Innovative Dental Approaches in Sleep Medicine

Moderator: Dr. Kunal Oswal (Public Health Consultant, Karkinos Healthcare & Tata Trusts)

Panellists:

- Dr. Sumit Gupta (Diplomate, American Board of Orofacial Pain, Founder & Director, Rak Dental Care & Implant Centre, UAE)
- Dr. Parvesh Mehra (HOD, OMFS, Lady Hardinge Medical College)
- Dr. Chaitra Mastud (Professor, Orthodontics and Dentofacial Orthopedics, DYPU)



Points Discussed:

- Effectiveness of dental devices in treating OSA.
- Role of mandibular distraction in PRS patients.
- Challenges in integrating dental technology into sleep medicine.

Panel Discussion 5: Transborder Collaborations – Methods, Innovations, Challenges, Opportunities & Future Directions

Moderator: Dr. Sujay Mehta (Director of Global Health Education, Solidarity Dental Foundation, USA)

Panellists:

- Dr. Lakshman Samaranayake (University of Hong Kong & University of Queensland)
- Dr. Shenuka Singh (University of KwaZulu-Natal, South Africa)
- Dr. Ruwan Jayasinghe (University of Peradeniya, Sri Lanka)
- Dato' Dr. Mohamed Ibrahim Abu Hassan (Mahsa University, Malaysia)
- Dr. Neeta Mohanty (Institute of Dental Sciences, Bhubaneswar)





Points Discussed:

- Ensuring equitable partnerships, addressing asymmetrical power relations, and promoting ownership and accountability in research amidst the publish-or-perish culture.
- Navigating ethical and legal complexities in biobanking, genomic research, and cross-border data sharing while ensuring fair access and compliance with regulations.
- Scarcity of local funding pushes researchers to seek international support, often leading to dependence on sponsors from the Global North and the importation of projects misaligned with local needs.
- Strengthening local research capacity, enhancing skill development, and incorporating advanced technologies through global collaborations to ensure sustainable and meaningful partnerships.

Panel Discussion 6: Entrepreneurship in Oral Health: Overcoming Barriers & Unlocking Opportunities

Moderator: Dr. Baswaraj (Founder, Navarachana Lifescience Private Limited)

Panellists:

- Dr. Rajesh Reddy (Dental Planet)
- Dr. Yamini (Immersive Dental)
- Dr. Saurabh Joshi (Pravara)

Points Discussed:

- Importance of dentists becoming entrepreneurs.
- Challenges faced in oral health entrepreneurship - Lack of technical expertise in the team, need for collaboration with business experts and necessity of entrepreneurship training in the dental curriculum.
- Experience of participating in a startup incubation program but facing difficulties due to the absence of technical engineers.
- Importance of forming a well-rounded team with a doctor, engineer, and business expert to enhance success and minimize failure.

Day 2

Panel Discussion 7: Transforming Oral Healthcare with AR, VR, & Data Analytics

Moderator: Dr. Ranjitkumar Patil
(Dean, KGMC, Lucknow)

Panellists:

- Dr. Padma Gadiyar (Chief Executive Officer, Oral Tech AI Pty.Ltd, Australia)
- Dr Abraham Johnson (Sr. Assistant Professor, School of Medico-Legal Studies, National Forensic Sciences University)
- Dr Roomani (Research Associate for Data Science, The George Institute for Global Health, PhD Scholar, Centre for Digital Health, IIT Bombay)
- Dr Viswa Chaitanya (Professor and HoD- Dept. of Public Health Dentistry, Government Dental College & Hospital, Vijayawada)

Points Discussed:

- Role of AR, VR, and data analytics in patient engagement.
- Challenges in mainstream adoption.



- Enhancing accessibility and efficiency in oral healthcare.

Panel Discussion 8: Building the Future of AI in Oral Healthcare

Moderator: Dr. Ranganathan K (Secretary, International Association of Oral and Maxillofacial Pathology)

Panellists:

- Dr. Parul Khare Sinha (Assistant Professor, Department of Oral Pathology, Sharda University)
- Dr. Neeraj Gugnani (Professor at Department of Pedodontics and Preventive Dentistry, DAV Dental College Yamunanagar)



- Dr. Preetinder Ahluwalia (Senior Faculty Professor- Wagro University, Greece & Ucam, Spain)
- Prof. Karali Patra (Department of Mechanical Engineering, IIT Patna)

Points Discussed:

- Development of India-specific datasets.
- Central depository and spoke-hub model for AI in oral health.
- Application-specific AI models for screening, diagnosis, and treatment.

Panel Discussion 9: Revolutionizing Access to Care with Technology & Sustainability

Moderator: Dr. Ashwath Narayanan (President, Indian Association of Public Health Dentistry)

Panellists:

- Dr Vikrant Mohanty (Professor and Head of Department of Department of Public Health Dentistry, Maulana Azad Institute of Dental Sciences)



- Dr. Viswa Chaitanya Chandu (Professor and HoD- Dept. of Public Health Dentistry, Government Dental College & Hospital, Vijayawada)
- Dr. Kunal Oswal (Public Health Consultant, Karkinos Healthcare & Tata Trusts)
- Dr. Ramprasad Vasthare (Professor & Head, Department of Public Health Dentistry, Manipal College of Dental Sciences)

Points Discussed:

- Mobile technology and non-dental personnel in healthcare.
- Sustainable care models through public-private partnerships.
- Role of telehealth in improving access and monitoring patient engagement.

Panel Discussion 10: Innovations in Aesthetics & Smile Design

Moderator: Dr. Deepak Muchhala (Treasurer, IDA)

Panellists:

- Dr. Manu Rathee (Senior Professor & Head of Department, Prosthodontics at PGIDS)
- Dr. Amit Bhardwaj (Dean, Professor, and Head, Department of Orthodontics, Modern Dental College)
- Dr. Nilam Gada (Clinical Cosmetologist)



Points Discussed:

- Advancements in prosthetic solutions for older adults
- Role of periodontics in smile aesthetics
- Innovations in cosmetic dentistry techniques

4.C. Symposium Workshops

Introduction to the Symposia Series	
Theme: **Dental Product Development Ecosystem: Insights from Incubation Center, Funding Agencies & Regulatory Experts**	
Product Development Lifecycle	Dr. Ruchika Roongta Nawal (MAIDS)
Patent & Intellectual Property: Ensuring Freedom to Operate (FTO) by securing necessary patents & protecting your innovation.	Dr. Suchita Markan (Indian Council of Medical Research, New Delhi)
Regulatory Approvals: Validating the device for safety, efficacy & clinical validation for developing a regulatory compliant product	Dr. Aseem Sahu (CDSCO)
Theme: **Child Oral Health**	
Preventive Paediatric Dentistry: Innovations in Early Intervention & Risk Assessment	Dr. Ashwin Jawdekar (Bharati Vidyapeeth Dental College, Navi Mumbai)
Digital Dentistry for Kids: Making Oral Health Fun & Accessible	Dr. Varinder Goyal (Indian Society of Pedodontics & Preventive Dentistry)
Behavioural Innovations in Paediatric Dentistry: Addressing Anxiety and Building Positive Experiences	Dr. Amogh Tanwar (Amogh's Dental World, Janakpuri, New Delhi)
Minimally Invasive Techniques in Paediatric Dentistry: The New Standard for Caries Management	Dr SG Damle (Maharishi Markandeshwar University)

Theme: **Sports Dentistry**	
Sports Dentistry: Challenges & Opportunities - Understanding the Current Scenario	Dr. Atul Surve (Indian Dental Association)
IDA - Pioneering Sports Dentistry in India	Dr. Reena Kumar (Indian Academy Of Sports Dentistry)
Sports Related Trauma: Emerging Strategies	Dr. Ajay Logani (AIIMS, New Delhi)
School Sports: Paediatric Sports Dentistry	Dr. Nikhil Srivastava (Subharti University)
Customized Mouth Guards: IASD & ISTD Mandate	Dr. Vijay Mathur (AIIMS, New Delhi)
Sports Dentistry: A New Domain - Inclusion in the BDS Curriculum	Dr. Puneet Batra (Manav Rachna Dental College)
Theme: **Tobacco Cessation**	
Leveraging Digital Health for Tobacco Cessation & Pharmacological Innovations	Dr. Vikrant Mohanty (MAIDS, New Delhi)
Nicotine Replacement Therapies	Dr. Nilam Gada (Asian Cancer Institute)
Theme: **OPMDs & Oral Cancer**	
Genetic Biomarkers for Early Detection & Prognosis of Oral Cancer Epigenetics & Oral Cancer: Decoding Role of Gene Expression in Tumour Progression	Dr Kannan Ranganathan (International Association of Oral and Maxillofacial Pathologists)
Immune Genetics & Oral Cancer: Harnessing the Power of Immunogenomics	Dr. Deepika Mishra (AIIMS, New Delhi)
MicroRNAs & Oral Cancer: Innovations in Gene Regulation & Therapeutic Targets	Dr. Varun Surya (AIIMS, New Delhi)
Hereditary Cancer Syndromes & Oral Cancer: Genetic Counselling & Preventive Strategies	Dr. Neeta Mohanty (IDS, Bhubaneswar)
Theme: **Women's Oral Health**	
Designing Patient Education Programs for Women's Oral Health	Dr. Sangeeta Dhir (Max Super speciality Hospital)
Implementing Preventive Care Programs for Postmenopausal Women	Dr. Sunita Gupta (MAIDS, New Delhi)
Hormonal Health & Oral Care: Practical Approaches for Dental Professionals	Dr. M. Siddharth (Sharda University, Noida)
Customizing Oral Hygiene Products for Women: Innovation & Selection	Dr. Laxmikant Sugandhi (Group Pharma)
Theme: **Geriatric Oral Health**	
Aging & Oral Health: Understanding the Complexities & Collaborative Approaches	Dr. Jayachandran S (GDC, Chennai)
Geriatric Oncology - Integrating oral health care in cancer care for older persons	Dr. Shalya Anand (International Health Literacy Association, USA)
Preventive Strategies in Geriatric Oral Health: Moving Beyond Reactive Care	Dr. Manu Rathee (PGIDS, Haryana)

Theme: **Orofacial Pain**	
Innovative Approaches in Orofacial Pain Management: Advanced Imaging, AI, Neuromodulators, & Emerging Pharmaceuticals	Dr. Sujay Mehta (Solidarity Dental Foundation, USA)
Beyond Opioids - Plethora of medications for management of Chronic Orofacial Pain	Dr. Upasana Sethi Ahuja (SBBDC, Ghaziabad)
Innovative Approaches to Orofacial Pain Management: Non-invasive Techniques & Mind-Body Integration	Dr. Brijesh Chandwani (TUFTS University, USA)
Theme: **Implant Dentistry**	
Digital Planning in Implant Dentistry: From Virtual Surgery to Guided Placement	Dr. Akash Sachdeva (Indraprastha Dental College, UP)
Sinus Lift Techniques: Innovative Approaches for Successful Implant Placement	Dr. Abhishek Sharma (KD Dental College, UP)
Implants in Aesthetic Zones: Techniques for Superior Outcomes in the Smile Line	Dr. Praful Bali (UCAM university, Murcia, Spain)
Implant Dentistry for Aging Patients: Innovations in Geriatric Implantology	Dr. Mahesh Chauhan (MAIDS, New Delhi)

5. Global Consortium

Date: 15-02-2025

Location: Samrastha Hall

Dr. Ambedkar International Center, New Delhi

1. Introduction

The Global Conclave on Oral Health Innovation & Research in New Delhi served as a landmark event, convening 12 global collaborators alongside key industry leaders, researchers, and policymakers to deliberate on avenues, opportunities, and challenges in global collaboration for oral health innovation. This initiative was spearheaded by the Indian Dental Association (IDA) to strengthen international partnerships and foster a sustainable innovation ecosystem in oral healthcare.

2. Key Highlights

- Global Representation: 12 esteemed collaborators from leading academic institutions, professional organizations, and industry stakeholders participated, sharing insights on best practices and innovative solutions. The session was chaired by Mr Enzo Bondioni [Executive Director, FDI].
- Deliberations on Collaboration: A round-table discussion on Day 1 of the event from 12:00 noon – 1:00 PM explored strategic alliances, joint research opportunities, industry-academia partnerships, and knowledge-sharing frameworks to address global oral health challenges. This session was compered by Dr Ramana Reddy & Dr Lakshmi Balraj (IDA).
- Engagement with Industry Partners: The conclave witnessed active participation from global industry leaders (Representation by Dr Stephen Mason, Haleon – Global) keen on supporting research, technology integration, and scalable oral health solutions.

3. Key Outcome: Signing of Letter of Intent (LoI)

One of the most significant outcomes of the conclave was the signing of a Letter of Intent (LoI) between the global partners and IDA, marking the first step toward structured, goal-oriented collaborations.

The LoI establishes the groundwork for a tripartite partnership model, wherein:

1. IDA will onboard the relevant Indian counterpart (academic institutions, professional bodies, or industry partners) based on thematic alignment and areas of interest.

2. The global collaborator, Indian counterpart, and IDA will jointly engage in research and innovation initiatives, leveraging expertise, infrastructure, and resources.
3. Key focus areas may include oral disease prevention, technology-driven innovations, workforce capacity-building, and policy-level advocacy.

4. Way Forward

The momentum generated at the conclave will be sustained through:

- Structured Follow-ups: IDA will initiate post-conclave discussions to formalize collaborative frameworks with each global partner.
- Thematic Collaborations: Tailored working groups will be established to focus on shared research priorities, technology development, and capacity-building efforts.
- Long-term Engagements: The consortium will serve as a dynamic network to facilitate sustained transborder collaboration in addressing the global burden of oral diseases and advancing innovation-driven solutions









NAME	DESIGNATION/ AFFILIATION
	Chair: Mr Enzo Bondioni (FDI) Industry Representation: Prof Stephen Mason (Global Haleon)
Prof. Dr. Lakshman Samaranayake	Professor Emeritus, and past Dean of Dentistry, University of Hong Kong
Prof. Dato' Dr. Mohamed Ibrahim Abu Hassan	Dean, Faculty of Dentistry, Mahsa University, Malaysia
Prof. Dr. Manu Mathur	Dental Public Health & Primary Care, Queen Mary University of London
Prof Amitha Ranauta	
Prof. Dr. Shenuka Singh	Full Professor, Dept. of Dentistry, University of KwaZulu - Natal, South Africa
Dr. Ruwan Jayasinghe	Prof., University of Peradeniya, Sri Lanka President, Sri Lanka Dental Assoc.
Dr. Sujay A. Mehta	Solidarity Dental Foundation
Dr. Priyanka Gudsoorkar	Solidarity Dental Foundation

NAME	DESIGNATION/ AFFILIATION
Dr. Jessica L. Klabak	Solidarity Dental Foundation
Dr. Arvind Babu	Professor,The University of the West Indies, Jamaica.
Dr. Brijesh Chandwani	Faculty, Tufts University School of Dental Medicine Secretary, American Academy of Orofacial Pain
Dr. Sumit Gupta	Diplomate, American Board of Orofacial Pain Founder & Director, Rak Dental Care & Implant Centre, UAE
Dr. Padma Gadiyar	CEO & Founder Smilo.ai, Australia
Dr. Shalya Anand	Chair, Oral Health Literacy Division

6. Scientific Abstracts Presentations

Summary

The GCOHIR 2025 Scientific Abstracts Competition successfully concluded with participation across three categories: Paper Presentations, Poster Presentations, and Table Clinics. The competition witnessed significant engagement from dental professionals, researchers, and students from multiple institutions across India.

Recognition Categories

- UG, PG, Faculty & Independent Research
- Paper, Poster, Table Clinic
- Healthcare & non-healthcare
- 1st, 2nd, 3rd

Participation rate by category:

- Paper Presentations: 173 (43.6%)
- Poster Presentations: 205 (51.7%)
- Table Clinics: 19 (4.7%)

Participant Demographics:

- Undergraduate students: 208 (52%)
- Postgraduate students: 115 (29%)
- Faculty members, Clinicians & Independent Researchers: 75 (19%)

Evaluation Metrics and Results:

- Number of reviewers: 30
- Single-blind review system
- Average review time per abstract: 5 minutes

Evaluation criteria weighted scores:

1. Scientific Thought and creativity, Originality & Novelty: 20%
2. Design, Methods & Identifies Variables: 20%
5. Theoretical & Practical Implications: 20%
6. Preparedness/ Answering questions: 20%
7. Visual Appeal & Time limit: 20%

Prize Distribution Analysis

- Total number of awardees: 25
- Institutional diversity among winners: 18 different institutions
- Gender distribution of awardees: 68% female, 32% male

Conclusion

The competition demonstrated robust participation and high-quality submissions across all categories. The diverse representation and innovative research topics reflect the growing dynamism in oral health research globally.

7. Innovation Nexus

The Innovation Exhibit Segment at the Global Conclave on Oral Health Innovation and Research (GCOHIR) 2025 represented a cornerstone of the event, dedicated to showcasing revolutionary advancements and fostering collaborative discussions on the future of oral healthcare. This international platform brought together a diverse spectrum of innovators, researchers, academic institutions, and industry leaders, enabling the exchange of groundbreaking ideas and cutting-edge technologies aimed at transforming dental and medical practices globally. The exhibit played a crucial role in promoting indigenous innovation, aligning with India's mission of Aatmanirbhar Bharat, and strengthening the global healthcare ecosystem through novel and sustainable healthcare solutions.

Outcome of Innovation Exhibit

The outcome of the Innovation Exhibit segment

WINNERS IN EACH CATEGORY

Paper Presentation

Undergraduate Category

1. **Anantdeep Singh Kawatra**
   ESIC Dental College & Hospital
2. **Muskan Jakhal**
   Jamia Millia Islamia
3. **Aadya Batra**
   Saveetha Dental College

Postgraduate Category

1. **Dr. Goli Dileep Kumar**
   Sibar Institute of Dental Sciences
2. **Dr. Akil Prawin**
   Atal Bihari Vajpayee Medical University
3. **Dr. Diya Passi**
   Center of Dental Education & Research

Faculty & Independent Researcher

1. **Dr. Kirti Buva**
   Bharati Vidyapeeth
2. **Dr. Ramprasad Vasthare**
   Manipal College of Dental Sciences
3. **Dr. Anitha R. Sagarkar, Dr. Pushpanjali K.**
   Ramaiah University of Applied Sciences

Poster Presentation

Undergraduate Category

1. **Kavya Krishnakumar & Liza Naved**
   Manav Rachna Dental College
2. **Saher Javed**
   Manav Rachna Dental College
3. **Kazi Md. Ammaruddin Md. Aleemuddin**
   Rural Dental College, PIMS

Postgraduate Category

1. **Dr. Kaleem Fatima**
   Maulana Azad Institute of Dental Sciences
2. **Dr. Isha Singh**
   Inderprastha Dental College & Hospital
3. **Dr. Shahana Khan**
   Inderprastha Dental College & Hospital

Faculty & Independent Researcher

1. **Dr. Jayachandran Sadaksharam**
   Govt Dental College & Hospital
2. **Dr. Shanmuga Sundaram**
   AIIMS-CAPFIMS
3. **Dr. Nancy Mathew**
   Jamia Millia Islamia

Table Clinics

Undergraduate Category

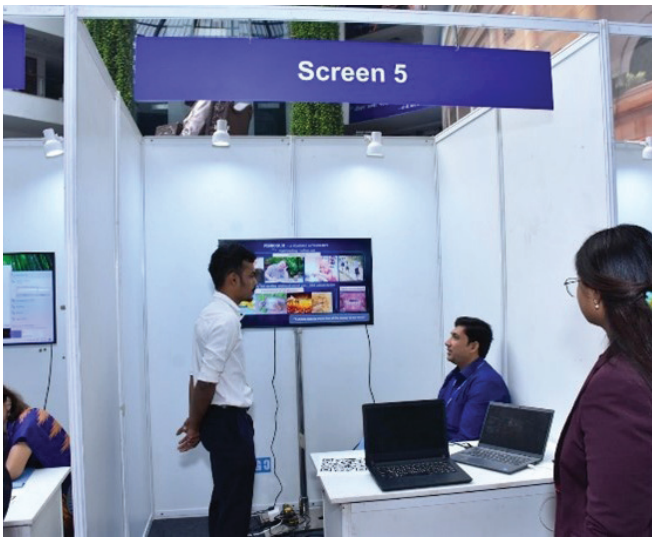
1. **Dakshita Pohane**
   Ranjeet Deshmukh Dental College & Research Center
2. **M. Priyanka**
   Sibar Institute of Dental Sciences
3. **Pearl Gupta**
   SGT University

Postgraduate Category

1. **Dr. Abhirami Vetriselvan**
   Sibar Institute of Dental Sciences
2. **Dr. R. Sai Praveena**
   Sibar Institute of Dental Sciences
3. **Dr. Pragati Goyal, Dr. Atasi Pandit & Dr. Nisha Khemka**
   K.D Dental College and Hospital

Faculty & Independent Researcher

1. **Dr. Varun Prabhuji, Dr. Pucha Sai Manaswini**
   Independent Researcher-Roots to Cusps® Private Limited







were carefully crafted to align with the overarching vision of GCOHIR 2025, aiming to foster innovation and facilitate meaningful collaborations. Through this segment, the conclave sought to provide a platform for the exploration of pioneering ideas, technological advancements, and transformative research in oral healthcare.

- **Encourage Innovation:** Inspire and promote the development of transformative ideas and technologies addressing key challenges in oral and craniofacial healthcare.
- **Facilitate Strategic Collaboration:** Foster synergies between startups, established industry players, and academic institutions to drive collaborative research and development.
- **Enhance Global Visibility:** Provide a prominent international stage for emerging companies and research bodies to exhibit their pioneering innovations.
- **Promote Knowledge Dissemination:** Enable the sharing of research findings and innovative practices to uplift the standard of oral healthcare worldwide.
- **Support Market Readiness:** Connect innovators with investors and industry experts to facilitate the transition of ideas from concept to commercialization.

Overview of Participants

The Innovation Exhibit attracted an impressive array of participants, reflecting the global appeal and significance of the conclave. The diversity of participants underscored the collaborative spirit of the event, with stakeholders from various sectors bringing unique perspectives and expertise.

Sr. No	List of Participants /Companies
1	Viscan healthtech private limited
2	Dr. Lalita Poonia
3	Dr. Chaitra Santoshkumar Mastud
4	Dr. Baswaraj
5	Medical Engineering Design & Innovation Centre, IIT Bombay
6	Sarvamangal healthcare pvt Ltd
7	Dr. Agravat Healthcare Limited
8	Manav Rachana Dental College, Haryan
9	Bharati Vidyapeeth Dental College & Hospital
10	Sibar Institute of Dental Sciences,
11	Institute of Dental Sciences, Bhubhaneshwar
12	Vishnu Dental College, Andhra Pradesh
13	School of Dental Science,Noida
14	Healyantra Healthcare Innovations Private limited
15	IDA Cyberabad Telangana
16	D.J. College of Dental Sciences & Research, Modi Nagar,UP
17	Immersive Dental Digital Technologies Pvt. Ltd
18	scanO - Trismus Healthcare Technologies Private Limited
19	KD Dental College Mathura, UP
20	Roots to Cusps Private Limited
21	Dr. Shashi Kumar
22	Dr. Shanmuga Sundaram D

Sr. No	List of Participants /Companies
23	Dakshita Pohane
24	Dr. V. Om Shiva Prashanth
25	K Sai Roshan
26	Dontin AI
27	Dr. Anjali Mishra
28	Dr. Tanu Nangia, Dr. Meena Jain, Dr. Roomani Srivastava
29	Dr. Anuhya Samala
30	Dr. Sourabh Ramesh Joshi
31	Dr. Mansa Das
32	Dr. Archi Rai
33	The Bone Bank
34	Renatus Wellness
35	Prevest Den Pro
36	Center for Development of Advance Computing
37	Group Pharma
38	Sensodyne
39	Hi - Tech Dental College (Dr Subash Chandra Nayak)
40	V-Invent
41	Dr. Tulsi Tarase
42	Dr.Khushal Makhija
43	Avoden
44	Ajo Babu George
45	Innoeversity

Concept Notes of all the Innovative Ideas of Participants

Concept Note: 1

Vi-Scan Healthtech Pvt Ltd, based in Bangalore, Karnataka, is transforming dental diagnostics in India through its innovative platform, 'ViZ'. This AI-powered platform connects dentists, diagnostic centers, radiologists, and patients, streamlining end-to-end operations like patient tracking, digital health record management, real-time sharing and analysis of 2D OPG and 3D CBCT scans, and quality management of diagnostic workflows. By enhancing diagnostic accuracy, reducing delays, and offering AI-backed insights, Vi-Scan's solution addresses critical challenges in accessibility and workflow efficiency. Their collaborative business model supports diagnostic centers with reporting, billing, and quality checks, improving patient care and operational efficiency. This integrated approach ensures early detection of dental diseases, like oral cancers and periodontal issues, thereby advancing patient outcomes and strengthening India's dental healthcare ecosystem.

Sector: Digital Health / HealthTech

Field: Dental Diagnostics, AI-Driven Medical Imaging, and Workflow Management

Concept Note: 2

V-Invent is a healthcare start-up focused on medical device innovation, boasting multiple national and international patents, awards, and publications. Dedicated to helping busy healthcare practitioners bring their ideas to market quickly and efficiently, V-Invent offers comprehensive innovation services, including intellectual property support (patents/copyrights), digital designing, 3D printing for prototypes and final products, and marketing support. Their expertise in 3D-printed medical products covers hands-on training models for dental implants and periodontology, maxillofacial prostheses, dental crowns and bridges, functional appliances, surgical guides, and even customized décor items. Additionally, their Scan-to-Model service transforms CBCT scans into 3D-printed patient-specific models, aiding in diagnosis, treatment planning, mock surgeries, and patient-specific surgical instruments (PSI) and prostheses (PSJ). Through these innovations, V-Invent enhances clinical practice, education, and patient care by offering customized, high-quality, and tech-driven solutions.

Sector: Medical Devices / HealthTech

Field: 3D Printing in Healthcare, Dental and Maxillofacial Solutions, Medical Prototyping and Custom Implants

Concept Note: 3

Dr. V. Om Shiva Prashanth's innovation, "A Novel Voice-Controlled Apparatus for Dentistry", introduces a groundbreaking solution to enhance efficiency, precision, and hygiene in dental procedures. This device integrates advanced voice recognition technology with a high-precision micromotor system, allowing hands-free control of dental tools and instruments. By using voice commands, practitioners can adjust speed, torque, and rotation in real-time without interrupting procedures — minimizing the risk of contamination and improving workflow in sterile environments. The customizable voice command interface further tailors the device to specific dental procedures, offering a safer, more hygienic, and patient-centric approach to dental care.

Sector: Medical Devices / HealthTech

Field: Dental Equipment Innovation, Voice-Controlled Medical Technology, Clinical Workflow Enhancement

Concept Note: 4

The Bone Bank, operated by Cognoscent Organ Management Pvt. Ltd., is Gujarat's first licensed bone bank, providing high-quality human-origin bone allografts sourced from donors. These allografts serve as a safe, affordable, and effective alternative to synthetic grafts and autografts, eliminating the need for additional surgeries and reducing rejection risks. The Bone Bank's products have been used in over 2000 successful surgeries across orthopedics, trauma, and dental implants without any reported allergic reactions or rejections. Their rigorous processing and quality control ensure sterile, stable allografts with a 3-year shelf life, adhering to national safety and quality standards.

Sector: Tissue Engineering / Transplantation Services

Field: Orthopedics, Dental Surgery, Trauma Care, Regenerative Medicine

Concept Note: 5

Sarvamangal Healthcare Pvt. Ltd., led by Dr. Mandar Pimprikar, specializes in innovative dental devices and advanced healthcare technologies, with a strong focus on endodontics and medical diagnostics. Their patented solutions address critical challenges in root canal therapy, disinfection, and microbial detection through cutting-edge technologies like single-step irrigating solutions, real-time pathogen screening devices, air-driven root canal activation systems, and pressure-assisted irrigation methods. These innovations enhance treatment efficiency, safety, and diagnostic accuracy, positioning Sarvamangal Healthcare at the forefront of dental and medical device innovation.

Sector Category: Dental Devices, Medical Diagnostics, and Healthcare Innovation.

Concept Note: 6

Roots to Cusps Private Limited, based in Bengaluru, Karnataka, specializes in innovative dental training and treatment tools, focusing on endodontics and periodontology. Their patented solutions include:

1. PriciGuide® and PriciPost® System: A minimally invasive endodontic device designed to simplify root canal treatments and post-placement with greater accuracy, reduced chairside time, and enhanced fracture resistance. Its sleeveless design eliminates traditional guide limitations, making it cost-effective and versatile for various dental procedures.
2. PerioSimulator: A highly realistic, resin-based dental simulation model for preclinical training in periodontology, showcasing periodontal bone defects and soft tissue pathologies. It enhances hands-on learning, improves surgical proficiency, and serves as a patient education tool.

Sector Category: Dental Devices, Endodontics, and Periodontal Education Innovation.

Concept Note: 7

The "Docked" mobile application aims to digitize logbook entries for medical and dental professionals, streamlining the mandatory documentation of clinical work, academic activities, and procedural records required for final university examinations. By replacing manual logbook entries with a digital platform, the app allows real-time data entry, cloud-based record storage, and easy access for monitoring and evaluation by faculty. This ensures accurate tracking of students' and professionals' progress, facilitates timely interventions, and supports long-term data retrieval and analysis.

Category:

Healthcare Education & Digital Health Solutions

Concept Note: 8

The solar-powered dental micromotor is an innovative, eco-friendly device designed to enhance dental procedures by using solar energy. Equipped with a high-speed motor, it powers dental handpieces for tasks like cutting, polishing, drilling, and shaping teeth or prosthetics. By utilizing photovoltaic panels and rechargeable batteries, it ensures uninterrupted dental care even in remote or underserved areas with limited electricity access. Compact, lightweight, and portable, it's ideal for mobile clinics, humanitarian missions, and emergency dental care, promoting sustainability and accessible oral healthcare.

Category:

Dental Healthcare & Renewable Energy Solutions

Concept Note: 9

Immersive Dental Digital Technologies revolutionizes dental education through India's first AI-powered, case-based simulation platform, the "Situation Room." This innovative training environment allows dental students and early-career professionals to practice clinical skills and decision-making in a risk-free, interactive setup. Inspired by U.S. Continuing Medical Education (CME) practices, it replicates real-world dental scenarios, from routine care to complex surgeries, enhancing technical proficiency and clinical confidence without relying on live patient training.

Category:

Dental Education & Simulation-Based Training

Concept Note: 10

DentalCaseMate is an AI-driven dental practice management solution designed to automate documentation, enhance communication, and improve patient care. Key features include

automated case sheet generation, multilingual speech-to-text transcription, secure cloud storage, treatment progress tracking, and AI-powered diagnostic support. By streamlining workflows and providing real-time insights, DentalCaseMate optimizes efficiency, reduces manual record-keeping, and improves patient engagement. Its phased development ensures continuous feature enhancement and wide-scale adoption in dental practices.

Category:

Dental Healthcare Technology & Practice Management

Concept Note: 11

Saliva-based Point-of-Care Testing (POCT) devices offer a rapid, non-invasive, and efficient method for diagnosing oral diseases. By leveraging salivary biomarkers, buffer capacity tests, and metabolome analysis, these devices provide real-time results for common oral health conditions. Despite the potential, current techniques like colorimetric, optical, and electrochemical biosensors often lack cost-effectiveness and accessibility. This concept focuses on developing simple, affordable indicators with high diagnostic accuracy for chairside or bedside use, improving clinical outcomes by enabling quick, informed treatment decisions.

Category:

Oral Healthcare Diagnostics & Medical Devices

Concept Note: 12

The Smart Dental Handpiece by Healyantra Healthcare Innovations is a groundbreaking tool designed to enhance precision and safety in dental procedures. Equipped with a high-resolution camera and real-time annotation capabilities, it provides a magnified digital view of the treatment area, reducing accidental damage to adjacent teeth and improving procedural accuracy. Its ergonomic design minimizes the risk of musculoskeletal disorders among dentists, while also enabling real-time supervision, training, and documentation. Seamlessly integrating with existing dental chairs, this innovation significantly improves treatment outcomes and dental practice efficiency.

Category:

Dental Healthcare Technology & Medical Devices

Concept Note: 13

Dontin AI: AI-Powered Dental Care & Practice Management

Dontin AI revolutionizes oral healthcare by combining AI dental checkups and an intelligent Dental Practice Management System (DPMS). Using smartphone-based intraoral scans, the AI detects dental issues like cavities and gum problems, providing instant reports and consultation options. The DPMS automates clinic operations, including appointment scheduling, patient management, and billing, enhancing efficiency and patient experience.

Category:

- Field: Dental and Oral Health
- Sector: Digital Health, AI Diagnostics, Practice Management, Tele-Dentistry

Concept Note: 14

Bamboo Mouth Mirror & Probe: Sustainable Dental Tools

This innovation replaces traditional plastic or metal dental tools with eco-friendly bamboo alternatives. The bamboo mouth mirror and probe provide the same diagnostic accuracy and visibility needed for oral examinations while being biodegradable, sustainable, and naturally antimicrobial, reducing plastic waste and bacterial growth. This aligns with the growing trend toward environmentally conscious healthcare practices in dentistry.

Category:

- Field: Dental and Oral Health
- Sector: Sustainable Medical Devices, Eco-Friendly Healthcare Innovations

Concept Note: 15

KlusterMedAI: AI-Powered Intraoral Screening for Oral Cancer Detection

KlusterMedAI introduces an AI-integrated intraoral imaging system designed for early oral cancer detection. Using deep learning algorithms and smartphone-captured images, the tool classifies oral lesions as benign, precancerous, or malignant in real time, enabling quick and accurate diagnosis. Its cloud-based infrastructure supports remote

consultations, improving access to specialist care, especially in underserved regions. This scalable innovation aims to enhance diagnostic accuracy, reduce human error, and save lives through early intervention.

Category:

- Field: Dental and Oral Health, Oncology
- Sector: AI-Powered Diagnostics, Point-of-Care Technology, Digital Health Solutions

Concept Note: 16

Fiction-Based Learning Model for Oral Pathology Education

Dr. Tulsi Tarase's innovation addresses the challenges dental students face in understanding oral pathology, where traditional teaching methods often fail to spark interest and clinical understanding. This fiction-based learning application uses immersive storytelling with character-driven narratives representing different tumors and their features, creating a memorable and engaging educational experience. The product also offers mentoring sessions, certification, histopathology slide training, and career guidance, promoting early diagnosis and stronger clinical knowledge in oral oncology.

Category:

- Field: Dental Education, Oral Oncology
- Sector: EdTech in Healthcare, Digital Learning Solutions

Concept Note: 17

Oral Health Education Module for Visually Impaired Children

Developed by Tanu Nangia, Meena Jain, and Roomani Srivastava, this project focuses on creating and validating evidence-based oral health education (OHE) material tailored for visually impaired students. Using the PRECEDE-PROCEED health education model, the team conducted focus group discussions and interviews with visually impaired children and their teachers to assess their current oral health knowledge and educational needs.

Based on the findings, Braille content and tactile images were developed in collaboration with Raise Line Foundation, ensuring accessibility and accurate oral health representation. The material was validated by dental experts and designed with custom-made tactile images on polystyrene sheets, providing a unique, sensory-based learning experience for students.

Category:

- Field: Oral Health Education, Special Needs Healthcare
- Sector: Inclusive Education, Public Health, Preventive Dentistry

Concept Note: 18

Preservative Dentistry

Proposed by Dr. Lalita Poonia from Jaipur, Rajasthan, this concept introduces the idea of "Preservative Dentistry" - going beyond preventive and minimally invasive approaches to focus on preserving vital dental structures like dentin, which play a crucial role in maintaining flexural strength and long-term dental health. This approach emphasizes minimizing tooth structure loss during endodontic procedures and prosthesis preparations, ensuring better functional and aesthetic outcomes.

Category:

- Field: Restorative and Conservative Dentistry
- Sector: Dental Healthcare, Endodontics, Prosthodontics

Concept Note: 19

Recycling Used Alginate into a Temporary Cement

Proposed by Dr. Khushal Makhija from New Delhi, this innovative idea addresses the environmental burden of single-use dental alginate by recycling it into a cost-effective, biocompatible temporary luting cement for prosthetic restorations. The process involves heat-treating used alginate up to 900°C, mixing it with calcium sulfate hemihydrate, and adjusting water temperature to control setting time — offering easy manipulation, sufficient retention, and easy removal. This eco-friendly solution reduces clinical waste, lowers material costs, and has potential for commercial production and optimization for permanent cementation.

Category:

- Field: Dental Materials and Prosthodontics
- Sector: Eco-friendly Dentistry, Restorative Dentistry

Concept Note: 20

Custom Scar Reduction and Healing in Severe Facial Burn and Craniomaxillofacial Trauma Patients

This innovation introduces Transparent Facial Orthoses (TFOs) — customized face masks created through 3D scanning and printing technology — for the treatment of severe facial burns (>40%) and craniomaxillofacial trauma. Traditional scar management methods like compression bandages and silicone therapy often fall short in minimizing hypertrophic and keloid scarring. TFOs offer precise anatomical fit, combining pressure therapy and silicone gel sheets, which reduce scar formation, improve healing, and enhance aesthetic and psychosocial outcomes for patients. Using biocompatible materials like transparent PLA, these masks are tailored for comfort and effective scar management.

Category:

- Field: Medical Devices and Rehabilitation
- Sector: Burn Care, Craniomaxillofacial Trauma, and Reconstructive Surgery

Concept Note: 21

Dr. Anuhya Samala's innovations focus on enhancing precision and diagnostic efficiency in endodontic and dental care through two novel devices currently in the patent process:

1. EnDIGITAC: A Novel Finger Instrument for Endodontic Use:

   This device addresses the technical challenges of material placement within the intricate root canal anatomy. Traditional tools like pluggers and syringes often lack the necessary tactile control, leading to imprecise application of materials like MTA and Biodentine. EnDIGITAC introduces a finger-driven mechanism with a micro-dispenser, allowing gradual, pressure-controlled material release. This ergonomic design significantly improves precision, control, and efficiency in endodontic procedures, reducing the risk of overfilling and postoperative complications.

2. Dento X Pulp Tester

   Accurate assessment of dental pulp vitality is crucial for effective diagnosis and treatment, yet traditional thermal testers often lack accuracy and patient comfort. The Dento X Pulp Tester enhances diagnostic capabilities by using advanced, controlled temperature modulation to deliver optimized thermal stimuli. Its ergonomic, non-invasive design ensures patient comfort while providing real-time feedback and more reliable diagnostic outcomes, particularly in complex dental cases.

Category:

- Field: Dental Devices and Diagnostic Tools
- Sector: Endodontics, Dental Diagnostics, and Therapeutics

Concept Note: 22

Concept Note:

Dentstudy is an AI-powered educational platform designed to simplify dental education by providing instant, precise, and curriculum-aligned answers for BDS and MDS students in India. It addresses the challenge of navigating overwhelming and time-consuming traditional resources, offering an accessible, efficient, and reliable learning tool. Beyond students, it also serves as a quick reference guide for dental faculty and professionals, enhancing both learning and teaching experiences.

Category:

This idea belongs to the Dental Education and Digital Health sector within the broader Healthcare and EdTech field.

Concept Note: 23

Dr. Agravat Healthcare Ltd., based in Ahmedabad, Gujarat, is pioneering innovative, patient-centric oral healthcare solutions with a strong focus on managing Oral Submucous Fibrosis (OSMF) and promoting overall oral wellness. Their product line includes the OSMF Mouth Opening Kit — a first-of-its-kind DIY solution for reversing OSMF symptoms — along with nutritional support like OSMF Vita Ultimate Health Gummies and targeted care products like the OSMF Smile Toothgel and OSMF Pops. Additionally, they address tobacco cessation with their Quit Smoking & Gutkha (QSG) DIY Kit and

enhance dental practice efficiency through tools like the EndoDeck. Aesthetic care is also covered with the One Touch Smile teeth-whitening solution. Their innovations offer non-invasive, cost-effective, and accessible treatment options, aiming to improve oral health outcomes and quality of life.

Category:

This idea belongs to the Oral Healthcare and Dental Innovation sector within the Medical Devices, Wellness, and Preventive Healthcare field.

Concept Note: 24

Dr. Sourabh Ramesh Joshi's patents focus on innovative dental and medical devices designed to enhance oral healthcare and clinical efficiency. These include:

1. Toothbrush with Rotatable Brush Head: A utility toothbrush with a 360° rotatable and interchangeable brush head, designed to improve accessibility to posterior, lingual, and palatal teeth surfaces. It supports the BASS brushing technique and is particularly beneficial for patients with dexterity issues like arthritis.
2. Device for Tooth Extraction: Pediatric tooth extraction forceps with an integrated periosteal elevator, designed to minimize instrument use and patient anxiety while ensuring safer, atraumatic extractions through force-sensing technology.
3. System for Three-Dimensional Dental Scanning: A laser-based dental scanning system aimed at capturing detailed intracanal morphology and aiding in precise endodontic treatments.
4. Titanium Test Tube with Glass Vent: A specialized test tube featuring a transparent window to easily distinguish platelet-rich fibrin, enhancing the efficiency of clinical and laboratory processes.

Category:

These innovations belong to the Oral Healthcare and Dental Technology sector, with a strong focus on Medical Devices and Diagnostic Tools. They address advanced solutions in dental hygiene, surgical instruments, diagnostic imaging, and clinical lab equipment.

Concept Note: 25

Dr. Shashi Kumar's patents focus on groundbreaking advancements in dental surgical instruments and systems, aimed at enhancing precision, efficiency, and patient safety in oral healthcare. The innovations include:

1. Powered Dental Elevator/Luxator (Patent No: 531949): A mechanized dental instrument designed for maxillofacial surgeries, enabling efficient luxation and elevation of teeth through a pneumatic oscillating mechanism. Its modular design allows easy component replacement, and the pressurized air-driven system ensures precise, controlled movements with sterilizable features.
2. Dental Robotic System (Patent in Process): An AI-powered robotic system with a compact, 5+1 DOF robotic manipulator for advanced dental procedures in confined clinical spaces. It uses Intel RealSense depth sensing and 2D imaging for real-time visualization and autonomous operation, enabling highly precise tasks like crown preparation and scaling with minimal dentist intervention.
3. Expandable Dental Implants (Patent Application No: 202431101806): A novel dental implant system designed to improve anchorage in low-density bone conditions. The implant expands within the bone cavity, eliminating the need for complex procedures like sinus lifts and ensuring long-term stability without the risk of displacement.

Category: These innovations belong to the Oral Healthcare and Dental Technology sector, specifically focusing on Dental Surgical Instruments, Robotics, and Implantology. They address key challenges in dental surgery, prosthodontics, and automation, setting new benchmarks in clinical efficiency and patient care.

Concept Note: 26

Dr. Shanmuga Sundaram D's innovation introduces the SAFE Intermaxillary Fixation (IMF) Clips and Applicator, designed to simplify and enhance the process of dental occlusion management in cases of maxillofacial injuries, orthognathic surgeries, TMJ disorders, and jaw fractures. Unlike traditional methods like Erich arch bars and bone fixation screws, this system offers a minimally invasive, fast, safe, and aesthetic solution with tooth-specific clips that use natural tooth embrasures for mechanical locking. The custom-designed applicator ensures easy application and removal, reducing operating

time and minimizing the risk of needle-stick injuries, dental trauma, and poor oral hygiene.

This innovation stands out for its patient and operator-friendly design, improving safety, efficiency, and comfort while maintaining cost-effectiveness and preserving periodontal health.

Category: Dental Surgical Devices and Maxillofacial Technology

Field of Healthcare: Oral and Maxillofacial Surgery, Dental Technology

Concept Note: 27

Dr. Chaitra Santoshkumar Mastud's innovation is a preformed, ready-to-use intra-oral fixed device designed to treat pediatric obstructive sleep apnea (OSA) in children aged 9-14 years with Class II malocclusion. OSA, affecting over 24 crore children in India, causes intermittent breathing interruptions during sleep, leading to severe health risks like diabetes, heart issues, cognitive impairment, and poor development. Existing treatments like CPAP, surgery, and customizable devices face scalability, cost, and comfort issues. This device offers a permanent, scalable, and cost-effective solution by addressing airway constriction during the child's critical growth phase. It is easy to install, comfortable, requires no technical skills, and has the potential to provide long-term relief.

Healthcare Category:

- Field: Dental and Pediatric Healthcare
- Sector: Medical Devices / Orthodontics / Pediatric Sleep Medicine

Concept Note: 28

AMALGAVAC – Smart Suction System is an innovative dental waste management device designed to address the critical issue of amalgam and mercury disposal in dental practices. Equipped with a 2-micron membrane filter, safe collection chamber, and compatibility with standard suction systems, it captures amalgam particles before they enter water systems, reducing mercury pollution and ensuring compliance with environmental regulations. AMALGAVAC is user-friendly, cost-effective, low-maintenance, and sustainable, making it an ideal solution for dental clinics, dental colleges, public health hospitals, and international markets. It enhances waste management practices, protects public health, and contributes to environmental safety.

Healthcare Category:

- Field: Dental Healthcare / Environmental Health
- Sector: Medical Devices / Waste Management / Eco-friendly Healthcare Solutions

Concept Note: 29

Vishnu Dental College's ideas:

1. Vishnu Rural Dental Clinics – Field: Public Health/ Dental Care Delivery

A 3-tier dental care service model providing affordable and accessible dental care to rural populations through 45 clinics. It integrates comprehensive oral health exams, patient counseling, and tele-dentistry services.

2. Vaidhyo – Field: HealthTech/Dental Informatics

An advanced patient management software centralizing medical and dental records, treatment planning, and financial transactions, competing with established systems like Practo Ray and Dentrix.

3. Portable Vacuum Chamber – Field: Occupational Health/Dental Safety Equipment

A suction-assisted dental appliance trimming chamber designed to capture harmful dental dust at its source, promoting safety and hygiene in dental labs.

4. AUTO ONE-B – Field: Infection Control/Medical Devices

An all-in-one sterilization device that reduces space, time, and cross-contamination risks, streamlining dental instrument reprocessing.

5. Automatic Material Dispenser – Field: Dental Technology/Clinical Efficiency

An AI-driven system ensuring precise and contamination-free dispensing of dental materials, enhancing workflow and restoration quality.

6. ARSVision – Field: Dental Instruments/Ergonomic Design

An innovative dental mirror combining visualization and retraction, featuring an adjustable head and anti-fog coating for enhanced efficiency during procedures.

Ideas fall under the broad category of "Healthcare Innovation and Technology in Dental Care".

This encompasses:

- Rural Healthcare Delivery & Accessibility
- Digital Health Solutions
- Occupational Health & Safety
- Sterilization & Infection Control
- Medical Device Innovation

Concept Note: 30

Innovations from Sibar Institute of Dental Sciences, Guntur, Andhra Pradesh

Sibar Institute of Dental Sciences presents groundbreaking innovations aimed at advancing dental care, ergonomics, sterilization, and diagnostic tools.

1. Ergonomic Operator Tool – A Dentist's Pivotal Aid: A wearable posture correction system with real-time feedback to ensure dentists maintain optimal ergonomic posture, reducing musculoskeletal strain.
    - Category: Ergonomics in Dental Practice / Occupational Health
2. Novaster–Portable Multi-Phase Flash Sterilization Device: A fully automated, compact sterilization unit integrating ultrasonic cleaning, vacuum drying, and steam sterilization for efficient instrument sterilization in resource-limited settings.
    - Category: Infection Control / Medical Device Innovation
3. ArchPeriCan – Simultaneous Measurement Tool: A mechanical orthodontic tool for accurate and cost-effective measurement of arch perimeter and intercanine width, enhancing diagnostic efficiency.
    - Category: Orthodontics / Dental Diagnostics
4. Rainbow Periodontal Probe: A color-coded diagnostic probe for improved visual perception and accuracy in periodontal disease management and treatment planning.
    - Category: Periodontology / Diagnostic Tools

These innovations address critical needs in dental healthcare, improving practitioner well-being, enhancing diagnostic precision, and ensuring efficient sterilization and infection control.

Categories within the healthcare sector:

- Dental Ergonomics and Occupational Health
- Infection Control and Medical Device Innovation
- Orthodontics and Dental Diagnostics
- Periodontology and Diagnostic Tools

Concept Note: 31

The School of Dental Sciences, Sharda University, presents a range of innovative dental technologies designed to enhance clinical efficiency, patient care, and environmental sustainability. These include:

- Cheek Retractor with Light: A C-shaped device with integrated LED lights for enhanced visibility during dental procedures. (Category: Dental Diagnostics & Clinical Devices)
- Nano Hydroxyapatite Silica Additive for GIC: A novel dental and orthopedic cement with enhanced strength and biocompatibility. (Category: Biomaterials & Restorative Dentistry)
- Composite Shaping Instrument: A light-curing device for precise shaping and sculpting of dental composites. (Category: Dental Instruments & Restorative Tools)
- Occlusal Positioning Device: A tool for accurate maxillomandibular orientation and reduced error in teeth arrangement. (Category: Prosthodontics & Occlusion)
- Herbal Bio-Ceramic Sealer: A root canal sealer with antimicrobial and anti-inflammatory properties. (Category: Endodontics & Bioceramics)
- Eco-Friendly Organic Dental Instrument: A biodegradable dental explorer made from bamboo. (Category: Sustainable Dentistry)
- AI-Based 3D Craniofacial Reconstruction: A deep learning model for 3D facial reconstruction from CT images for forensic and clinical applications. (Category: AI in Healthcare & Forensic Medicine)

Concept Note: 32

scanO – Innovating Oral Health Screening with AI):

scanO is an AI-powered oral health screening solution that provides quick, accessible, and reliable

dental assessments. Using advanced AI algorithms, it analyzes images of a user's teeth to identify potential issues like cavities, plaque buildup, and gum inflammation. This technology enables self-screening via smartphones or in-clinic devices, offering instant preliminary reports and guiding users toward professional care when needed. By enhancing early detection and promoting preventive care, scanO makes dental health more proactive and widely accessible.

Category: Dental and Oral Healthcare

Sector: Preventive Dentistry, HealthTech (AI-driven diagnostics)

Concept Note: 33

Manav Rachna Dental College (Faridabad, Haryana) has presented a diverse array of innovative dental and healthcare devices and materials, focusing on endodontics, biomaterials, and patient care. With 27 approved patents and 2 in process, 23 innovations will be showcased at the exhibit.

Key Innovations and Their Categories:

1. Dental Devices and Surgical Tools:

- Photoilluminated Dental Excavator: Enhanced vision and cavity removal with photoillumination and an intraoral miniature camera.
- Flexomagnetic File Retrieval System: Instruments for removing broken file fragments from different root canal segments.
- Surgical Screwdriver: Speed and torque-controlled device for precise screw insertion in bone fractures.

2. Biomaterials and Regenerative Solutions:

- Bioactive Glass Nanoparticles Coated Gutta-Percha: Antimicrobial root canal sealing material with enhanced infection control.
- Plant-Based and Herbal Scaffolds: Cost-effective, antimicrobial, and biocompatible bone graft alternatives.
- Biocompatible and Growth Factor Scaffolds: Advanced materials for bone tissue regeneration.

3. Diagnostic and Monitoring Devices:

- Dualmicrobe Detection Kit: Rapid bacterial contamination detection in root canals.
- Real-Time Tooth Health Monitoring Device: Continuous assessment of dental health parameters.

4. Patient Comfort and Care Innovations:

- Preanesthetic Mucosal Conditioning Device (PMCD): Cryoanesthesia device for localized numbing without chemicals.
- Robotic Assistant for Dental Precision: System aiding precise dental procedures.
- Nanorobots in Dentistry: Miniature robots for dental applications.

5. Preventive and Therapeutic Products:

- Orally Dispersible Ayurvedic Cleansing Tablets: Natural oral hygiene solution.
- CHAMP: Curriculum promoting food-based media literacy for health education.
- SAARTHI: Holistic initiative for compassion, healthcare, and well-being.

These innovations fall under the categories of Dentistry, Endodontics, Biomaterials, Regenerative Medicine, Medical Devices, and Patient Care Technology.

Concept Note: 34

Comprehensive Oral Health Outreach & Education Initiative (Dr. Manesh Lahori, KD Dental College & Hospital, Mathura)

- Idea: A community outreach program providing state-of-the-art oral healthcare and education to underserved populations, focusing on preventive care, timely diagnosis, and treatment, including X-ray facilities and labs.
- Field of Healthcare: Public Health, Preventive Dentistry, Community Healthcare "Little Numb Tip" (Akil Prawin S S, Mathura)
- Idea: A novel tip for topical anesthetic sprays in dental care, minimizing aerosol spread to improve comfort, taste, and efficacy during local anesthesia administration—especially for pediatric patients.

Concept Note: 35

Institute of Dental Sciences, Bhubaneswar:

1. Biopsy Instrument with Camera and Fiber Optic Light (Prof. Dr. Neeta Mohanty)

- Category: Diagnostic Devices, Oral Oncology
- Field: Medical Devices, Telemedicine
- Impact: Enables early diagnosis and treatment of oral cancers with enhanced precision and real-time expert collaboration.

2. Endodontic File Viewing Box (EVA) (Dr. Lora Mishra)

- Category: Dental Instruments, Endodontics
- Field: Diagnostic Tools, Clinical Efficiency
- Impact: Improves visualization of instrument defects, enhancing patient safety and reducing procedural errors.

3. Self-Aspirating Endodontic Irrigation and Suction Device (Dr. Gunjan Srivastava)

- Category: Dental Instruments, Endodontics
- Field: Medical Devices, Root Canal Therapy
- Impact: Provides simultaneous irrigation and suction with pressure control, reducing cross-contamination and procedural complications.

4. Toluidine Blue O and Mucosal Application Kit (Dr. Swagatika Panda)

- Category: Diagnostic Tools, Oral Cancer Screening
- Field: Pharmaceutical Innovation, Early Detection
- Impact: Offers a cost-effective, non-invasive, and highly sensitive screening tool for oral cancer detection.

5. Illumination Assistive Device for X-Ray Source (Dr. Rupsa Das)

- Category: Imaging Technology, Dental Radiology
- Field: Medical Devices, Diagnostic Imaging
- Impact: Enhances precision in dental X-rays by improving illumination and eliminating partial image formation.

Category - dental healthcare innovation and contributes to improving diagnostics, patient safety, and treatment efficiency in oral health.

Concept Note: 36

Innovative Ideas from DJ College of Dental Sciences and Research

1. Earaille Brush

- Category: Assistive Technology, Oral Hygiene
- Field: Inclusive Healthcare, Dental Care Innovation
- Concept: A smart dental care device designed for the visually impaired, featuring tactile feedback, audio guidance, customized alarms, and Braille-imprinted buttons. It dispenses tooth tabs, activates a water flosser, and offers step-by-step brushing guidance, promoting self-reliance in oral hygiene.

2. Automated Diagnostic Machine (ADM)

- Category:AI-Powered Diagnostics, Preventive Care
- Field: Dental Technology, Telehealth
- Concept: An AI-driven diagnostic station offering preliminary dental assessments via facial profile scanning and intraoral imaging. It connects users with local dentists and provides quick, efficient preliminary diagnoses for oral health conditions.

3. Filoscope

- Category: Endodontics, Minimally Invasive Devices
- Field: Dental Surgery, Imaging Technology
- Concept: A root canal treatment device integrating a camera into the endodontic file stopper for real-time canal visualization, reducing reliance on X-rays and improving procedural efficiency.

4. Virometer

- Category: Infection Control, Occupational Safety
- Field: Virology, Dental Practice Safety
- Concept: A quick screening tool for detecting the transmission of Triple H viruses (HBV, HCV, HIV) through salivary fluid, ensuring the safety of dental professionals.

5. Fibrogum

- Category: Preventive Dentistry, Pediatric Oral Care

- Field: Nutraceuticals, Dental Hygiene
- Concept: A xylitol-based chewing gum enriched with dietary fibers aimed at reducing dental plaque and preventing caries progression in primary dentition.

6. Denture Gennie

- Category: Prosthodontics, Digital Health
- Field: Dental Technology, Patient Care Management
- Concept: A microchip embedded in dental prostheses providing secure patient identification, prosthesis information, and real-time bone resorption data. Accessible through an NFC-enabled app, it offers alerts for repairs and state monitoring.

7. Chromatic-Beep Airotor

- Category: Dental Instruments, Endodontics
- Field: Clinical Efficiency, Safety Devices
- Concept: An LED-integrated airotor handpiece with color-changing light and audible alerts when nearing vital pulp tissue, minimizing the risk of accidental pulp exposure during tooth preparation.

8. Clean-It (Prosthesis Cleaning Device)

- Category: Sterilization, Prosthodontics
- Field: Dental Hygiene, Infection Control
- Concept: A compact, UV-C technology-based device designed for rapid sterilization of dental prostheses, ensuring safety and readiness within three minutes.

These innovative concepts address diverse aspects of dental healthcare, ranging from assistive technology and diagnostics to infection control and prosthodontics, enhancing both patient care and clinical efficiency.

Concept Note: 37

Bharati Vidyapeeth (Deemed to be University) Dental College and Hospital, Navi Mumbai

Patents: 31 approved, 5 in process

Innovations and Categories:

1. Modified Mandibular Molar Forceps – Advanced hybrid beak design for efficient tooth extraction, reducing operation time and root fractures. (Oral Surgery)
2. Modified Intraligamental Cartridge Syringe – Pre-filled, ergonomic syringe for precise anesthetic delivery and enhanced patient comfort. (Anesthesia/Patient Care)
3. Portable UV Sterilization Device for Endo Hand Files – Battery-powered, UV-C sterilizer for on-the-go infection control. (Sterilization/Infection Control)
4. Adjustable Finger Grip for Endodontic Hand Files – Ergonomic, self-locking grip preventing slippage and ingestion risk. (Endodontics)
5. Dental Wax Carver – Curved-end instrument to improve students' psychomotor skills for dental anatomy carving. (Education/Training)
6. Biomedical Device for Apical Pathology Detection – Real-time imaging and data processing tool for faster and more accurate endodontic diagnosis. (Diagnostic Technology)

Sector: Dental Healthcare Innovation and Technology.

Distribution of Innovation and Trade Exhibitors

The distribution of participants in the Innovation Exhibit Segment underscored the emphasis on showcasing groundbreaking ideas and advanced products. A total of 45 stalls were set up, providing a comprehensive platform for innovators and industry leaders to present their contributions.

The breakdown of the exhibit types is as follows:

- Innovation Exhibitors: 38 stalls, accounting for 84% of the total exhibit space. These stalls highlighted cutting-edge research, novel technologies, and transformative healthcare solutions from startups, independent researchers, and academic institutions.
- Trade Exhibitors: 7 stalls, making up 16% of the total. These exhibits featured established companies offering state-of-the-art dental products, advanced medical devices, and service models with proven market impact.

The overwhelming presence of innovation-focused exhibitors reflected the conclave's commitment to fostering creativity and pushing the boundaries of oral healthcare advancements. The balanced inclusion of trade exhibitors ensured the integration of practical, market-ready solutions with emerging

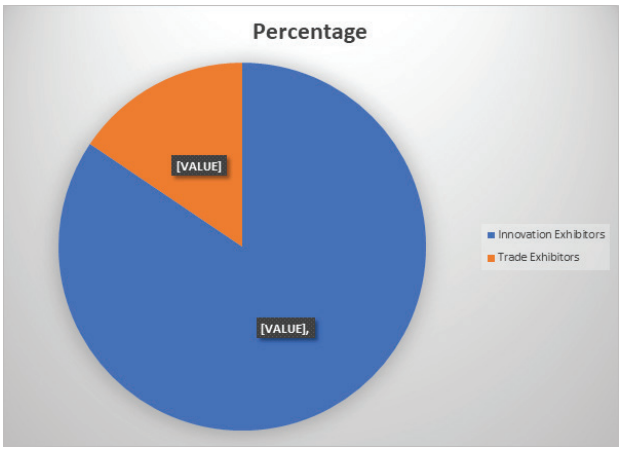
research, creating a dynamic and well-rounded showcase.

The Innovation Exhibit attracted an impressive array of participants, reflecting the global appeal and significance of the conclave. The diversity of participants underscored the collaborative spirit of the event, with stakeholders from various sectors bringing unique perspectives and expertise.

The total number of participants stood at 45, comprising a well-balanced mix of innovators and industry representatives:

- Startups: 14 participants (31%) – These early-stage companies brought fresh, market-ready solutions driven by innovative technologies and forward-thinking approaches.
- Independent Researchers: 15 participants (33%) – Representing individual efforts in research and innovation, these participants showcased unique projects addressing critical challenges in oral healthcare.

Category	No of Stalls	Percentage
Innovation Exhibitors	38	84%
Trade Exhibitors	7	16%
Total	45	100%



- Mentors: 1 participant (2%) – An industry expert providing strategic insights and guidance to budding innovators.
- College Participants: 8 participants (18%) – Academic institutions contributed significantly by presenting student-led research and institutional innovations, emphasizing the role of education in advancing healthcare.
- Trade Industry: 7 participants (16%) – Established companies showcased proven market-ready products and services, bridging the gap between innovation and commercialization.

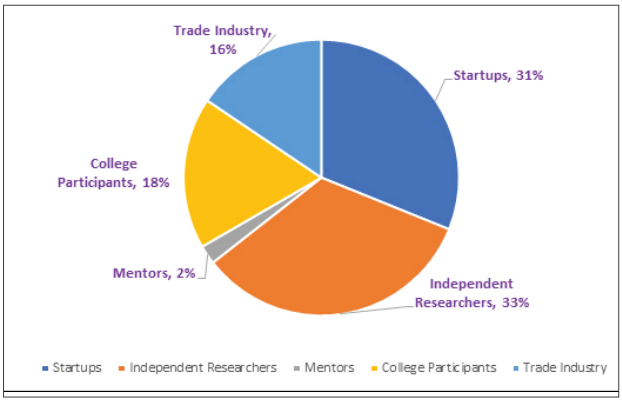
This diverse and well-represented pool of participants fostered an environment rich in collaborative potential, enabling the exchange of ideas from multiple perspectives and expertise.

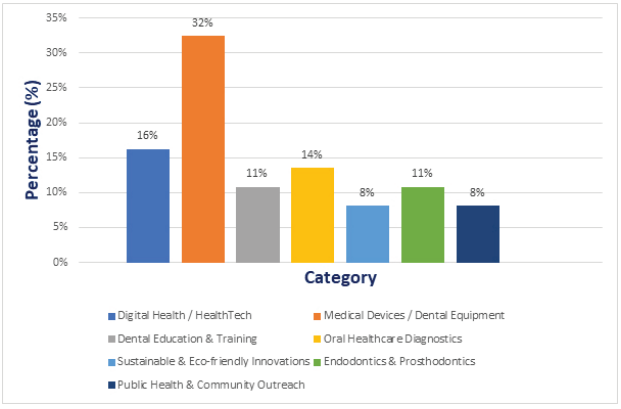
The varied representation ensured a holistic approach to innovation, bringing together theoretical research, practical applications, and market-ready solutions. This collaborative spirit laid the foundation for future partnerships and the advancement of oral healthcare on a global scale.

The Innovation Exhibit featured a series of dynamic activities designed to showcase groundbreaking ideas, facilitate knowledge sharing, and foster collaboration. These activities provided participants with opportunities to present their innovations and engage with industry experts.

- Innovation Presentations: Participants delivered detailed presentations, providing insights into the technological capabilities, clinical applications, and commercialization potential of their innovations.
- Interactive Demonstrations: Live demonstrations offered attendees an immersive experience, showcasing the practical functionality and benefits of cutting-edge devices and digital solutions.
- Panel Discussions: Thought leaders and industry experts engaged in insightful

Category	Number of Participants	Percentage
Startups	14	31%
Independent Researchers	15	33%
Mentors	1	2%
College Participants	8	18%
Trade Industry	7	16%
Total	45	100%





discussions on emerging trends, future directions, and the impact of technology on oral healthcare.

- Networking Sessions: Dedicated sessions enabled meaningful interactions between innovators, investors, and key industry stakeholders, fostering potential partnerships and collaborative ventures.
- Concept Notes: A comprehensive collection of concept notes detailed the technical specifications, research foundations, and market potential of each innovation.

The engaging activities at the Innovation Exhibit not only showcased technological prowess but also provided a fertile ground for collaboration and idea exchange.

The active participation and enthusiasm demonstrated the importance of these platforms in driving innovation.

Statistical Analysis of the Concept Notes: Categorization and Insight

It provides a statistical breakdown & categorization of the 37 concept notes submitted, highlighting their sector, field of innovation, & contribution to dental and healthcare advancements.

Category-Wise Distribution

1. Digital Health / HealthTech: 7 ideas (16%)

- AI-powered diagnostic platforms
- Digital health records management
- Practice management solutions
- Tele-dentistry innovations

2. Medical Devices / Dental Equipment: 12 ideas (32%)

- Advanced dental tools and surgical instruments
- Voice-controlled dental devices
- 3D printing for customized implants and models

3. Dental Education & Training: 4 ideas (11%)

- Simulation-based training environments
- Educational modules tailored for special needs
- Fiction-based learning applications

4. Oral Healthcare Diagnostics: 5 ideas (14%)

- Point-of-care testing devices
- Saliva-based diagnostic tools
- AI-driven oral screening systems

5. Sustainable & Eco-friendly Innovations: 3 ideas (8%)

- Bamboo-based dental tools
- Recycling dental materials into new products
- Renewable energy-powered dental devices

6. Endodontics & Prosthodontics: 4 ideas (11%)

- Minimally invasive endodontic devices
- Advanced root canal treatment systems
- Custom prosthodontic tools and implants

7. Public Health & Community Outreach: 3 ideas (8%)

- Rural dental care delivery models
- Oral health education initiatives
- Accessible and inclusive healthcare solutions

Statistical Insights

- Dominant Category: Medical Devices / Dental Equipment (32%)
- Emerging Trend: Digital Health and AI-driven solutions (16%)
- Innovation Focus: A strong balance between technological advancement, education, and sustainable practices.

This analysis reveals a diverse and forward-thinking approach in dental and healthcare innovation, aligning with India's mission of Aatmanirbhar Bharat.

The high representation of medical devices and digital health solutions underscores the sector's growth potential, while education and sustainability initiatives reflect a comprehensive approach to strengthening India's healthcare ecosystem.

Awards and Recognition

The Innovation Exhibit Awards at GCOHIR 2025 celebrated the spirit of creativity and the pursuit of excellence in oral healthcare innovation.

These prestigious awards recognized the most outstanding contributions across various categories, highlighting innovations that demonstrated exceptional ingenuity, market potential, and transformative impact. By honoring pioneering efforts, the awards inspired participants to continue pushing the boundaries of research and technological advancement, setting new benchmarks for global oral healthcare.

The recognition of innovative excellence served not only as an accolade for the winners but also as a beacon of inspiration for future innovators. By spotlighting groundbreaking ideas and successful implementations, the awards fostered a culture of ambition and continuous improvement. The winners of these esteemed awards exemplified the highest standards of creativity and commitment, paving the way for the next generation of oral healthcare innovations.

Innovation Cave

The Innovation Cave, a "Shark Tank" inspired format, a pitch session which was a second round of the innovation exhibit, provided a platform for the top 5 Innovation Exhibit participants to pitch their ideas to a panel of investors and industry experts. The

Innovation Exhibit Winners list

A) Innovation & Technology Awards

Best Innovation Ready Institute of the Year

- Manav Rachna Dental College

Best Innovative Clinic Model

- Sarvamangal healthcare pvt Ltd

Best Innovative Product/Service Model

- SIBAR Institute of Dental Sciences (SIDS)

Best Digital Innovation

- IDA Cyberabad Telangana

Most Disruptive Technology of the Year

- DJ College of Dental Sciences & Research

Excellence in Artificial Intelligence

- Dr. Vidhi Bhanushali

Best Emerging Technology in Dental Materials

- School of Dental Sciences, Sharda University

B) Healthcare and Education Awards

Best Sustainable Oral Healthcare Initiative Award for Evidence-based Dentistry

- Vishnu Dental College

Best Community Outreach in Oral Healthcare

- Kanti Devi Dental College & Hospital

Best Award for Ergonomic Oral Health Innovation

- Dr. Sourabh Ramesh Joshi

C) Experience and Engagement Awards

Best Patient Experience

- Healyantra Healthcare Innovations Private limited

Best Innovative Stall Design

- Institute of Dental Sciences

D) Entrepreneurial Awards

Best Healthcare Innovation

-The Bone Bank

Best Innovation in Dentistry

- Bharati Vidyapeeth Dental College and Hospital

Best Female Entrepreneur

- Dr Chaitra Santoshkumar Mastud

Best Young Investigator Award/Rising Star in Dental Innovation

- Medical Engineering Design & Innovation Centre, IIT Bombay

best innovations were evaluated based on market impact, scalability, team capability, and problem-solving potential. The outcome of this session was crucial for selecting the most viable ideas to move forward in the pre-incubation process.

5 Participants qualify for innovation cave were:

1. IDA Cyberabad Telangana
2. Dr. Sourabh Ramesh Joshi
3. Healyantra Healthcare Innovations Pvt. Ltd
4. Sarvamangal healthcare pvt Ltd
5. Dr. Chaitra Santosh Kumar Mastud

The Concept Notes of Ideas of 5 participants

1. IDA Cyberabad Telangana

DentalCaseMate is an AI-driven dental practice management solution designed to automate documentation, enhance communication, and improve patient care. Key features include automated case sheet generation, multilingual speech-to-text transcription, secure cloud storage, treatment progress tracking, and AI-powered diagnostic support. By streamlining workflows and providing real-time insights, DentalCaseMate optimizes efficiency, reduces manual record-keeping, and improves patient engagement. Its phased development ensures continuous feature enhancement and wide-scale adoption in dental practices.

Category:

Dental Healthcare Technology & Practice Mgmt

2. Dr Sourabh Ramesh Joshi

Dr. Sourabh Ramesh Joshi's patents focus on innovative dental and medical devices designed to enhance oral healthcare and clinical efficiency.

These include:

Toothbrush with Rotatable Brush Head: A utility toothbrush with a 360° rotatable and interchangeable brush head, designed to improve accessibility to posterior, lingual, and palatal teeth surfaces. It supports the BASS brushing technique and is particularly beneficial for patients with dexterity issues like arthritis.

Device for Tooth Extraction: Pediatric tooth extraction forceps with an integrated periosteal elevator, designed to minimize instrument use and patient anxiety while ensuring safer, atraumatic extractions through force-sensing technology.

System for Three-Dimensional Dental Scanning: A laser-based dental scanning system aimed at capturing detailed intracanal morphology and aiding in precise endodontic treatments.

Titanium Test Tube with Glass Vent: A specialized test tube featuring a transparent window to easily distinguish platelet-rich fibrin, enhancing the efficiency of clinical and laboratory processes.

Category:

These innovations belong to the Oral Healthcare and Dental Technology sector, with a strong focus on Medical Devices and Diagnostic Tools. They address advanced solutions in dental hygiene, surgical instruments, diagnostic imaging, and clinical lab equipment.

3. Healyantra Healthcare Innovations Pvt. Ltd

The Smart Dental Handpiece by Healyantra Healthcare Innovations is a groundbreaking tool designed to enhance precision and safety in dental procedures. Equipped with a high-resolution camera and real-time annotation capabilities, it provides a magnified digital view of the treatment area, reducing accidental damage to adjacent teeth and improving procedural accuracy. Its ergonomic design minimizes the risk of musculoskeletal disorders among dentists, while also enabling real-time supervision, training, and documentation. Seamlessly integrating with existing dental chairs, this innovation significantly improves treatment outcomes and dental practice efficiency.

Category:

Dental Healthcare Technology & Medical Devices

4. Sarvamangal healthcare pvt Ltd

Sarvamangal Healthcare Pvt. Ltd., led by Dr. Mandar Pimprikar, specializes in innovative dental devices and advanced healthcare technologies, with a strong focus on endodontics and medical diagnostics. Their patented solutions address critical challenges in root canal therapy, disinfection, and microbial detection through cutting-edge technologies like single-step irrigating solutions, real-time pathogen screening devices, air-driven root canal activation systems, and pressure-assisted irrigation methods. These innovations enhance treatment efficiency, safety, and diagnostic accuracy, positioning

Sarvamangal Healthcare at the forefront of dental and medical device innovation.

Sector Category: Dental Devices, Medical Diagnostics, and Healthcare Innovation.

5. Dr Chaitra Santoshkumar Mastud

Dr. Chaitra Santoshkumar Mastud's innovation is a preformed, ready-to-use intra-oral fixed device designed to treat pediatric obstructive sleep apnea (OSA) in children aged 9-14 years with Class II malocclusion. OSA, affecting over 24 crore children in India, causes intermittent breathing interruptions during sleep, leading to severe health risks like diabetes, heart issues, cognitive impairment, and poor development. Existing treatments like CPAP, surgery, and customizable devices face scalability, cost, and comfort issues. This device offers a permanent, scalable, and cost-effective solution by addressing airway constriction during the child's critical growth phase. It is easy to install, comfortable, requires no technical skills, and has the potential to provide long-term relief.

Healthcare Category:

- Field: Dental and Pediatric Healthcare
- Sector: Medical Devices / Orthodontics / Pediatric Sleep Medicine

INNOeVERSITY who was looking after Innovation Cave is ready to define and implement the pre-incubation cell process for this Innovation Cave participants. The pre-incubation cell will support start-ups to develop their ideas into market-ready products or services through mentorship, technical expertise, business development strategies, and funding facilitation.

Next Steps and Path Forward

1. Defining the Path Ahead: Outlining the next steps to ensure the sustainability and success of the pre-incubation process.
2. Key Result Areas (KRA): Establishing specific objectives for INNOeVERSITY and IDA teams, including timelines, deliverables, and monitoring mechanisms.
3. Responsibilities: Clarifying the roles and responsibilities of each party in the pre-incubation process, funding, and mentorship.
4. Updated Revenue Sharing Model: Finalizing an updated revenue-sharing model based on performance metrics and the successful execution of the start-up incubation program.

Conclusion

The Innovation Exhibit and Cave segment at GCOHIR 2025 set a new benchmark for global collaboration and technological advancement in oral health innovation. By providing a dynamic platform for knowledge exchange and strategic partnerships, the exhibit contributed significantly to the development of novel healthcare solutions and the promotion of sustainable practices. The conclave reinforced the importance of interdisciplinary collaboration and indigenous innovation in driving progress and improving patient care worldwide.







8. PARTICIPANT CHARACTERISTICS

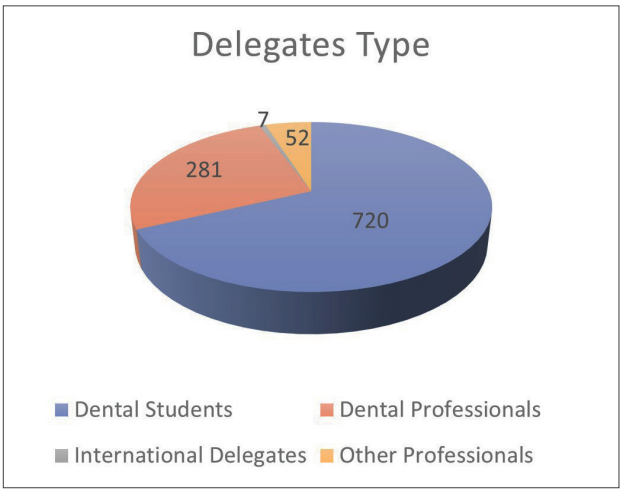
The Global Conclave on Oral Health Innovation and Research (GCOHIR) 2025 witnessed an impressive turnout of 1,060 delegates, including dental students, dental professionals, international participants, and experts from allied fields.

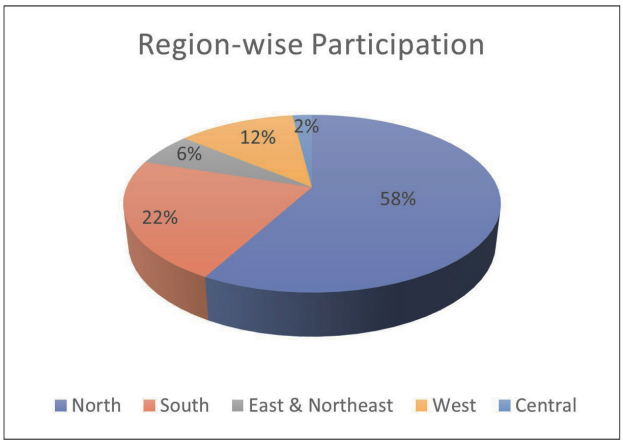
Delegates Type:

- Dental Students: 720
- Dental Professionals: 281
- International Delegates: 7
- Other Professionals: 52

Region-wise Participation:

- North: 58%
- South: 22%
- East & Northeast: 6%
- West: 12%
- Central: 2%





9. AWARDS & RECOGNITIONS

The Global Conclave on Oral Health Innovation & Research (GCOHIR) honored excellence, innovation, and impact in oral healthcare through two prestigious award ceremonies held over the course of the event.

Dr. APJ Abdul Kalam Awards – 15th February 2025

On the first day of the conclave, the Dr. APJ Abdul Kalam Awards recognized distinguished individuals who have made groundbreaking contributions to oral healthcare in the fields of policy, research, technology, clinical mentorship, sustainability, and education.

The awards ceremony was chaired by **Dr. S. G. Damle, with Hon. Shri Rajesh Mishra**, Member of Parliament, Committee on Health and Family Welfare, as the Chief Guest. Their presence underscored the importance of fostering research-driven innovations and strengthening oral health policies to align with national and global healthcare goals.

Dr. APJ Abdul Kalam Awardees

1. **Lifetime Achievement in Oral Health Policy & Advocacy Award** – *Prof. OP Kharbanda*
2. **Distinguished Scientist in Oral Health Research Award** – *Dr. Dominic Augustine*
3. **Innovator in Oral Health Technology Award** – *Dr. Suresh Sajjan M.C.*
4. **Excellence in Clinical Research Training & Mentorship Award** – *Prof. Denny John*
5. **Lifetime Advocate for Sustainability Award** – *Dr. Neeta Mohanty*
6. **Excellence in Community Oral Health Research Award** – *Dr. Parvesh Mehra*

7. **Heritage Award for Traditional Medicine in Oral Health** – *Dr. Nirupam K. Doctor*
8. **Pioneer in Oral Health Education, Outreach, & Awareness Award** – *Dr. Yogesh T. Chandrana*
9. **Pioneer in Oral Health Education, Outreach, & Awareness Award** – *Dr. Manesh Lahori*
10. **Lifetime Excellence in Innovation Award** – *Prof. Dr. Himanshu Aeran*
11. **Academic Excellence in Oral Health Advancement** – *Dr. Puneet Batra*
12. **Leader in Translational Research Award** – *Dr. Harpreet Singh*

Conclave Awards – 16th February 2025

On the second day of the conclave, the Conclave Awards celebrated exceptional contributions in clinical practice, research, innovation, and leadership within the field of oral health. These awards honored individuals and organizations that have significantly advanced the profession through scientific discoveries, pioneering treatments, and transformative community outreach programs. The recipients of the Conclave Awards demonstrated unparalleled dedication to enhancing oral healthcare and driving meaningful change in dentistry. The ceremony concluded with the resonant notes of the Indian National Anthem, signifying unity, progress, and a shared commitment to revolutionizing oral healthcare. With an atmosphere of inspiration and purpose, the inauguration set the stage for the impactful discussions, groundbreaking research presentations, and collaborative engagements that unfolded throughout the conclave.

10. WAY FORWARD

The Global Conclave on Oral Health Innovation & Research (GCOHIR) has laid a robust foundation for the advancement of oral healthcare through scientific inquiry, interdisciplinary collaboration, and translational research. As we move forward, the key outcomes of the conclave will serve as a catalyst for sustained innovation, evidence-based policy development, and global partnerships aimed at transforming oral health research and clinical practice.

1. Strengthening Networks & Multidisciplinary Collaborations

The conclave facilitated the establishment of strategic alliances among researchers, industry leaders, policymakers, and healthcare professionals,



fostering a multi-sectoral approach to addressing oral health challenges. Going forward, these connections will be leveraged to drive collaborative research, enhance clinical applications, and accelerate the adoption of emerging technologies in oral healthcare.

2. Advancing Scientific Contributions through Abstracts

A diverse array of scientific abstracts spanning clinical research, technological innovations, and epidemiological studies were presented, recognized, and awarded. This initiative not only provided a platform for showcasing cutting-edge research but also reinforced the importance of scientific rigor and academic excellence. In an effort to enhance their visibility, winning abstracts will be published in the Journal of the Indian Dental Association (JIDA), thereby facilitating knowledge dissemination within the global scientific community.

3. Translating Panel Discussions into Actionable Outcomes

The panel discussions provided a structured forum for in-depth deliberations on critical areas of oral health innovation and policy development. These discussions identified key thematic areas that

warrant further investigation and intervention. Moving forward, each panel discussion will contribute to the development of specialized publications or scientific reports, ensuring that the knowledge generated is systematically documented and translated into actionable strategies.

4. Strengthening Knowledge and Skill Development through Keynote & Symposia Series

The keynote lectures and symposia sessions fostered an environment of intellectual exchange, skill enhancement, and cross-disciplinary dialogue. These sessions served as a conduit for integrating novel research findings into clinical practice, promoting emerging treatment modalities, and shaping evidence-based guidelines for oral healthcare. The knowledge disseminated during these sessions will continue to inform future research, policy initiatives, and advancements in patient care.

5. Institutionalizing the APJ Abdul Kalam Awards for Excellence in Oral Health Research and Innovation

The introduction of the APJ Abdul Kalam Awards at GCOHIR marked a significant milestone in recognizing excellence in scientific innovation, policy advocacy, and clinical research. By honoring pioneers and visionaries in the field of dentistry, this initiative has set a precedent for acknowledging transformative contributions to oral healthcare. Moving forward, these awards will serve as an impetus for senior leaders and emerging innovators to actively engage in groundbreaking research, technological advancements, and policy reforms.

6. Establishing a Global Consortium for Collaborative Research

The conclave provided a platform for global participants to establish consensus on the need for a structured, tripartite partnership involving:

- Global institutions/organisations
- The Indian Dental Association (IDA)
- Indian universities and healthcare organizations

This global consortium aims to facilitate cross-border collaborations, enhance research synergies, and drive large-scale multi-institutional studies focusing on priority areas in oral health research.

7. Sustaining Innovation through the Innovation Nexus

The Innovation Nexus emerged as a pivotal platform for showcasing patents, prototypes, medical devices, and novel pharmacotherapeutic approaches. This initiative underscored the importance of sustained support for translational research and commercialization of innovative healthcare solutions. To ensure long-term impact, the next steps involve:

- Facilitating access to incubation ecosystems for early-stage innovations
- Enrolling promising researchers in IDA's mentorship programs
- Connecting innovators with seed funding agencies and venture capital networks

These efforts will drive the real-world application and scalability of disruptive innovations in oral healthcare.

Scientific Dissemination & Future Publications

The insights, deliberations, and research outcomes from GCOHIR will be consolidated into a comprehensive Outcome Report, serving as a reference for stakeholders across academia, industry, and policymaking. A condensed version of the report will be published on the IDA website and social media platforms for broader accessibility. Additionally, all participants and delegates will receive copies to reinforce engagement with the conclave's key findings. Furthermore, we aim to develop a scientific publication encompassing the entire research output, ensuring that the knowledge generated at the conclave contributes meaningfully to global scientific literature and oral health advancements.

11. CONCLUSION

The Global Conclave on Oral Health Innovation & Research has not only set new benchmarks in scientific discourse and innovation but has also created a structured pathway for future advancements in oral healthcare. The momentum gained from this landmark event will be sustained through ongoing research, policy advocacy, and global partnerships, ensuring that oral health remains a priority within broader healthcare frameworks.

This is not the culmination but the beginning of a transformative journey—one that will continue to inspire scientific breakthroughs, inform healthcare policies, and shape the future of dentistry and oral health research on a global scale.

IDA's HEALTH INITIATIVES

TCC TOBACCO CONTROL & CESSATION CENTRE

tii.org.in

SPOT centre
Spot & Prevent Oral cancer Trauma

ocf.org.in

Child Dental Centre

childdentalcentre.org.in

24x7 Relief from your dental pain
Emergency Dental Centre

ida-edc.org.in

National Oral Cancer Registry

nocr.org.in

HEALING SMILE FOUNDATION®

healingsmilefoundation.org.in

SPORTS DENTAL CENTRE™

sportsdentalcentre.org.in

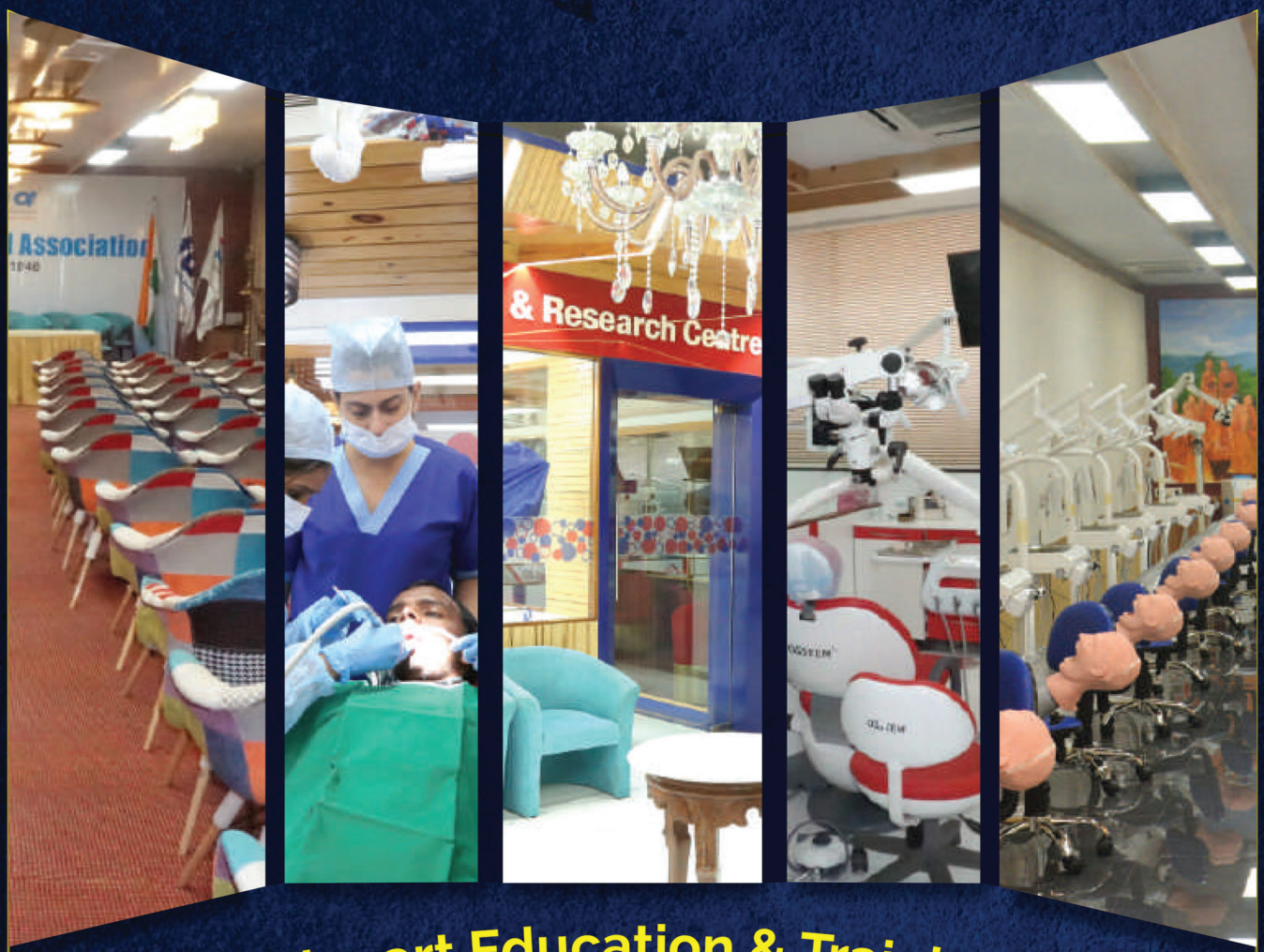
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