

## Multidisciplinary Approach in Modern Dentistry: An Innovation in Advance Dental Care

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**Received:** May 09, 2015; **Published:** May 13, 2015

### Abstract

Today's dentist does not just repair teeth to make them better for chewing. Now the work involves esthetics. With the increase in patients demand for more attractive teeth, dentists must now become more familiar with the previously independent disciplines of orthodontics, periodontics, restorative dentistry, and maxillofacial surgery. In today's interdisciplinary dental world, treatment planning must begin with well-defined esthetic objectives. By beginning with esthetics, and taking into consideration the impact on function, structure, and biology, the clinician will be able to use the various disciplines in dentistry to deliver the highest level of dental care to each patient.

**Keywords:** *Esthetics; Periodontics; Interdisciplinary; Tissue Engineering*

### Introduction

Today's modern practice of dentistry, it is no longer acceptable to just repair individual teeth. More and more patients are demanding a final appearance that is not only physiologically and mechanically sound, but also esthetically pleasing [1]. As a result of a heightened esthetic awareness of our patients, a basic body of knowledge of the various dental treatments of teeth is necessary [2].

Dentistry has been practiced since the ancient ages but has come to the limelight only for the past few decades. For the new era of dentistry this was considered as the dark phase where health sciences did not consider dentistry as an integrated part but, with the advent of various researches, awareness, aesthetics and systemic association this field of medical science became of utmost importance.

Various researches gave in way to the field which was more about the diversity, it had in the approach of the treatment. Till date, for many under developed countries where there is lack of awareness in dentistry it is more about removal of the offending teeth and pain. But we have excelled and have gained success in various treatments which were never thought about.

The most important thing to be considered is with success comes responsibility. Hence for success of treatment we are solely responsible. Coordination of care is the critical function of primary care that may be best delivered using a team approach. Coordination is defined as state of being harmonized in a common action and efforts'

Coordination is almost synonymous with interdisciplinary approach. An interdisciplinary approach to problem solving involves drawing appropriately from multiple disciplines to redefine problem outside of normal boundaries and reach solution based on a new understanding of complex situations.

It's often seen as revolutionary by skills centered specialist but it's simply a fundamental expression of being guided by holism rather than reductionism.

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**Citation:** Mohammad N Alam and Mohammad Sabir. "Multidisciplinary Approach in Modern Dentistry: An Innovation in Advance Dental Care". *EC Dental Science* 1.4 (2015): 167-172.

**Interdisciplinary Approach**

One of the major barriers of this approaches the long established tradition of highly focused professionals cultivating a protective or rather restrictive boundary around their area of expertise, and sometimes it does not benefit the wider public interest. The concept of interdisciplinary approach to dentistry helps the clinician in proper diagnosis and treatment planning which is the most important reason for successful treatment.

It is hectic and sometimes tedious for the clinician to consider the importance of preparing a case which includes the medical history, family history and also the general examination. The cause of the complaint of the patient surprisingly more often lies in one of the above criteria's. Henceforth like the old school of thought of giving ample importance to recording the history must always be given a priority. With this it opens up other disciplines in the field which are always of great help in treating a patient to the best of his health.

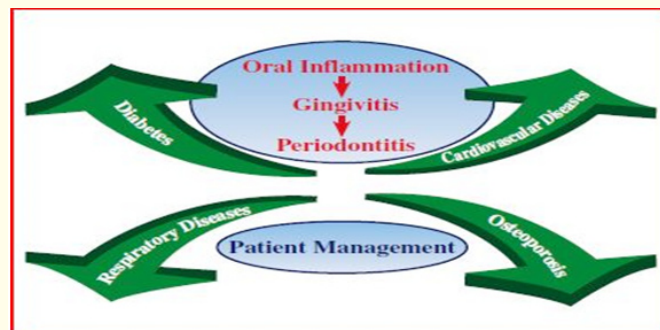
**Systemic Effects**

Systemic effects based on the consideration the interdisciplinary approach which includes the various disciplines in dentistry as well as the medical fraternity, which go hand in hand to diagnose as well as to treat the patient condition.

Recent advances in dentistry has shown some fact which are incredible where various clinical signs which appear in oral cavity before it had the adverse effect on the general health. These clinical signs are either the earlier signs which indicates the condition of the diseases and it's progression to systemic health. When it's about health this slightest clue is of utmost important in determining the course of the diseases, also this awareness has brought in increase in life span of people, which does make a difference and has a reason to believe why these things are important. The reason is very simple, it is well known 'Long life healthy life'. This is the motto of the present world.

It is not difficult for us to believe the fact which has a point to prove. Sir Conan Doyle once said '*When you have eliminated the impossible, whatever remains, however improbable must be the truth*'. Various systemic disorders having the impact over the oral cavity affecting the periodontium modifies the tissue response to local factors and produce anatomic changes that may favour disease progression.

There are several of them which we generally implicate as endocrine disorders, hormonal changes, hematological disorders, immune deficiencies, stress psychosomatic disorders, nutritional influences, cardiac conditions, preterm low birth just to mention a few among the many.



**Figure1:** Oral and Systemic Disease Relation.

Evidence has shed light on the converse side whether there is relationship between systemic health and oral health, and its potential effects of periodontal disease on the range of systemic organs. This field which is referred to as periodontal medicine (Figure 1) is an example of multidisciplinary approach which helps to answer these very important questions;

- a. Are these infections of peridontium a risk factor for systemic disease or conditions that effect human health?
- b. Can Bacterial infection of peridontium a risk factors for systemic disease or conditions that effect human health?

Medicine is an ever changing science undergoing continually development, research and clinical experience are continually expanding our knowledge, in particular our knowledge of proper treatment and drug therapy.

**Applying the Interdisciplinary Approach [5]**

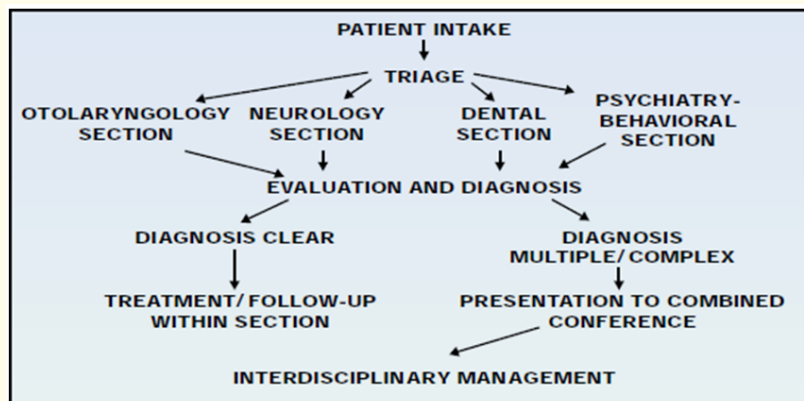


Figure 2: Interdisciplinary Management.

**Non-Medical Personnel Contribution**

The most interesting approach in dentistry is the inclusion of non-medical personnel which helps us in various ways. Like the application and use of bio-materials which are considered as gold standard and is highly bio compatible in the oral environment.

These have been tested overtime and surfaced for use, the credit completely goes to the biophysicist and biochemist whose hard work has changed lives and their presence into the field is highly appreciated. The use of various drugs, materials and among them the most remarkable the implants, all these would have never come into our world without their contribution. They have been tested over several stages so that they are completely safe for use.

The clinical trials which are distributed over several years where the material or the various types of drugs had to pass through several stages of testing before it actually goes in for human use. It is after all these that a material is introduced to the concerned requirement for use in oral environment.

**Dental Implants**

Esthetics is an inseparable part of today’s dental treatment. However, the consistency of the results, reliability of treatment modalities, and long-term prognosis require scientific approaches to therapeutic procedures [3]. In recent years, implant dentistry has been increasingly influenced by esthetic considerations [4].

Dental implant patients often have other problems in different areas of the mouth which are not independent of one another and an effective resolution of the problem often requires treatment across specialties. The most effective approach to managing these patients, therefore, is through a multidisciplinary team that focuses on the pathology, impairments, functional limitations and resultant treatment.

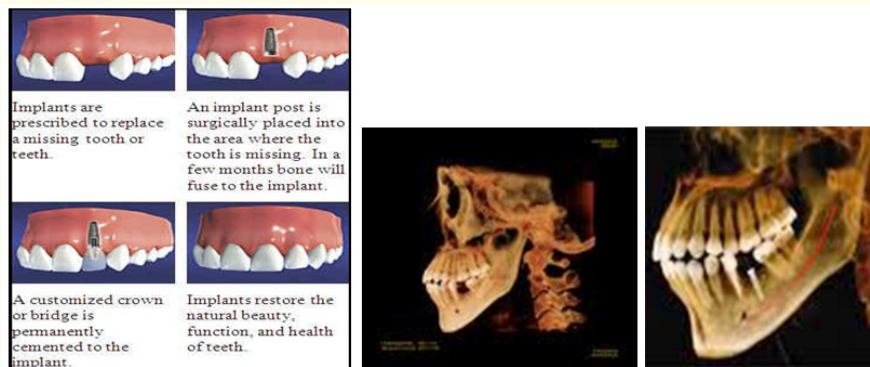


Figure3: Dental Implants.

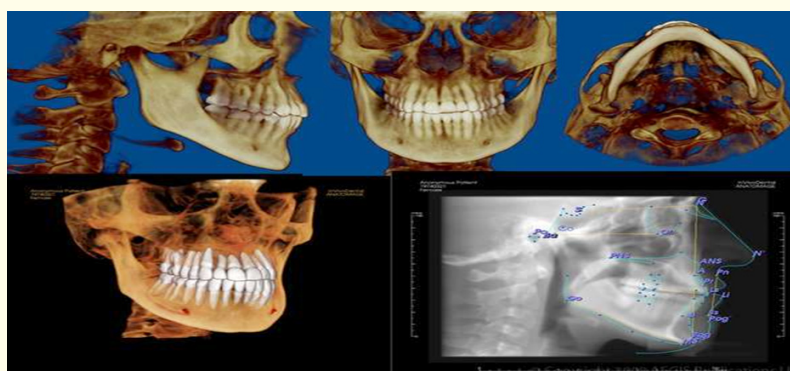
Team members from different specialties should work together, sharing common information regarding the contributing factors underlying a patient’s problem. Diagnostic testing, assessments and treatment planning are managed in a coordinated effort, resulting in better patient outcomes. All team members should have training and expertise in the assessment and treatment of complicated implant cases.

The interdisciplinary team approach represents a significant shift in the way care has traditionally been delivered to implant patients. Team members should take a comprehensive, integrated approach, focusing on all aspects of the patient’s problem from the underlying pathology through the resultant outcome.

Thus for each individual patient, service delivery is faster, more comprehensive and cost effective. It should be noted that the interdisciplinary team can and often does, include dental professionals from separate clinical practices and/or facilities. The effectiveness of the team comes through a co-operative approach to patient management that relies on the sharing of information. This can certainly be accomplished without all team members residing under one roof.

### Dental Imaging The Third Eye

During the last few decade the advances in the field of imaging has made things very simple for the dentist and moreover safe for the patient. These conditions before the age of imaging were earlier more dependent on experience and vague confirmations and caused damage to the patient in the form of radiation exposure, but based on the latest nuclear imaging techniques which has been able to confirm the condition with minimum error, 3D vision and lesser exposure also it is less time consuming which is a boon for the field.

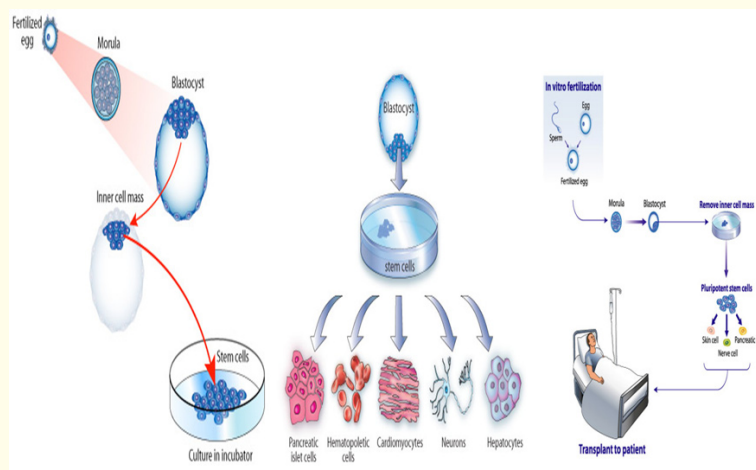


All these have been made possible due to interdisciplinary approach as we strive to become better and better in our approach in handling the patient. Keeping aside the cost factor, which still hold on the major drawbacks in the approaches otherwise we are moving really fast with the help of all these in achieving a goal that is to treat a condition successfully to the best of the health of patient conditions.

**Tissue Engineering**

“An interdisciplinary field that applies the principles of engineering and life sciences toward the development of biological substitutes that restore, maintain, or improve tissue function or a whole organ” [6].

The application of tissue engineering where the cell biologist plays a major role in helping the patient to regain what has been lost. It’s really amazing with the kind of results they have achieved. Fortunately all these small or big altogether has changed the face of dentistry advancing into the modern world.



**Figure5:** Basic Concept of Tissue Engineering [6].

**Discussion**

Like the importance of building a mutually supportive team can readily be appreciated by trying to work in an environment where everyone has been forced to protect their corner.

Successful leadership involves encouraging staff to develop their potential, both as an individual and as a valued member of the team, and encouraging discussion as to what the goals are to be and how to achieve them.

Motivation to work as a team can be fostered by monetary incentives linked to the performance of the practice, but it is wise to find out what motivates individual members of the practice, because money may not be the most important factor for all employees.

**Conclusion**

The 21<sup>st</sup> century is the era of dentistry, with the advent of new innovative technology our duty is to incorporate them into our day to day practice, for this we require to work together which is going to be our strength towards excellence. The specialty of dentistry has several specializations and with team work, overall evaluation, diagnosis and treatment planning proper treatment can be rendered to the patients benefit.

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**Volume 1 Issue 4 May 2015**

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