

Is Minimum Intervention Dentistry an effective approach to manage dental caries in a child with dental anxiety?

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Abstract

Objective: The objective of this case study was to investigate the efficacy of Minimum Intervention Dentistry (MID) to manage caries in a child with dental anxiety.

Material and method: The research was conducted using PubMed and Google scholar databases. It focused on reviewing the relevant articles dated from 2004 to 2016. A nine year old girl was selected as a subject. She has a past history of dental anxiety. Her dental anxiety was assessed using the Modified Child Dental Anxiety Scale (MCDAS). It showed that the child may have dental anxiety associated with incompletion. In addition, a caries risk assessment was performed using CAMBRA. The result revealed that the patient has a high risk of caries. This was managed by implementing the MID approach which focused to provide a positive experience for this child.

Results: The results indicated that the implementation of MID approach tried to build up a trustworthy and positive relationship between the clinician and child. It may have contributed to increase patient's tolerance for accepting dental treatment. Overall, the MID approach tried to provide a positive dental experience to the child.

Conclusion: It has been concluded that MID is an effective approach which may contribute to manage caries in a child with dental anxiety. This approach can play an important role to acclimatise the patient to dental environment. Overall, it may enhance oral health, general health and quality of life of patients.

Introduction

Minimum Intervention Dentistry (MID) is an approach for managing dental caries. It places importance on prevention and early interception of disease [1,2]. This approach focuses upon educating patients towards oral hygiene care. Its objective is to prevent disease and minimize the requirement for surgical intervention [3]. The concept is based on a philosophy of care which is based on five principles. These principles include identification and management of the risk factors to control the disease, the detection and remineralisation of early lesions, application of individualized preventive strategies, minimal invasive surgical intervention, and where possible the repair of defective restorations rather than replacement [1,2,4-7]. This model of care is not only confined to the management of dental caries. It is applicable to other areas of dentistry such as periodontology, and oral medicine [5-8]. MID has outdated the GV Black approach to control caries [3]. It is a holistic based approach to manage dental caries [4-9]. This approach means to manage the cause and symptom of the disease [10]. In clinical practice it should be implemented to manage dental caries [11]. There are benefits of implementing this approach. These include motivation of patients for an effective management of oral disease, the need for complex restorations can be avoided, and the natural dentition can be retained for a longer period of time [7]. In the management of dental caries, MID care plan comprises of three phases: diagnostic phase,

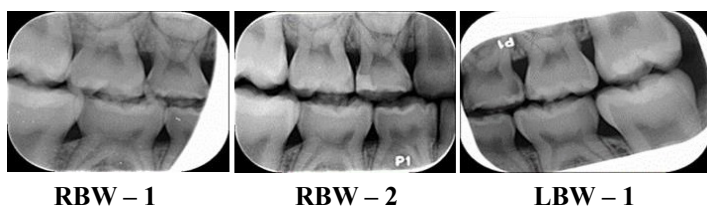
prophylactic phase and recall monitoring phase. The diagnostic phase allows understanding the reasons behind disease occurrence. It also evaluates the severity of disease. In addition, a caries risk assessment of individual patients is determined. It is evaluated on the basis of imbalance between protective, risk and pathological factors [8]. The prophylactic phase aims to improve the imbalance between these factors. This involves emphasis on oral hygiene, dietary habits, remineralisation strategies (fluoride treatment), placement of sealants and restorative treatment. The restorative care is required when there are cavitated lesions extending to dentine. It follows a minimum invasive approach which focuses on conservative designs of cavities [8]. The recall monitoring phase includes follow-up maintenance and recall. It aims to reinforce patients' education related to oral hygiene care. In addition, the effectiveness of preventive and restorative treatment implemented is monitored in this phase [8].

MID is considered to be a cost-effective approach [12]. It contributes to reduced anxiety in treatment of dental decay [13]. The research reveals that one in ten children suffer from dental anxiety in Australia [14]. In 2012-13, the average cost per admission for dental treatment in hospital was AU\$2,508. This treatment was provided to manage caries in dental anxious children from 0-14 years old. The implementation of MID approach can reduce this costly intervention [13].

The objective of this literature review and case study description is to explore the effectiveness of MID approach to manage dental caries in a child with dental anxiety.

Case Description

A nine year old girl visited the dental therapy clinic of Bendigo Health, Anne Caudle Centre after two years. She has a past history of dental anxiety. In the past, her dental treatment included application of fissure sealants and high concentrated fluoride (Duraphat). On 27th January 2016, she visited for her oral comprehensive examination with her mother. The patient was probably anxious to visit the dental clinic. In this appointment, appropriate behaviour guidance techniques like tell-show- do, desensitisation, plus distractions were implemented to familiarize the child to dental environment. This approach helped to conduct an oral comprehensive examination. During this examination the child's medical, dental, and social history were recorded. In addition, her diet was analyzed which highlighted high frequency of juice intake. The patient also mentioned that she brushed once a day with a child's toothpaste and had never used floss. Other investigations were done as a part of this examination process. This included extra and intra oral (soft and hard tissue) exam, saliva test, PSR, intra-oral radiographs like periapical and bitewings and intra-oral photographs. In addition, a caries risk assessment of the patient was performed using CAMBRA. This tool indicated that patient has a high risk of caries. All these investigations helped to formulate a treatment plan.



The treatment plan indicated to implement a MID approach with behaviour management techniques for the patient. It consisted of nonsurgical therapy, restorative therapy, and maintenance therapy. In the nonsurgical therapy treatment performed was plaque index, oral hygiene instructions, dietary advice (diet and drinking fluoridated tap water), tooth mousse plus, 2g/100ml topical sodium fluoride gel (Germiphene 7 topical fluoride gel), fissure sealant on the upper right first permanent molar. The restorative therapy included 54 DO, 64 DO light cured glass ionomer cement restorations and 54 MO self-cured glass ionomer cement restoration. In addition, 65 MO required a Hall's crown. Lastly, the maintenance therapy required twelve months recall because the patient has a high risk of caries (Figures 1 and 2).



Figure 1: Intraoral photos of upper and lower arches before treatment.



Figure 2: Intraoral photos of upper and lower arches after treatment.

Materials and Methods

To conduct this literature review data bases were used. They are known as Pub Med, Google scholar. The keywords used in these databases were Minimum Intervention Dentistry, holistic, desensitise, preventive dentistry and dental anxiety. These keywords helped to review the journal articles relevant to this research.

This study was conducted at the dental therapy clinic of Anne Caudle Centre, Bendigo Health. The time frame of this study was from 27th January 2016 to 19th April 2016. Verbal consent was taken from the patient's mother after considering patient's age. This consent allowed the patient to participate in this research and receive appropriate treatment like taking periapical and bitewing radiographs. In addition, written consent was acquired from the patient's mother to develop intraoral photographs of patient. These photographs were taken before and after the treatment provided to the patient. A caries risk assessment of the patient was performed using CAMBRA.

The patient's dental anxiety was assessed using the Modified Child Dental Anxiety Scale (MCDAS). It was concluded that patient probably had moderate dental anxiety associated with non-compliance. The appropriate behaviour guidance techniques with minimum intervention approach were implemented. Techniques like tell show do, desensitising, distraction and demonstration of a specific smart phone application (Brush Up) were implemented. This approach may have contributed to achieve the patient's compliance. A Facial Image Scale (FIS) was used to assess the patient's perspective regarding the Hall Technique. It indicated a positive experience.

Results

The patient's mother was requested to submit a diet diary of patient. This helped to analyse the high caries risk diet of the patient. The patient received brochures which provided information in relation to diet, tooth brushing, flossing, drinking tap water, and frequency of high sugar snacks. The patient's mother seemed encouraged to reinforce this information to her child. After few appointments mother was questioned about her perspective in relation to the patient's diet and oral hygiene. It was also important to understand the mother's attitude towards her oral health. This was necessary as the mother is a role model for the patient. A written questionnaire was provided to mother to analyse the result.

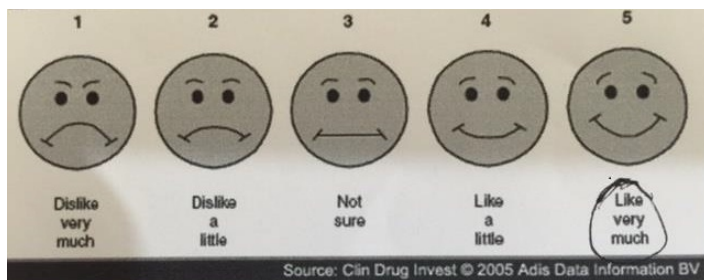
The mother's response to the questionnaire has been given in Table 1. She appreciated the introduction of a specific smart phone

application (Brush Up). The patient's mother recognised that this tool has motivated her child to brush two times a day with adult toothpaste. She also said that patient has started using flossette and has tried to modify her diet by reducing the frequency of juice intake.

Questions related to parent and child's behaviour	Mother's response
In past, did you have any dental treatment?	Yes, I had dental treatment for fillings in my teeth.
Do you have dental anxiety?	I don't have dental anxiety.
How many times you brush your teeth in a day?	I brush once a day (after breakfast).
Do you avoid rinsing after application of fluoridated toothpaste?	I rinse my mouth after application of Colgate toothpaste.
Do you use any interdental aids like floss, interdental brushes?	Occasionally, I use floss
Do you snack and drink sweetened drinks more than three times a day?	Occasionally, I snack and drink juice.
Has the child started brushing twice a day?	She brushes morning and night
Has the child started using adult toothpaste?	She has started using Colgate adult toothpaste
Does the child avoid to rinse her mouth after application of adult toothpaste?	She doesn't rinse her mouth after the application of toothpaste
Is the frequency of drinking juice has reduced?	She has reduced the frequency of juice intake

Table 1: A questionnaire provided to the mother.

The result revealed that the parent seemed encouraged to change her behaviour in relation to oral hygiene. In the subsequent appointments she stated her frequency of brushing and flossing has increased to two times a day. In addition, she avoids rinsing after application of fluoridated toothpaste. This positive outcome may have motivated the patient to improve her oral hygiene. It was assessed by observing reduced plaque index score of patient in subsequent visits. Furthermore, it was observed that patient's tolerance to accept MID procedures may have increased. Overall, the implementation of MID approach seemed to provide a positive dental experience to the child. It may have contributed to achieve the patient's compliance in the dental chair and reduced dental anxiety. This is revealed in the Figures 3-5.



Source: Tolia V1, Han C, North JD, Amer F. Taste comparisons for lansoprazole strawberry-flavoured delayed-release orally disintegrating tablet and ranitidine peppermint-flavoured syrup in children. Clin Drug Investig. 2005;25(5):285-92.

Figure 2: A Facial Image Scale (FIS) to assess child's feeling about the Hall Technique.

Faces version of the Modified Child Dental Anxiety Scale

For the next eight questions I would like you to show me how relaxed or worried you get about the dentist. To show me how relaxed or worried you feel, please use the simple scale below. The scale is just like a ruler going from 1 which would show that you are relaxed, to 5 which would show that you are worried.

1. Would mean: relaxed/not worried
2. Would mean: very slightly worried
3. Would mean: fairly worried
4. Would mean: worried a lot
5. Would mean: Very worried

How do you feel about –

Going to the dentist generally?	1	2	3	4	5
Having your teeth looked at?	1	2	3	4	5
Having your teeth scarped and polished?	1	2	3	4	5
Having sleepy juice in the gum?	1	2	3	4	5
Having a filling?	1	2	3	4	5

Source: Howard KE, Freeman R. Reliability and validity of a faces version of the Modified Child Dental Anxiety Scale. Int J Paediatr Dent.2007 Jul;17(4):281-8

Figure 4: Patient's dental anxiety before treatment.

Faces version of the Modified Child Dental Anxiety Scale

For the next eight questions I would like you to show me how relaxed or worried you get about the dentist. To show me how relaxed or worried you feel, please use the simple scale below. The scale is just like a ruler going from 1 which would show that you are relaxed, to 5 which would show that you are worried.

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How do you feel about –

Going to the dentist generally?	1	2	3	4	5
Having your teeth looked at?	1	2	3	4	5
Having your teeth scarped and polished?	1	2	3	4	5
Having sleepy juice in the gum?	1	2	3	4	5
Having a filling?	1	2	3	4	5

Source: Howard KE, Freeman R. Reliability and validity of a faces version of the Modified Child Dental Anxiety Scale. Int J Paediatr Dent.2007 Jul;17(4):281-8

Figure 5: Patient's dental anxiety after treatment.

Discussion

The treatment aimed to implement behaviour management techniques with minimum intervention approach. This procedure may have achieved the patient's compliance in dental chair. A multifaceted approach of behaviour modification contributed to the success of treatment. It focused to deliver a behaviour guidance plan. This plan aimed to deliver appropriate communication with verbal reassurance to the patient [15]. It helped to establish rapport and trust with the child. The skills of communication were associated with specific techniques. These are known as direct observation, tell-show-do, voice control, positive reinforcement, distraction, and memory restructuring [14-16].

A minimum intervention care plan was implemented to manage caries in a dental anxious child. In the diagnostic phase a thorough dietary analysis was performed. The patient's mother was requested to submit a diet diary in subsequent appointment. This diary indicated the details of patient's diet. It highlighted the dietary sugar content. The frequency of sugar consumption was recorded. This analysis revealed that the patient had a high caries risk diet. Hugar, et al. [17] reported that a diet diary provides detail information regarding balanced and unbalanced diet [17]. On the other hand, Ricketts et al. [18] reported the limitations of diet diary. They stated that it is not one of the reliable tools to evaluate diet. The recording of high caries diet is deliberately avoided by patients [18].

The patient's self-care for her oral health was analyzed. It disclosed that the child was brushing once a day with a manual toothbrush. She used a low fluoridated tooth paste (child's toothpaste for 0-6 years). The interdental aids like floss were never used by her. It was determined that the attitude and behavioural habits of parent may have influenced the child's oral health. Adair et al. [19] stated that the parents' attitude plays an important role towards the oral hygiene and high caries diet of children [19]. In addition, the parents' behavioural habits positively influence children's behavioural habits for tooth brushing and snacking [20]. It was concluded that the patient's mother required motivation. Kamran et al. [20] stated that the motivation of parents changes their attitude and behaviour towards oral health care [20].

The diagnostic phase aimed to conduct a thorough intraoral examination. It revealed visible generalised plaque on teeth, deep enamel pits and fissures on upper right first permanent molar. The clinical examination diagnosed cavitated and non-cavitated active lesions in upper primary molars. A ball ended probe was preferred in comparison to the traditional probing method (explorer). Domejean and De Tonquedec [21] stated that the traditional probing method doesn't provide specific information to detect a carious lesion. It is more likely responsible for enamel loss [21].

Overall, the diagnostic phase evaluated the risk factors, protective factors, and disease indicators. It concluded that the patient has high risk for caries. A preventive approach was necessary to reduce the caries risk in a child with dental anxiety. The research states that preventive treatment contributes to reduce the dental anxiety.

It increases the patient's tolerance towards the treatment [14].

The prophylactic phase aimed to balance between the risk factors, protective factors, and disease indicators. It aimed to provide preventive and minimum invasive treatment. The diet diary revealed that patient had a high risk of caries. The child and the parent were educated regarding multifactorial etiology of dental caries. They were motivated to implement small goals to reduce the frequency of patient's high caries diet. The child's high caries diet was assessed at frequent intervals and it was reduced in subsequent visits. Hugar, et al. [17] reported that the success of recommending a low caries diet depends upon various factors. One of the factors is the skill of a clinician in guiding the patient for observing the high caries diet. This aids to motivate the patient for providing a solution in maintaining the low caries diet [17].

The child received oral hygiene instruction. A specific smart phone application (Brush Up) was demonstrated as an example of video modelling. This can be an effective technique for behaviour change in a patient. It is based on psychological principle. The patient watches a video which models a targeted behaviour or skill. It then encourages him to follow the behaviour or skill watched [22]. The specific smart phone application (Brush Up) may have motivated the patient to brush two times a day. The mother reported that the child liked this technology as she used it every day. In addition, this software may have contributed to achieve the patient's compliance in dental chair. It tried to build up a trustworthy relationship between the child and the operator.

Al-Namankany et al. [22] reported that video modelling can reduce the dental anxiety of the patient. It significantly increases the patient's tolerance for receiving dental treatment [22]. Furthermore, the parent and child seemed encouraged to brush two times a day and use interdental aids like flossette every day. It was also suggested to avoid rinsing after application of fluoridated tooth paste. In addition, the patient's mother was motivated to encourage her child for using adult tooth paste. The result revealed improvement in patient's oral hygiene. It was evaluated by assessing the plaque index score in subsequent appointments.

The prophylactic phase focused to reduce the caries risk of patient. It included the intervention of resin based fissure sealant on upper right first permanent molar. The placement of fissure sealant may have contributed to attain the patient's compliance in dental chair. Azarpazhooh and Main [23] reported that placement of fissure sealants reduces the risk of caries [23]. Furthermore, Morgan, et al. [24] stated that placement of fissure sealants is an acceptable procedure by patients. It increases the patients' tolerance to receive dental treatment [24]. The patient tried to acclimatise in the dental environment after the implementation of preventive procedures. One of these procedures included an application of topical fluoride gel and GC Tooth Moose Plus (casein phosphor peptide – amorphous calcium phosphate with fluoride). It contributed to reduce the caries risk status of the patient. Newton, et al. [25] stated that dental anxiety can be prevented by promoting positive dental experience to the children. This includes avoidance of

invasive treatment and providing preventive treatment in initial dental visits [25].

A minimum invasive approach as a component of MID care plan was implemented in subsequent dental appointments. This approach contributed to manage caries in a child with dental anxiety. It focussed on the restorative procedures which aimed to preserve the sound tooth tissue and tried to provide patient's comfort [8]. One of this minimally invasive approach implemented was the Hall Technique on upper left second primary molar. It didn't require administration of local anesthesia, removal of caries as required with conventional restorations. A preformed metal crown (stainless steel crown) was cemented over caries which radiographically didn't extend beyond the middle third of dentine. This method of sealing the tooth prevented extension of the carious lesion. It prevented the progression of carious lesion by isolating the bacteria from oxygen, simple carbohydrates, and an acidic environment. In comparison, to conventional restorations it was a simple and quicker procedure which was more comfortable to the child [26]. On the other hand, the Hall Technique has its contraindications. It is avoided in primary molars in which carries extend beyond middle third of dentine. Furthermore, this approach can't be implemented in signs and symptoms of irreversible pulpitis, pulpal exposure, periradicular pathology, inter-radicular radiolucency and unrestorable crowns [26,27].

The research has stated the limitations of the Hall Technique. There are concerns regarding the increase of the occlusal-vertical dimension after the placement of Hall Technique crown. Although, the studies have reported that within fifteen to thirty days there is regain of normal occlusion. Furthermore, the first permanent molars can be impacted against the distal aspect of the crown. The research reported that the possibility of this limitation is low. It may also occur after the placement of conventional crowns [26].

Calache and Martin²⁶ reported the benefits of the Hall technique. It is a minimally invasive, anxiety reducing method of managing caries in primary molars. The failure of Hall Technique crowns is less in comparison to conventional restorations. Furthermore, the implementation of this approach requires less time than traditional method of caries management. It contributes to provide a positive dental experience to the children. This builds their tolerance to accept dental treatment. It also motivates them to focus on their oral hygiene. The Hall Technique is a cost-effective approach. It prevents hospitalisation of children for dental treatment under general anesthesia [26-28].

The caries management involved the minimum invasive approach. It may have contributed to gain the patient's compliance in dental chair. This approach focused on the conservative design of cavities. Olak²⁹ reported that minimum invasive preparation and excavation techniques contribute a positive experience to patients [29]. One of these approaches was implemented on the distal occlusal surface of upper left first primary molar. The radiograph of this tooth revealed that radiolucency extended beyond one third of the dentine. The research reported that such a radiographic lesion

is determined as C5 lesion [27]. It can be managed by a minimum invasive approach. This approach focussed on the removal of infected dentin and leaving behind the affected dentin. The infected dentin was determined by its sticky and soft characteristic. On the other hand, clinically the affected dentin was scratchy and sticky (tacky) in nature. The removal of infected dentin was later followed by placement of resin modified glass-ionomer cement restoration [9]. This minimum invasive approach was also implemented for distal occlusal carious lesion on the upper right first primary molar.

The research reported a more minimum invasive approach to manage caries. It stated that removal of soft or wet dentin at the base of a cavity preparation can be avoided. The dentino-enamel junction margin can be cleaned by a slow speed bur. This provides sound dentin to establish a complete peripheral seal of glass-ionomer cement [30]. The self-cured glass ionomer cement is a preferred material for this approach. It seals over the soft or wet dentin effectively. Furthermore, it is biocompatible, allows chemical adhesion, and is less technique sensitive [30,31]. This minimum invasive approach was implemented for mesial occlusal carious lesion on the upper right first primary molar.

The treatment provided to the patient will be evaluated in the recall monitoring phase. It will focus on the effectiveness of preventive and restorative treatment provided in the prophylactic phase. Furthermore, it will aim to reinforce patient's education related to oral hygiene care. This evaluation will be conducted approximately after a year. The Dental Health Services, Victoria 2012 report stated that an average recall interval for a high risk caries patient is 10.7 months [32]. On the other hand, the research reported that patients of age six and older with a high risk caries status should have a recall of every three to four months [33].

Recommendations

The implementation of other minimally invasive anxiety reducing methods of managing caries could have increased the efficiency of treatment. One of these methods is atraumatic restorative treatment (ART) [8-34]. It was introduced in Tanzania in mid-1980s as a cost-effective approach [35,36]. Initially ART was implemented in developing countries but now is being implemented in developed world. This approach aids in managing caries of dental anxious children, mentally or physically handicapped patients, and aged care residents [36]. The key features of ART are maximal prevention and minimal invasiveness to retain sound tooth structure [35,36]. It does not require administration of local anesthesia. The procedure involves the removal of infected dentin by using hand instruments. It aims to conserve the affected dentin. The excavation of infected dentin is followed by placement of a high viscous glass ionomer cement restorative material [8-37]. The glass ionomer cement is indicated because it chemically bonds to the tooth structure, releases fluoride and is less technique sensitive. These characteristics of glass ionomer cement aid to remineralise the restored tooth [36]. The research reported that ART reduces pain sensation in patient. It contributes to reduce the anxiety and fear of the patient during dental treatment. This approach positively reinforces the patient's behaviour to accept future dental treatment

[34]. However, Simon et al. [38] reported that dental anxiety of the children is similar after implementing the ART and conventional approach [38].

The application of silver diamine fluoride can also be considered to manage caries in patients with dental anxiety. The research stated that dental anxiety can be prevented by promoting positive dental experience to the children. This includes avoidance of invasive treatment and providing preventive treatment in initial dental visits [25]. Horst, et al. [39] reported that patients with dental phobia with asymptomatic active carious lesions have better tolerance from the preventive treatment. This includes application of silver diamine fluoride [39].

Silver diamine fluoride was introduced in Japan eighty years ago. This product is used in most of the countries to manage dental caries. It consists of silver, fluoride and ammonia. The silver is an antimicrobial agent; the fluoride aids in remineralisation and the ammonia act as a stabilizer to preserve high concentrations in solution. This product is a colorless topical agent which at a pH 10 has 5.0-5.9% fluoride and 24.4-28.8% (w/v) silver. The recommended dosage is one drop (25 uL) per 10 kg per dental visit. It is suggested to apply more than once a year for achieving a successful result [39].

The research reported that silver diamine fluoride is the most effective product for arresting caries in the dentinal tubules. Furthermore, it is more effective than fluoride varnish to manage active caries lesions. The taste of silver diamine fluoride is more favorable than fluoride varnish. It is considered as a cost effective intervention in preventing caries. In comparison to fluoride-releasing glass ionomer and resin sealants it is an inexpensive topical medicament for caries prevention [39].

Horst et al. [39] reported the side effect of silver diamine fluoride. It stains the carious lesions. Although, this staining provides a positive indication that treatment was successful. The application of a saturated solution of potassium iodide (SSKI) decreases staining. It should be applied after silver diamine fluoride dries on teeth surfaces. This solution (SSKI) is contradicted in pregnant women. Furthermore, it should be avoided in the first six months of breastfeeding. This is because it is not safe for the developing thyroid gland. Overall, the application of silver diamine fluoride is safe. This product has not been associated with any adverse effects [39].

It is also recommended to implement International Caries Detection and Assessment System (ICDAS) as a component of MID approach. ICDAS is a thorough clinical investigation of detecting carious lesions. It is based on a double coded system for each tooth surface examined. The first code indicates that a tooth surface is sound. Furthermore, it represents the type of restoration or sealant on a tooth surface. The carious state of a tooth surface is determined by the second code [20]. Mason, et al. [40] reported ICDAS aids to detect early white spot lesions on the tooth surfaces. These lesions are stabilized by implementing preventive treatment

like application of Duraphat (high concentrated fluoride) and oral hygiene instructions. This approach provides positive dental experience to patients. Furthermore, it reduces their dental anxiety [40].

Overall, it is recommended that patients of age six and older with a high risk caries status should have a recall of every three to four months [33]. On the other hand, the Dental Health Services, Victoria 2012 report stated that an average recall interval for a high risk patient is 10.7 months [32]. Furthermore, the public dental services of Australia should focus on MID approach rather than on invasive procedures. Calache, et al. [41] reported that the public sector of Australia emphasise more on extraction of teeth rather than on preventive approach [41,42].

Conclusion

Dental caries is considered as a lifestyle associated chronic disease. It impacts the oral and general health of patients. Unfortunately, the public health system of Australia does not completely address this multifactorial etiology of dental caries. The model of caries management focuses more on surgical interventions, like restorations and extractions. On the other hand, it does not give importance on prevention and early interception of dental caries. This approach is not cost-effective. It contributes to inefficient use of resources and increases the waiting time for dental treatment required for patients. Furthermore, it may have negative impact on the oral and general health of patients. The implementation of MID approach may contribute to resolve these issues.

MID approach enhances oral health, general health and quality of life of patients. It is an holistic based approach to manage dental caries. This approach means to manage the cause and symptom of the disease. It motivates the patients for effective management of oral disease, avoids the need for complex restorations, and retains the natural dentition for a longer period of time. Furthermore, it increases patients' tolerance to receive dental treatment which contributes to reduce anxiety in treatment of dental decay.

In relation to this case study, it has been concluded that MID is an effective approach which may contribute to manage caries in a child with dental anxiety. This approach seemed to build up a trustworthy relationship between the patient and clinician. It may have contributed to acclimatise the patient with the dental environment. Overall, it would indicate that the MID approach gained patient's compliance and reduced dental anxiety in the management of dental caries.

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