

Prospect of Oral Medicine and the Pedagogical Deficiencies

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ABSTRACT

Oral medicine is principally considered as medical specialty but ended up in dentistry and now suffers an “Identity crisis,” bestriding both dentistry and medicine. We discuss the toil faced by the subject and the specialists in India and Internationally in the curriculum, at awareness level and the perseverance to change the consequence. Automated searches of Medline, Pubmed and the Cochrane Library were conducted for data collection; additional searches of main oral medicine journals were done manually using the keywords Growth and future of Oral medicine, Trends in oral disease, awareness of Common Oral Diseases, career preferences in dentistry, referral pattern to an oral medicine unit and survey of oral medicine practice. Several recent reviews have discussed the nature and extent of training the Oral Medicine specialists currently receive and the need for further enhancement of dental curriculum. Despite these apprehensions, we are quite passionate about the

future. This enthusiasm is balanced by the realization that some impairments lie in our path. These collective signals are a clear wake-up call for our discipline.

Key words: Curriculum, Dentistry, Oral disease, Oral Medicine.

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DOI: 10.5530/jyp.2019.11.50

INTRODUCTION

The diagnosis of disease has always been the cornerstone of dental practice precisely that is where oral medicine and radiology emerge into picture. International descriptions reflect that Oral Medicine is a specialty at the juncture of Medicine and Dentistry,¹ as Oral medicine specialists may provide interdisciplinary patient care along with medical specialists in hospitals and outpatient medical clinics; they also team up with other dentists in dental colleges/hospitals and in private practices to monitor the oral health care and to provide dental therapeutic procedures for patients with complex medical conditions. This definition has been approved by the National Uniform Claim Committee (NUCC), a US organization chaired and hosted by the American Medical Association.² Currently the specialists apply latest imaging modalities to decrease radiation exposure to the patients and to improve diagnostic services.

Oral medicine is principally considered as medical specialty but ended up in dentistry and now suffers an “identity crisis,” bestriding both dentistry and medicine. History reveals that the oral cavity became the domain of dentistry because of the manner in which teeth were looked upon in the ancient times.

Though it's challenging to provide the current scenario of development of oral medicine, we endeavor to summarize the significant points in the local and global development of clinical and research areas that fall within the remit of oral medicine.

MATERIALS AND METHODS

Data sources: automated searches of Medline, Pubmed and the Cochrane Library were conducted; additional searches of main oral medicine journals were done manually using the keywords Growth and future of Oral medicine, Trends in oral disease, awareness of Common Oral Diseases, career preferences in dentistry, referral pattern to an oral medicine unit and survey of oral medicine practice.

DISCUSSION

History

Right from the time of Hippocrates, Galen, Vesalius and even Fauchard, teeth were not considered interesting to those practicing medicine.³ Ancient day's barbers, blacksmiths solved a toothache by extraction, which then emerged as a mechanical/surgical branch of health care, distinct from the rest of the body. Thus, both dental care and dental education, evolved separately from medicine. First independent dental school, in Baltimore, was established in 1840. According to Field,⁴ the independent dental school was the consequence to an unsuccessful attempt to create a dental department within a medical school. 33 countries recognize oral medicine as a specialty^{2,5} and 22 countries have a postgraduate program in oral medicine.⁶ Unfortunately, all countries have cast-off the medical training required for oral medicine.⁷

One of the early pioneers in the field was, Dr. McCarthy who first introduced oral medicine lectures at a dental school (Tufts), in 1925.⁸ Dr. Sidney Sorrin formed the first large oral medicine society in the world, termed the Academy of Dental Medicine, which is now called the American Academy of Oral Medicine (AAOM).

Dentistry is a young profession, less than 180 years old. There are several historical stages in dentistry:⁹

- The longest period was primarily an *extraction-based*, a period that stretches from olden times to the present day.
- Second stage was *restoration* and *replacement* of missing ones, introduced in 1728. Third stage was a *preventive* stage
- Lastly a *diagnostic* stage was inaugurated in 1960 when Irwin Mandel identified blood-based proteins in saliva and predicted the use of saliva and other oral fluids for oral diagnostic work.

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- According to Schloss, Verjee, Spielman a new stage will soon be added as: *regenerative* oral medicine, a field that will require more medical and molecular knowledge.

Indian history lays back to 1971, when the Oral Medicine and Radiology as a specialty was introduced into the dental curriculum for the first time at the Government Dental College, Bangalore. About 150 dental colleges have a sanctioned strength of more than 500 students per year to study this subject as a post-graduate specialty.¹⁰

Curriculum

As a specialty, it is accommodated in dentistry and its specialists are graduates of dental schools. Adding the subject to an already packed and crowded dental education curriculum is an extremely difficult issue.¹¹ An analysis of oral medicine training (not taught in Medical Schools) amounts to about 1,000 h or about 20% of the average dental curriculum in the US,¹² which is comparatively less in regard to the specialty. Emerging areas of oral regenerative medicine, 3D printing of oral tissues, stem cell-based tissue regeneration, oral diagnostics, or immunotherapy, to name a few are the topics of dialogue in the present day, which will certainly be a part of the dentistry in near future. Hence these emerging fields require far more medical knowledge than what dental curriculum can accommodate in its current configuration.

With the knowledge comes the awareness, hence the population being more concerned about the oral health, resulted in declining rate of tooth decay, filling and treated (DMFT) rates over 40 years (1970-2010) in the developed world, so the current status of the dentistry is mostly a less invasive and preventive type, because the population demands for it. These trends are likely to continue, at least in the affluent population of the rich world.¹³

The shift from a disease management (traditional dentistry) to a prevention-driven profession eventually could lead to a split in the education and practice of dentistry into either a surgical, intervention-driven aspect versus a non-surgical, medical, diagnostic and preventive aspect. The interventional, traditional form of dentistry that has prospered for the past 200 + years, handled by graduates of traditional dental schools will gradually shrink, both in number of schools and graduates, as demand decreases. *The transition will be neither sudden nor orderly, but it will be noticeable in the next decades.*

Several recent reviews have discussed the nature and extent of training the Oral Medicine specialists currently receive and the need for further enhancement of dental curriculum.⁶

A team of oral medicine, pathologist and oral surgeons can detect, diagnose and treat oral diseases. In the future, when surgery of oral cancer may be replaced by immunotherapy and diagnosis will be based on digital algorithms (lab-on-a-chip) stored in smart phones,¹⁴ detection, diagnosis and treatment may occur in the same place. For such a transition, one would have to be in an inter-professional and person-centered care environment.¹⁵ Furthermore, a person-centered care, that is predicted to become the standard care in the next decade, would more naturally land itself a referral from primary care physicians providing oral preventive work to a medical specialist like oral medicine, a postgraduate medical specialty.

Worldwide there are innumerable dental societies, but relatively few focus solely on oral medicine. Several oral medicine societies are affiliated with other dental specialties, such as oral pathology, oral surgery, special care dentistry, periodontology, or others. In India the curriculum of oral radiology is concomitant with oral medicine whereas in the foreign scenario, these two branches are functioning individually. A survey that was designed and conducted by an international panel of oral medicine experts to weigh the current state of oral medicine and radiology practice internationally revealed India has the largest expansion of oral medicine

and radiology services as compared with other countries.¹⁶ This could be due to the role of the oral medicine practitioner serving as an initial point of health screening for patients attending their many dental schools and hospitals throughout the country. Currently, the Indian Academy of Oral Medicine and Radiology (IAOMR) reports having more than 1100 members, which includes qualified full-time oral medicine consultants who work in academic institutions and post graduate trainees.

In India situation seems to have reached a self-sufficient stage. Hence, it is now time to look for efficiency and growth in this specialty by looking up to widening the scope and ensuring the application of the subject, thus establishing the authority of the oral medicine and radiology specialist in the field of medical sciences. Undergraduates and postgraduates are posted only for few months in medical hospital, which is very limited when compared to our range of the patients and types of diseased conditions.¹⁷

In spite of the rapid progress in the field of dental imaging, the lack of support and understanding of the benefits of advanced imaging procedures and firm curriculum based clinical practice; have neglected the bright side of the specialty.¹⁸

Awareness and motivation level

One study revealed that Oral medicine and radiology being one of the least favorite branches for post-graduation. Only 11.7 percent reported wanting to pursue dentistry for research purposes. Overall, this study found that financial and professional factors were the chief criteria for students' pursuing dentistry in India.¹⁹

Another study revealed, Restorative and Aesthetic Dentistry was the most preferred specialty ($n = 98$; 17.7%) followed by Endodontics ($n = 78$; 14.1%); Prosthodontics ($n = 65$; 11.7%) and Orthodontics ($n = 63$; 11.4%). Study concluded the need to promote mentoring activities and provide guidance and encouragement to pre-doctoral dental students in selecting the most appropriate specialty within their capability domain.²⁰

T. Sarumathi *et al.* stated moderate awareness about the signs and symptoms of the common oral diseases. There appeared to be a low awareness about the treatment of limited mouth opening and the causes of white patches. 85.9% of the doctors involved in the study group said that they routinely examined the oral cavity; 4.2% said that they sometimes did so. 4.2% of the sample said that they did not perform a routine oral examination, whilst another 4.2% said that they examined the throat only. And the referral was very low.²¹

According to B. S. Ahire *et al.* awareness of patients (coming to hospital) about oral precancerous lesions/conditions was found to be very low. The people must be made aware of symptoms, signs and preventive strategies of oral precancerous lesions/conditions through their preferred media – television and lectures. Almost all the subjects (97.5%) wanted more information about oral precancerous lesions/conditions but through television (42.5%) and lectures (27.5%).²²

A retrospective analysis of the clinical records suggested a majority referral came from general dental practitioners. The most common reason for referral was due to concern about white lesions. Raised soft tissue lesions including epuli and mucocoeles were second and ulceration, including recurrent aphthous and traumatic ulceration, was the third most common reason for referral. Results reveal a considerable demand for an oral medicine service dealing with oral lesions and conditions which other practitioners consider to be outside the scope of their practice.²³

Another study approaching 266 medical practitioners, reported that 6% of the medical practitioners treated oral lesions on their own. 60% referrals were made to a general dental practitioner rather than a dental specialist. 72% of them were not even aware of the presence of any Oral Medicine and Radiology specialists in their vicinity or city. How-

ever, there seems to be little awareness among the medical practitioners regarding the expertise and availability of specialists in Oral Medicine and Radiology. Very few referrals of oral mucosal lesions are done to the dentists, as a majority of them are done to general dental practitioners rather than to an Oral Medicine and Radiology specialist.²⁴

There was a wide range of oral medicine practitioner with a mean age of less than 40 years in Australia, India, Thailand and Italy. Countries with a mean age above 50 years included The Netherlands, USA, Sweden, Spain and Israel. Respondents from Brazil, India, Israel and Croatia reported more than 20 hr per week in practice with India reporting a high of 27 hr per week.⁸

Time spent with research was the least with less than 25% of time reported by 167 (84%) of respondents. The most time was spent with patient care with less than 25% of time reported by 51 (25%) of respondents, whereas more than 50% of time was spent with patient care by 78 (39%) of respondents. The two most common settings for oral medicine practice were hospitals and dental schools.²⁵ Another survey through a questionnaire from 103 freshly minted post-graduate specialists of various dental colleges in India, stated saturation in southern states of India and a shift from dentistry to newer avenues like medical transcription, the army dental corps, working as MBA in corporate hospitals was established.²⁶

Probable solution

- Some studies suggest to have a specific definition of oral medicine practice to help determine scope of practice and to educate health-care professionals and patients as to what services, oral medicine practitioners are willing and able to provide. This could also be utilized to motivate dental students to pursue oral medicine as a career²⁷
- Engaging oral medicine clinicians in rigorous research activities, which will have important implications on the progression of research and clinical care in various aspects of oral medicine.²⁵
- It is also reasonable to develop an international study to determine the effect of the presence of a trained oral medicine practitioner on the level of care provided for patients with a variety of diseases and promote the clinical practice of oral medicine amongst patients and all other healthcare professionals to increase awareness of the specialty.
- Effective interactive and hands on courses with different specialists in the medical forum like internal medicine, dermatology, emergency medicine, intensive care medicine, radiotherapy, endocrinology, nephrology, cardiology and ear nose and throat specialists to enhance our knowledge base and help them in return with our specialty knowledge of clinical and surgical issues of the maxillofacial region.
- Further get involved in the development of evidence-based protocols for recording and assessing forensic details.
- Team managing oral oncological lesions can be achieved by training the postgraduates in this field and exposing them to planning chemotherapy, radiotherapy and complications arising from such interventions plus treating medically compromised at a hospital inpatient setting. The oral medicine specialist can also play a key role in the management of post chemo/radiotherapy patients undergoing treatment for other cancers affecting the body and palliative management of dental issues in terminally ill patients.¹⁷
- Major oral cancer screening programs and policy making initiatives and effective laws to help to prevent the occurrence of such diseases.

Perseverance

Consistent with being proactive, on October 16, 2015, a representative group of Oral Medicine experts (Dr. Mark Drangsholt, Dr. Wendy Hupp, Dr. Martin Greenberg, Dr. Ross Kerr, Dr. Craig Miller, Dr. Eric Stoopler, Dr. Thomas Sollecito, Dr. Nat Treister, Dr. Ed Truelove and [in absentia] Dr. Michael Brennan and Dr. Peter Lockhart) met in Philadelphia for the Future of Oral Medicine conference. Topics of dialogue included the changing face of Oral Medicine; its relationship with Medicine, Dentistry and emerging areas; the burden of nondental orofacial disorders and comorbid systemic diseases that are likely to influence dental care in the next 20 years; future workforce skills and numbers needed to address the perceived health care problems presenting in 2035; advanced training required to diagnose and manage these disorders; plans to prevent misdiagnoses, suffering and wasted resources; and plans for implementation, including interactions with accountable care organizations, dental school Deans and the National Institutes of Health, just to name a few. Accordingly, they said that the discussions will continue and will result in some solutions but the best solutions will be obtained only if all of us become involved. Thus, everyone is encouraged to share their thoughts, concerns and suggestions. Academy members need to engage if Oral Medicine is to evolve, improve and meet the future on our terms. Otherwise, we shouldn't be complaining if/when the tsunami hits in our direction. The water is already rising.^{28,29}

CONCLUSION

Can I look them in the eye and honestly tell them that they should pursue a residency in oral medicine and they will do okay for themselves?" was the question by Jonathan Ship, in his lecture at the April 2017 AAOM Annual Meeting and is noted that the number of oral medicine practitioners and educators is in steady state rather than in growth phase. Moreover, the number of oral medicine researchers who were funded by the NIH also declined over the past two decades.³⁰

Despite these apprehensions, we are relatively passionate and enthusiastic about the future, but this zeal also balances the realization that some impairments lie in our path. All of these are collective signals declaring a wake-up call for our discipline.

As the saying goes, "Unless you try to do something beyond what you have already mastered, you will never grow." We need to fortify our discipline with constant upgrades and reviews to meet up the change and to adapt to future needs.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

ABBREVIATIONS

NUCC: National Uniform Claim Committee; **AAOM:** American Academy of Oral Medicine; **IAOMR:** Indian Academy of Oral Medicine and Radiology; **DMFT:** Decayed, Missing, Filled teeth Index.

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Article History: Submission Date : 10-04-2019; Revised Date : 28-05-2019; Acceptance Date : 15-06-2019.

Cite this article: Naik V, Prakash S. Prospect of Oral Medicine and the Pedagogical Deficiencies. *J Young Pharm.* 2019;11(3):243-6.