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## **Golden triangle of minimal intervention dentistry in paediatric dentistry**

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**Abstract**---The Minimal Intervention Dentistry (MID) approach provides a more all-inclusive approach towards caries management, comprising of prevention, control, and treatment of caries. The various minimally invasive techniques employed in the MID are the preferred treatment modalities to treat dental caries in children. They are being increasingly employed by dentists with an aim to increase co-operation of children, with an added advantage of giving them a positive dental experience. The behavior modification of young children for an effective Paediatric Dental Care revolves around the Paediatric Dentistry Treatment Triangle, corners of which are formed primarily by the child, parent and dentist. To that end, we have tried to look at certain aspects of the MID from the perspective of a paediatric dentist and thereby proposed a modification of the 'Golden Triangle of MID' in relation to its application in paediatric dentistry.

**Keywords**---golden triangle, minimal intervention dentistry, paediatric dentistry.

### Short Communication

The different minimally invasive techniques MID have the advantages of being more child-friendly, less anxiety provoking, preserve more tooth tissue and are considered equally effective as the traditional treatment models. <sup>1</sup>

The 'Golden Triangle' of MID proposed by A. Banerjee <sup>2</sup> is an equilateral triangle and depicts that the following three factors are equally important for the success of a minimally invasive restoration (Figure 1) :

1. The histopathology of the dental tissue to be treated
2. The material science (adhesion and bonding mechanism) <sup>3</sup>
3. The clinical handling of the patient by the dentist

The Paediatric Dentistry Treatment Triangle, first introduced in 1975 and then later modified in 2014 by G.Z.Wright and Ari Kupeitzky provides the framework for managing/modifying the behavior of children for providing optimum Paediatric Dental Care.<sup>4</sup> It has the following characteristics (Figure 2):

1. Equilateral triangle (All the 3 elements of the triangle cannot be viewed in isolation; each are inter-related)
2. Dynamic relationship (The arrows on the sides which state that the relationships between the child, dentist and parent are not constant and can be altered by either by a harmonious/ unpleasant situation)
3. Child at the apex (The child is the center of attention of both, the parents as well as the Dentist)
4. 1:2 relationships (Treatment of children involves the relationship between the dentist and the child as well as the parents, unlike in adults where this relationship involves only the dentist and the parent)

Thus, in the context of Paediatric dental care, we would like to reason that, in the Golden Triangle of Minimal Intervention Dentistry for the treatment of young children (Figure 3):

1. The clinical handling of the patient is most critical and hence should be placed at the apex
2. Further, owing to importance of this aspect in determining the success of the treatment vis a vis clinical outcome, it would have higher weightage compared to the other two elements. This would yield a modified triangle, an isosceles, rather than equilateral
3. Bidirectional arrows should be included indicating the importance of all three factors for a successful MID treatment

Following arguments further support this proposal:

- Our frame of reference of placing the clinical handling of the patient (Patient age, Dental Environment, Dentist, Dental team, various Behavior Management Strategies adopted by them) at the apex of the triangles an important determinant of successful clinical outcome is also supported by others <sup>5, 6</sup>

- Having optimal knowledge about the histopathology of the dental tissues and using the best adhesive materials may not yield desired results if the child behavior management strategies fail. Thus the dependency of these two factors on the clinical handling of the patient is more (as suggested by the longer sides of the triangle) as compared to their inter-dependency on each other
- The bidirectional arrows, similar to the original Paediatric Dentistry Treatment Triangle do support the concept of interdependency between the three aspects, as originally suggested by Wright et al. They indicate that for the success of an optimal adhesive restoration, the presence of all the factors is equally important

Why is this paper important to Paediatric Dentists?

- The different behavior modification techniques represent the foundations of the present day standard operating principles in the pediatric dentistry
- The minimally invasive techniques employed by the MID philosophy have been recommended and routinely employed for behavior modification of young children, especially those belonging to pre-cooperative age group
- Thus, the same theme supports our proposal to modify the Golden Triangle of MID in order to put pediatric dental care in proper perspective.

### **Declarations**

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### **Conflict of Interest**

The authors have no conflict of interest to declare that are relevant to the content of this article.

### **Author Contributions**

Conceptualization, material preparation, data collection: Dr Gandhali Malgaonkar Joshi; scientific inputs, resources, approved the version to be published: Dr. Alok Patel; Formal analysis, supervision: Dr. Shweta Jajo; Scientific inputs: Dr. Sayali Belsare. All authors read and approved the final manuscript.

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**References**

- <sup>1</sup> Leal SC. Minimal intervention dentistry in the management of the paediatric patient. Br Dent J. 2014 Jun 13;216(11):623-7
- <sup>2</sup> Banerjee, A. 'MI'opia or 20/20 vision? Br Dent J 214, 101–105 (2013).
- <sup>3</sup> Jo E, Frencken, Mathilde C. Peters, David J. Manton, Soraya C. Leal, Valeria V. Gordan, Ece Eden Minimal Intervention Dentistry - A Review. Report of an FDI task group. Int Dent J. 2012 October ; 62(5): 223–243
- <sup>4</sup> Wright G.Z., Kupietzky A. Behavior Management in Dentistry for Children. 3<sup>rd</sup> Edn. by John Wiley & Sons, 2021.pg 1-9
- <sup>5</sup> Marwah N., Textbook of Paediatric Dentistry, 4th Edition, Jaypee Brothers Medical Publishers 2019; 3-10
- <sup>6</sup> Viswanath S, Asokan S, Geethapriya PR, Eswara K (2020) Parenting Styles and their Influence on Child's Dental Behavior and Caries Status: An Analytical Cross-Sectional Study. Journal of Clinical Pediatric Dentistry 2020; 44(1): 8-14

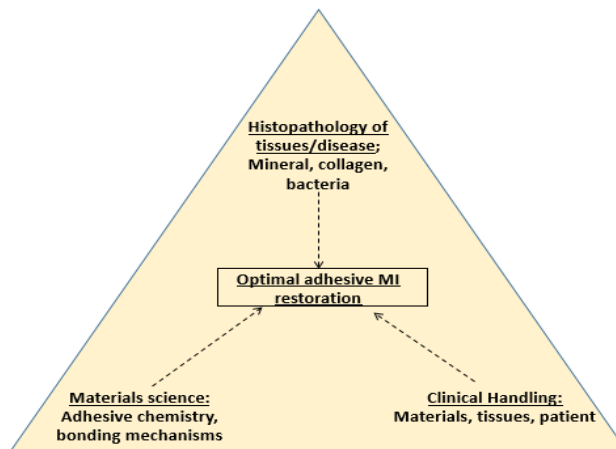


Figure 1: Golden Triangle of MID

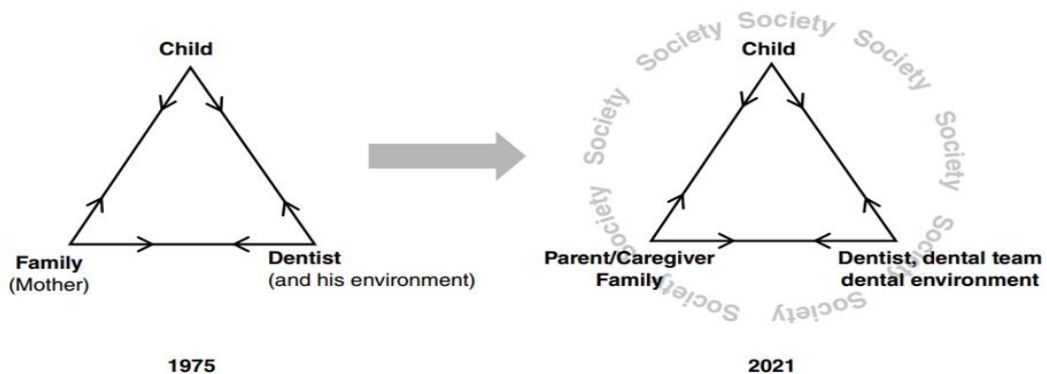


Figure 2: Paediatric Dentistry Treatment Triangle by Gerald Z. Wright, Ari Kupietzky. Behavior Management in Dentistry for Children. 3rd Edition, 2021. Chapter 1, Page 3

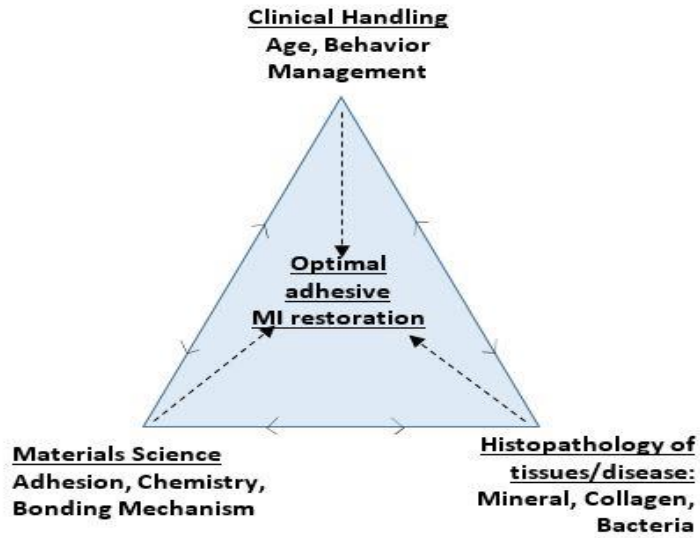


Figure 3: Golden Triangle of MID, as modified for Paediatric Dental Patients  
(Adapted from Fig.2, Banerjee, A. 'MI'opia or 20/20 vision?. Br Dent J 214, 101–105 (2013).