Editorial for Special Issue “Exclusive Papers of the Editorial Board Members of Oral”

Giuseppina Campisi

Department of Rehabilitation, Fragility and Continuity of Care, Unit of Oral Medicine, University Hospital Palermo, 90127 Palermo, Italy; campisi@policlinico.pa.it

1. Introduction

In 2022, the World Health Organization (WHO) released a landmark report on oral health, emphasizing the staggering global prevalence of oral disorders, which affect approximately 3.5 billion individuals [1]. These conditions are among the most widespread noncommunicable diseases, significantly burdening low- and middle-income nations. The report underscores that oral health is vital not only for fundamental functions such as breathing, speaking, and eating but also for people’s overall health, well-being, and social confidence.

Despite its critical importance, oral health is constantly threatened by a range of diseases and conditions, compounded by significant disparities in the cost and accessibility of care. Marginalized and disadvantaged populations are particularly vulnerable to these issues. The WHO report highlights that many oral illnesses can be effectively treated and prevented with affordable measures. Strategies that address common risk factors among noncommunicable diseases are especially promising, particularly in resource-constrained settings.

To address these challenges, it is essential to have a well-trained and adequately staffed dental workforce and to integrate oral health services into universal health coverage plans, ensuring that these services are both accessible and affordable.

Specialized journals such as Oral from MDPI play a crucial role in advancing this mission by promoting and disseminating research across a broad spectrum of oral health topics. This Special Issue exemplifies the Editorial Board’s dedication to exploring a diverse range of critical areas, each contributing valuable insights into the field.

The studies in this Issue cover a wide array of topics, reflecting the heterogeneity and complexity of oral health. They include comparative histopathological analyses that deepen our understanding of disease mechanisms, reviews of rare benign tumors that inform diagnostic and therapeutic strategies, and investigations into medication-related osteonecrosis that highlight the intersection between oral health and systemic disease. Additionally, the Issue addresses primary failure of eruption, the interplay between periodontal disease and systemic conditions, the impact of post-acute COVID-19 syndrome on oral function, and oral complications arising from cancer therapies. Furthermore, it explores the transformative potential of digital health technologies in oral care, the innovative use of photodynamic therapy in treating oral cancers, and novel approaches to orthodontic challenges.

The breadth of these topics underscores the necessity of comprehensive research to address the multifaceted nature of oral health. By delving into these diverse areas, the studies contribute to a deeper understanding of oral health, inform clinical practice, and ultimately aim to improve patient outcomes. The commitment to such a wide-ranging exploration of oral health issues is both timely and essential for advancing the field and addressing the significant global burden of oral diseases.
With this vision in mind, some of the Editorial Board members of *Oral* have made scientific contributions to this Special Issue. Here, we present an overview of these published articles, showcasing this diverse and impactful research aimed at advancing the field of oral health. Their dedication to and passion for addressing these critical topics are evident, and their contributions significantly enhance our understanding and approach to improving oral health worldwide.

2. Overview of Studies

The study by Favia et al. (contribution 1) explores the efficacy of carrying out a comparative histopathological analysis between syndromic and non-syndromic odontogenic keratocysts (OKs), employing both conventional and Confocal Laser Scanning Microscopy (CLSM). Their investigation reveals some of the distinctive features of syndromic OKs, including increased satellite cysts, a basophilic layer in the basement membrane, and heightened cellular activity, as detected by CLSM. These findings suggest a potential correlation between histopathological characteristics and the biological behavior of OKs, particularly in terms of recurrence rates. The authors conclude that CLSM represents a valuable technology for distinguishing between syndromic and non-syndromic OKs, aiding the precise prediction of their biological behavior. This could facilitate tailored clinical and radiological follow-ups for patients. Notably, the study underscores the importance of novel histopathological findings, particularly those identified through CLSM, in advancing our understanding and the early diagnosis of conditions like Neviod Basal Cell Carcinoma Syndrome (NBCCS), where OKs may serve as an initial manifestation.

The study’s strengths lie in its comprehensive approach, combining conventional histopathology with advanced imaging techniques, and its focus on clinically relevant outcomes, such as recurrence rates. However, the authors acknowledge various limitations, such as the absence of discrimination between orthokeratinized and parakeratinized keratocysts and the lack of correlation with immunohistochemical analyses. Despite these limitations, the study advocates for the potential integration of CLSM as a supplementary tool in oral pathology, offering insights into the molecular and morphological distinctions between syndromic and sporadic OKs.

Antonelli et al. (contribution 2) conducted a comprehensive review of intraoral sialadenoma papilliferum (SP), a rare benign epithelial tumor originating from the salivary gland. Published in *Oral* in 2022, the study aims to elucidate the clinical and histopathological diagnostic features of this condition. SP was first described in 1969 and poses diagnostic challenges due to its rarity. The review analyzed 64 reported cases, highlighting the fact that SP predominantly affects males with a mean age of 57.2 years. The most common site is the palate, often presenting as a slow-growing, asymptomatic papillary lesion. Histologically, SP exhibits characteristic features such as papillary projections lined by two or three layers of cells. Treatment typically involves conservative excision. Despite concerns about malignant transformation, SP is generally considered to be a benign neoplasm with low recurrence rates. However, a few cases with uncertain malignant features have been reported, warranting further research to clarify their biological behavior and histogenesis. The authors conclude that SP, though rare, should be considered in the differential diagnosis of intraoral swellings, particularly those located on the palate, and advocate for more studies to understand its biology better.

The retrospective cohort study conducted by Maucci et al. (contribution 3) investigates the onset of Medication-Related Osteonecrosis of the Jaw (MRONJ) in breast cancer (BC) patients following a switch from low doses (LD) to high doses (HD) of bone-modifying agents (BMAs) due to the development of bone metastases. The study outlines the prevalence of MRONJ, primarily associated with BMAs, in the context of breast cancer therapy, which often leads to cancer treatment-induced bone loss (CTIBL) necessitating LD-BMAs treatment. The objectives include describing the characteristics of BC patients undergoing treatment with LD-BMAs for CTIBL prevention, documenting any transitions to HD-BMAs, assessing the occurrence of MRONJ, and identifying potential associated
risk factors. Fourteen female BC patients with a mean age of 66.6 years receiving LD-BMAs for CTIBL prevention were included in the study. Among them, four patients were switched to HD-BMAs due to bone metastases. Intriguingly, MRONJ developed in two of these patients: one in the mandible after being on risedronate followed by denosumab (HD) and the other in the maxilla after denosumab (LD) followed by zoledronate treatment. The authors conclude that BC patients undergoing treatment with LD-BMAs for CTIBL may face a MRONJ risk similar to osteo-metabolic patients. Therefore, meticulous monitoring of oral health is recommended for these individuals, especially considering the potential transition from LD to HD BMA therapies for bone metastasis, which can increase the risk of MRONJ.

This research sheds light on the importance of vigilant oral health surveillance and risk assessment in BC patients undergoing BMA therapy, particularly in the context of treatment adjustments for bone metastases, to mitigate the potential occurrence of MRONJ.

In their narrative review, Testarelli et al. (contribution 4) explore the clinical, genetic, and therapeutic aspects of primary failure of eruption (PFE), a condition characterized by incomplete tooth eruption despite a clear pathway. The authors conducted a comprehensive literature search, summarizing findings from 12 relevant articles published between 2008 and June 2022. The authors highlight the predominance of genotypical discussions (ten out of twelve articles) concerning PFE, emphasizing the role of PTH1R mutations in disrupting the balance between bone resorption and apposition during tooth eruption. Phenotypical aspects and epidemiological data were also discussed, but treatment options received less attention, with only three out of the twelve articles addressing this aspect.

The review investigates epidemiological variations in PFE prevalence and gender distribution, emphasizing the need for further research to clarify these disparities. It identifies distinct PFE types based on eruption potential and distribution patterns. Additionally, the review underscores the familial inheritance of PFE, particularly mutations in the PTH1R gene, affecting calcium metabolism and bone resorption. Testarelli et al. advocate for a differential diagnosis between PFE and other conditions to inform appropriate treatment strategies. They emphasize the importance of PTH1R screening before orthodontic interventions to mitigate the risk of ankylosis and iatrogenic damage. However, the review acknowledges that there is a dearth of information on treatment modalities, stressing the necessity for future studies to guide effective therapeutic approaches tailored to individual patients.

The fifth text published in this Special Issue is a systematic review by Meneu et al. (contribution 5) on the potential aggravating effect of periodontitis on psoriasis. Psoriasis, a chronic inflammatory disease, has been associated with periodontal pathologies, particularly periodontitis. The aim of the study was to determine if periodontitis could exacerbate psoriasis. Following the PRISMA guidelines, the authors conducted a comprehensive systematic review, employing a PECO (Participants, Exposure, Control, and Outcomes) question model. They searched various databases and identified 111 studies, of which 11 met the inclusion criteria. These comprised nine case-control studies, one cross-sectional study, and one cohort study. Most studies reported an increase in bleeding on probing and the presence of periodontal pockets in patients with psoriasis, suggesting that local periodontal inflammation could aggravate psoriasis. The included studies evaluated various periodontal parameters such as probing depth (PD), clinical attachment loss (CAL), and the community periodontal index of treatment need (CPTIN). While some studies found differences in these parameters between psoriasis patients and controls, the results were not consistent across all studies. The prevalence and the incidence rates of periodontitis were higher among psoriasis patients compared to controls in several studies, indicating a potential association between psoriasis and periodontal disease. The systematic review concludes that periodontitis could aggravate the clinical manifestations of psoriasis. The bidirectional association between the two conditions is attributed to shared immunological, microbiological, and environmental factors. The findings highlight the
importance of dental examination and treatment in patients with psoriasis to improve systemic inflammatory processes and potentially mitigate the progression of psoriasis.

Pugliese et al. (contribution 6) aimed to investigate masticatory function levels in post-acute-COVID-syndrome (PACS) patients with and without sarcopenia. The study included twenty-three PACS patients, among whom thirteen suffered from sarcopenia, five complained of asthenia without sarcopenia, and five had neither muscle symptoms nor asthenia. Masticatory strength and effectiveness were assessed using a gnathodynamometer and a chewing gum mixing ability test, respectively. Additionally, hand grip and gait speed tests were conducted. The findings revealed that PACS sarcopenic patients exhibited decreased masticatory effectiveness and strength compared to asthenic non-sarcopenic patients and non-asthenic non-sarcopenic patients. The study also explored medical history, anatomo-functional analysis, intra-oral examination, and bite force measurement. Notably, the research suggested a correlation between oral health, particularly the number of teeth and the DMFT index, and masticatory performance in PACS patients. Despite the limitations, including the lack of pre-COVID-19 chewing performance data and the small sample size, the study underscores the importance of addressing oral health issues in PACS patients through a multidisciplinary rehabilitation approach. Further research with larger cohorts is recommended to validate these findings and assess the clinical utility of the gnathodynamometer as a bite force measurement tool.

Authored by Nicolatou-Galitis et al. (contribution 7), the seventh study in this Special Issue investigates the oral complications experienced by 24 patients with cancer who underwent immunotherapy between 2017 and 2022. The average age of the patients was 64 years, with lung cancer being the most prevalent form of cancer within the cohort. During immunotherapy, the patients presented with various symptoms, including oral pain, xerostomia, burning sensations, and gingival bleeding. Notably, immune-related lesions affected 62.5% of the patients, with three cases exacerbating pre-existing autoimmune diseases. Moreover, six cases of oral infections and six cases of medication-related osteonecrosis of the jaw were identified, highlighting the multifaceted nature of oral complications in immunotherapy. Of significance is the observation that patients previously or concurrently treated with other anticancer therapies appeared to be at a higher risk of experiencing oral issues. The findings of Nicolatou-Galitis et al. underscore the importance of vigilant monitoring and management of oral health during immunotherapy, emphasizing the need for multidisciplinary collaboration among oncologists, dentists, and other healthcare professionals. Understanding the potential oral complications associated with immunotherapy is essential for optimizing patient care and outcomes in the rapidly evolving landscape of cancer treatment.

The article authored by Di Fede et al. (contribution 8) inquiries into the increasingly critical role of digital health technologies, such as teledentistry, in modern healthcare, particularly accentuated by the SARS-CoV-2 pandemic. These technologies offer significant advantages in terms of reducing healthcare provider workload and enhancing patient outcomes, especially in scenarios requiring remote monitoring, diagnosis, and communication. However, alongside these benefits, concerns regarding clinical risks, data security, and privacy protection have emerged. The paper conducts a scoping review, following the PRISMA-ScR guidelines and Arksey and O’Malley’s five-step framework, to explore the regulatory landscape surrounding the utilization of digital health apps and software in healthcare. Examining 24 selected articles, the review highlights a predominant focus on data security policies within the healthcare industry, underscoring the necessity for robust regulations and app control systems to safeguard patient data effectively. Moreover, the review identifies a pressing need for enhanced research efforts and policy initiatives to bolster data security practices and address privacy and safety challenges associated with health-related apps. Notably, inconsistencies in standards regarding professional obligation and informed consent in online medical consultations are noted, posing risks concerning data privacy, medical liabilities, and ethical considerations. Despite the transformative potential of digital health in revolutionizing
medical service delivery, the article underscores existing challenges, including the absence of standardized protocols for handling sensitive patient data and the lack of uniform legislative provisions. These deficiencies raise significant concerns regarding confidentiality and security in digital healthcare ecosystems. The authors emphasize the critical importance of regulatory compliance to elucidate and harmonize regulations, providing clear guidelines for healthcare practitioners and the broader health system. Ultimately, the article advocates for urgent regulatory measures aimed at regulating patient data, clarifying provisions, and promoting informed patient participation to maximize the efficacy and successful implementation of telemedicine practices.

In their comprehensive study, Düzgüneş et al. (contribution 9) examine the effectiveness of photodynamic therapy (PDT) in treating oral cancer, with a particular emphasis on novel liposomal photosensitizers. They highlight the advantages of PDT, which utilizes a combination of a photosensitizer drug, specific light wavelengths, and oxygen to selectively destroy cancerous tissues. The study reviews several photosensitizers, including Methylene Blue, 5-aminolevulinic acid (the precursor to protoporphyrin IX), porphyrin, Foscan, Chlorin e6, and HPPH, all of which have demonstrated success in treating oral verrucous hyperplasia, oral leukoplakia, oral lichen planus, and head and neck squamous cell carcinoma. The authors emphasize the potential of “theranostic” liposomes, which combine diagnostic and therapeutic functions by delivering both a contrast agent for magnetic resonance imaging (MRI) and a photosensitizer for image-guided PDT of head and neck cancer. These liposomes can be targeted to cancer cells by incorporating photosensitizers that specifically bind to cell surface markers overexpressed on these cells. A significant advancement discussed in the study is the development of novel porphyrinoids in the authors’ laboratories. When encapsulated in cationic liposomes, these compounds exhibit up to 50 times lower IC50 values compared to their free counterparts, indicating a markedly increased potency. The study concludes that the targeted delivery of photosensitizers using liposomal encapsulation significantly enhances the effectiveness of PDT for oral cancers. The innovative approach of using theranostic liposomes and novel porphyrinoids shows promise for improving the precision and efficacy of cancer treatment. The authors foresee those further advancements, such as targeting cancer stem cells and utilizing upconversion nanoparticles for near-infrared irradiation, will overcome current limitations like tumor hypoxia, thereby enhancing the overall therapeutic outcomes of PDT for tumors accessible to light sources. This research highlights the potential of integrating advanced drug delivery systems with photodynamic therapy to achieve more effective and targeted treatment modalities for oral and head and neck cancers.

The opinion article by Matti et al. (contribution 10) provides insights into the efficacy of treating skeletal Class II malocclusion. They highlight the efficiency of the Herbst appliance while emphasizing the need to control undesired dental movements that may affect orthopedic outcomes. The introduction of skeletal anchorage, through the use of miniscrews and elastic ligatures, allows for better control over unwanted dental movements, thus enhancing the treatment’s effectiveness. Moreover, skeletal anchorage offers the opportunity to selectively correct various components of Class II malocclusion, paving the way for a new diagnostic approach that prioritizes facial aesthetics over occlusal relations. This approach relies on the aesthetic evaluation of the patient, with particular attention to the nasolabial angle, lips, and sagittal position of the maxilla and mandible. The treatment of skeletal Class II malocclusion requires a specific focus on patient aesthetics. The combination of the Herbst appliance, elastic ligatures, and skeletal anchorage represents an effective therapeutic option. However, further well-designed randomized clinical trials are needed to confirm the long-term results of this treatment approach.

3. Conclusions

In conclusion, this Special Issue of Oral highlights the remarkable breadth and depth of contemporary research into oral health. The contributions from our esteemed Editorial
Board Members underscore the critical importance of addressing diverse and complex challenges within the field.

A Special Issue in a scientific journal often benefits from a unifying theme or guiding principle. While selecting a specific theme may attract experts in that field, opting for a guiding principle can intrigue a broader readership. In this regard, our approach has been to emphasize topics related to oral soft and hard tissue diseases, anchored in a forward-looking perspective that integrates advanced diagnostics and the promotion of preventive and therapeutic principles. We aimed to address issues relevant to diverse segments of the population while also providing exemplars for the broader scientific community. This over-arching principle underscores our commitment to advancing oral health research and practice in the contemporary era.

The articles featured in this Special Issue offer profound implications for both clinical practice and research in the field of oral health. The comparative histopathological analysis conducted by Favia et al. not only distinguishes features between syndromic and non-syndromic OKs but also provides valuable insights into their biological behavior and recurrence rates. This suggests the potential of CLSM as a diagnostic tool, enabling more precise predictions and tailored follow-up strategies for patients, thereby enhancing clinical management. Similarly, Antonelli et al.’s comprehensive review of intraoral SP elucidates the clinical and histopathological features of this rare benign tumor, guiding clinicians in appropriate diagnostic and management approaches.

Mauceri et al.’s retrospective cohort study highlights the importance of vigilant monitoring of breast cancer patients undergoing BMA therapy to mitigate the risk of MRONJ. This underscores the necessity for meticulous oral health surveillance and risk assessment, especially in the context of treatment adjustments for bone metastases, thus informing clinical decision making and patient management strategies.

The narrative review by Testarelli et al. emphasizes the significance of differential diagnosis and PTH1R screening in guiding treatment strategies for PFE, thereby enhancing clinical management approaches. Furthermore, the systematic review by Meneu et al. underscores the bidirectional association between periodontitis and psoriasis, highlighting the importance of dental examination and treatment in patients with psoriasis to mitigate systemic inflammatory processes and improve patient outcomes.

Additionally, Pugliese et al.’s study emphasizes the correlation between oral health and masticatory performance in PACS patients, advocating for multidisciplinary rehabilitation approaches to address oral health issues in this population, thus informing rehabilitative strategies for PACS patients.

Nicolatou-Galitis et al.’s investigation into oral complications in cancer patients undergoing immunotherapy emphasizes the need for vigilant monitoring and multidisciplinary collaboration to optimize patient care and outcomes. Furthermore, the study by Di Fede et al. highlights the increasingly critical role of digital health technologies, such as teledentistry, in modern healthcare, which has been accentuated by the SARS-CoV-2 pandemic in particular. These technologies offer significant advantages in terms of reducing healthcare provider workload and enhancing patient outcomes, especially in scenarios requiring remote monitoring, diagnosis, and communication. However, alongside these benefits, concerns regarding clinical risks, data security, and privacy protection have emerged.

Finally, Düzgüneş et al.’s study on the use of PDT in treating oral cancer underscores the potential of novel liposomal photosensitizers in enhancing the effectiveness of PDT for oral cancers. These findings collectively underscore the necessity of comprehensive research to inform clinical practice, optimize patient care, and ultimately improve oral health outcomes worldwide.

All of these studies collectively emphasize the urgent need for continued investment in oral health research, particularly in the context of global health disparities. As evidenced by the topics covered, oral health is inextricably linked to overall well-being, and advancements in this area can have profound implications for public health. By focusing
on a wide array of issues—from the impact of systemic diseases on oral health to innovative treatments and the integration of digital health technologies—the research in this Issue provides a comprehensive overview of the current state and future directions of oral health.

The dedication and passion of our contributors are palpable, reflecting a shared commitment to improving patient outcomes and advancing the field. Their work not only enhances our scientific understanding but also paves the way for improved clinical practices and policies that can better address the global burden of oral diseases.

As we move forward, it is essential to foster collaboration among researchers, clinicians, and policymakers to translate these scientific insights into tangible health benefits. The findings and discussions presented in this Issue of Oral are a testament to the power of scientific inquiry and its potential to drive meaningful change in the field of oral health.

We hope that this Special Issue will inspire further research, encourage multidisciplinary collaboration, and ultimately contribute to a future where oral health is universally recognized and prioritized as a fundamental component of overall health and well-being.

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List of Contributions
Reference

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