



Review Article

Interdisciplinary dentistry coincides with united we stand, divided we fall!

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Abstract

When we combine different fields for a particular research, we use interdisciplinary research. In dentistry, there are several branches. Many times, we need to treat a patient by interdisciplinary approach so as to enhance effectiveness and efficiency of the dentist. This aids to improve the treatment delivery standard and it increases the health professionals' ability to treat the patients.

This review article aims to shed light on interdisciplinary research opportunities, the links, problem solving, and improvement in diagnosis, treatment plan and overall better treatment options for the patients. Also interdisciplinary dentistry / multidisciplinary dentistry works jointly to treat critical patients easily.

This needs skills and knowledge to ensure optimal clinical results. As esthetics is the need of the hour, so prosthodontics, periodontics and conservative dentistry with endodontics and restorative dentistry can be beneficial for the dental desires of the public. It should implement a comprehensive therapy for the patients. This is like a team working for the patient so he is comfortable with efficient dentists around. Periodontal and gum diseases should be treated as early as possible. Only if we have healthy gums, we can decide better outcomes. Similarly any carious tooth or severely decayed tooth needs to be treated to get desired results. Finally Prosthodontics with crowns, bridges and implants are done depending upon patient's choice and esthetic demands.

Interdisciplinary dentistry like art and science for the patient's welfare. We can use different tools for desirable results. Teamwork, learning and ethics are required for interdisciplinary dentistry.

Keywords: Interdisciplinary, Dentistry, Skills, Practice, Clinical.

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1. Introduction

Dentistry is a vast field with several branches. It's a wise step to combine all branches and treat a difficult case. This is interdisciplinary dentistry which is teamwork and foundation of complete dental care with expertise from multiple dental disciplines, it is easy to achieve optimal outcome. Also it increases the dentist's effectiveness and efficiency with improved treatment delivery standard. It makes patient comfortable and also makes diagnosis plus treatment plan very smooth. Here we discuss mainly prosthodontics, periodontics and endodontics only.

This is now an integral part of daily dental practice and it should be given due priority as it is extremely important for diagnosis. The team and interaction is a blessing for the patient where the oral health condition is very challenging. There is a need for interdisciplinary training models so that the dentists can treat the ever growing population well.¹ In the article we shall study the interdisciplinary approaches and their benefits that arise from the integration of various dental specialities.²⁻⁴ We shall emphasize on roles of different dental specialities such as prosthodontics, periodontics and endodontics in context of collaborative patient management.⁵

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Interdisciplinary dentistry has become now paramount in comprehensive and patient centered care as every treatment plan of each case needs an interdisciplinary, multidisciplinary, interconnected approach.⁶⁻⁹ It is described as the mutual permeation of various specialities. This is accompanied by expansion of the scope of each and by no means a new concept in research, training or application.¹⁰ A widely applicable definition as such is non existent¹¹ because certain concepts /methods are there which go beyond the scope of individual specialities.¹² This works jointly as actual fusion of specialities and at the University levels, two different models: distributed and localized model are characterized.¹³

Periodontists help to correct ridge abnormalities and surgical treatments for future implant locations¹⁴ and they treat periodontal infections which if untreated can affect aesthetics as periodontium and prosthesis is not in harmony.¹⁵ Endodontically treated tooth is challenging as it involves procedures related to endodontics, operative dentistry and prosthodontics. It may need post and core so it has to be verified if the clinician would prefer a removable or fixed partial denture for the case.⁹

2. Aims of Interdisciplinary Research in Dentistry²

To increase research opportunities and to develop interdisciplinary links, in problem solving, to treat patients with better options and to improve diagnosis and treatment methods. This in turn increases the interdisciplinary training demand and dental education among dental health professionals.⁷ Also if interactive communication happens, patient gains confidence in dental team and proposed procedure which improves dental profession as well.

3. Future of Interdisciplinary Dentistry⁷

Visionary and motivated leaders who can guide budding dentists, are needed. Interdisciplinary leadership training programs and health professionals' education is vital. Along with some demonstration programs or projects in core curriculum is required. It should be such that students can share their interdisciplinary experiences with each other right from beginning of first day of class. The future^{6,17} is bright with advanced diagnostic techniques, integrated treatment planning, digital dentistry, regenerative therapies, patient centered care, continuing education and training, telemedicine/teledentistry and healthcare integration which solves cases by drawing on the expertise of multiple specialists.¹⁸

4. Drawbacks of Interdisciplinary Research²

Workload and resources imbalance, conceptual framework modification, vague communication, team and conflicts, high cost and improper time / schedule of interdisciplinary research teams.

5. Discussion

2.1. *Prostho perio endo inter relationship*

Unhealthy gums and unstable bone support, causes risk of failure of crowns, bridges and implants so it's imperative to get periodontal evaluation and treatment before restorative procedures. Periodontal therapy is done to treat gum diseases, reduce infections and stabilize the supporting structures.¹⁹ Restorations can be designed and placed so as to allow proper oral hygiene and healthy periodontium. In cases, with extensive periodontitis that causes tooth loss or compromised tooth structure, periodontal surgery and restorative procedures are included to restore function and aesthetics.²⁰

Prosthodontists are trained for design, fabrication, placement of prosthetic devices to restore function, improve aesthetics and enhance oral health while restorative dentists repair/ replace damaged or missing teeth to restore their form, function and appearance by procedures as dental fillings, dental crowns, dental implants, dental bridges and veneers-aesthetic enhancements.²¹

The interrelationship between three branches is evident in various aspects of dental care as prosthodontic preparation is required for restorative work including integration of prosthetic restorations with natural dentition. Also in maintenance and follow up care where regular dental checkups and maintenance visits are required to check the health/function of restorations and related issues.²²

Periodontics and Endodontics focus on different aspects of dental health and intersect in clinical practice as in anatomical correction. This is related to any pathology in one area can affect other, like pulp (endodontics) can spread to surrounding periodontal tissues (periodontics) causing periodontal disease. Conversely any advanced periodontal disease can cause periodontal attachment loss, exposing root canal system to bacterial invasion, leading to endodontic issues. Treatment planning is required as when tooth has periodontal and endodontic problem both, then a multidisciplinary approach is involved. They collaborate to manage patient's condition effectively so as to achieve successful outcomes. Combined procedures are needed as crown lengthening/ gum grafting and endodontic treatment maybe required to treat cases related to the pulp and root

canal before periodontal and prosthodontic procedures. Prognosis depends upon factors as severity of the disease, patient's overall oral health and compliance with post treatment care. The interplay is important for assessment of the tooth's prognosis. Also patients need to follow specific guidelines to achieve healthy periodontal tissues and root canal treated teeth in the long run.²³

Restoration contour is extremely important to periodontal health maintenance and any active periodontal disease must be treated/controlled prior to any restorative dentistry procedure.²⁴

All restorative dentistry has to be performed on a periodontics free of inflammation and pockets for a good functional and esthetic restorative result. Also the junction between a cemented restoration and the tooth is always a potential site for recurrent caries because of dissolution of the luting agent and inherent rough. If the restoration is more accurately adapted to the tooth, the chances of recurrent caries or periodontal disease are quite less.²⁵

Prosthodontic therapy should promote patient comfort, function, health and aesthetics. It should be meticulously constructed, implanted and perfectly adapted to the surrounding periodontal tissue. In brief, symbiotic relationship or mutual protection relationship must exist.²⁶ Periodontitis causes resorption of alveolar bone which reduces the quantity and quality of the tissues supporting the teeth. Thus partial dentures area can be related with highly mobile abutment teeth, due to increased forces on the abutment teeth/plaque build up so rigid metal direct connector exerts less force on the abutment.²⁷ In tooth with short clinical crown, some periodontal procedures as crown lengthening following endodontic care, is important for the abutment tooth's long-term prognosis. This helps to lengthen the supragingival tooth structure for aesthetic purposes or restoration.

6. Conclusion

Interdisciplinary dentistry with prosthodontics, periodontics, endodontics is a teamwork. This is solid foundation for dental clinical work to achieve physiologically acceptable patient satisfied results with good aesthetics and functions. It is vital for enhancing patient care and improving treatment plan. If dentists work in co-operation, it will optimise clinical outcomes with good prognosis. Also with tailored treatment plans, unique for every patient, it revolutionizes the way oral healthcare is delivered. This is article and science of dentistry. Interdisciplinary dentistry depends on teamwork. An attempt should be made to treat every case clinically as a

joint effort. This multidisciplinary treatment if based on proper ethics will definitely guarantee success for all.

7. Source of Funding

None.

8. Conflict of Interest

None.

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