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Review Article

A literature survey on maintenance of oral health among children

Shivam Dubey [1]*

[1] *Rani Durgavati Vishwavidyalaya, Jabalpur, Madhya Pradesh, India*

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ABSTRACT

Dental hygiene influences general well-being and standard of life. Oral health and illness are significantly influenced by socio-behavioural and environmental variables. Dental caries is on the rise in developing nations, and youngsters are particularly vulnerable to the disease's negative effects. Accurately identifying high-risk groups is becoming increasingly important in order to start prophylaxis early. Utilizing high-risk and population-based methods, it is also essential to investigate how early childhood intervention affects dental and overall health.

1. Introduction

According to Petersen,[1] oral health is more than just having healthy teeth; it is also vital to overall health and well-being. It has been established that oral health and overall health are related. Despite the undeniable gains in overall health, the prevalence of dental illnesses, particularly caries, is still high in children.[2] For instance, hyperglycemia is linked to severe periodontal disease.[3] Common risk factors are the main cause of the high link between a number of oral disorders and chronic non-communicable diseases.[4] Nutrition and oral health work together harmoniously.

In addition to having an effect on diet and nutrition status, oral infectious diseases and acute, chronic, and terminal systemic disorders with oral symptoms also affect the functional ability to eat. According to the U.S. Department of Health and Human Services,[5] nutrition and diet are important multi-factorial environmental factors in the aetiology and pathogenesis of oro-facial diseases and disorders. They may also affect how the oral cavity develops and maintains its integrity, as well as how disorders of the oral cavity advance.

Despite significant progress made in improving the oral health of people worldwide, issues still exist in many areas. Numerous epidemiological investigations have demonstrated the significance of both environmental and socio-behavioural variables regarding dental health and disease.[1] Few populations are immune to the consequences of dental caries, which is a worldwide illness. Populations at high risk of dental caries have been identified as a result of widespread pediatric dental caries reduction in affluent countries. According to Gravix and Holloway,[6] these communities have not profited from preventative efforts and are frequently denied regular access to healthcare institutions. The communities frequently have low socioeconomic level, a high proportion of minority ethnic groups, and poor living and general health conditions.[7]

2. The Paradigm of Oral Hygiene in Developing Nations

Dental caries is on the rise in developing nations, and youngsters are particularly vulnerable to the disease's disadvantages.[8] The need to precisely identify high caries

* *Corresponding author.*
E-mail address: shivamdubey20@gmail.com (S. Dubey).

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risk groups, start prevention early, and investigate the impact of early childhood intervention on general and dental health using both population and high-risk approaches is becoming increasingly recognized on a global scale.[9] The following are important factors to take into account: nutrition, including the use of sugar and fluoride; the composition and activity of the oral microflora; the social and cultural aspects of child development, such as family stress and the access and utilization of health services; and an awareness of the biological and behavioural effects on health. Published studies have examined cross-sectional and some longitudinal relationships between important risk factors and children's dental caries development.[10]

Yet, little is understood about the vertical interactions in the pattern between molecular and psychosocial influences, especially within and between children from disadvantaged or ethnically diverse backgrounds who live in poverty, especially in developing nations. Some of the unique risk factors for caries in infants and young children are believed to include the needs of parents to manage the dietary transition through breastfeeding, bottle feeding, first solids, and childhood tastes; newly erupted tooth surfaces that may exhibit hypoplastic defects; and developing bacterial flora and host defense systems.[11]

3. Oral Care Starts from Childhood

According to data from research conducted in the U.K. by Northstone et al.[12] parents fail to follow weaning recommendations, which causes children to suffer from obesity, dental disease, and nutritional inadequacies. Breastfeeding and the use of sweetened beverages are inversely correlated.[13] It came to the conclusion that compared to infants who were not breastfed, breastfed infants consumed fewer sweetened beverages and added sugars. From the standpoint of public health, breastfeeding disparities must be decreased by sustained promotion of breastfeeding. Additionally, preventing excessive use of sugar-sweetened beverages should begin in childhood. Given that 20% of children under the age of 14 months had Mutans streptococci, newborns from low-income families are more likely to ingest sweetened beverages than milk at an earlier age. This suggests that colonization may start younger than previously thought in preschool-aged low-income children. Additionally, newborns that drink milk instead of sweetened liquids in bottles seem to have a lesser chance of colonizing Mutans streptococci.[14] Consuming more soft drinks is negatively correlated with milk consumption, which lowers calcium intake, which is negatively correlated with body mass index.[15] In many regions of the western world, obesity is the most prevalent nutritional condition, and like dental caries, it is more likely to harm underprivileged children.[16]

Despite being completely preventable, tooth decay is still a public health concern, but the loss of dental hard tissues due to acid erosion is becoming more significant. Dental erosion is common in children aged 18 months to 54 months in the United Kingdom, according to data from the National Diet and Nutrition Survey. Too much sugary food and drink is the primary cause of tooth erosion and dental decay in this age group.[17] Additionally, research on a cohort of kids from the U.K. national survey of kids' oral health aged 5 to 15 suggests that kids' tooth erosion may be on the rise.[18]

Similarly, compared to ten years ago, gum disease and poor oral hygiene are more common among young people today. The prevalence of dental caries has been significantly impacted by fluoride in toothpaste, however based on these data alone, brushing your teeth appears to be less successful at eliminating plaque and avoiding gum disease. Regardless of the degree of disadvantage, data from multiple nations have demonstrated that brushing twice a day, beginning before the age of one year, and with parental participation doubles the chances of being decay-free. The results of improving parenting techniques to lower dental caries in kids from underprivileged neighbourhoods require more investigation.[19] The pH and content of saliva, plaque, and teeth are all directly and locally impacted by diet, which also plays a significant etiological role in dental caries and erosion.[20]

4. Lifestyle Significantly Affects the Oral Health

According to Young et al.[21] dental erosion is a complicated multifactorial disorder that is characterized by an irreversible loss of tooth hard tissue brought on by the chemical influence of intrinsic and extrinsic acids without the presence of microorganisms. Children and young adults now have a significantly higher incidence and prevalence of tooth erosion.[22] Due to the increased intake of acidic foods and fizzy drinks, lifestyles have evolved throughout time.[23] Soft drink use has been linked to tooth erosion,[24] and dietary acids are one of the most frequently mentioned causes of erosion.[25] All age groups' dental health is probably impacted by the changes in food culture. Daily consumption of acidic foods raises the likelihood of erosive tooth wear as people age. However, little attention has been paid to erosive tooth wear, particularly in Asian countries. A recent study in Japan by Kitasako et al.[26] evaluated the relationship between erosive wear and acidic behaviours and found that frequent consumption of acidic fruits and beverages was highly linked with erosive tooth wear at various age groups. There is no question that severe erosive tooth surface loss can result in issues including pain, dentin hypersensitivity, or even pulpal inflammation, which may lead to tooth loss, if steps are not done to avoid the loss of dental tissue.

According to O'Mullane and Parnell,[27] poor oral health in early childhood is a major public health issue. Children under six who suffer from rotting teeth and early childhood caries may also have difficulty eating and feeding, which

can result in poor weight growth and a lower quality of life, in addition to pain and discomfort.[28,29] According to reports, early childhood caries prevalence ranges from 6% to 90%, with the majority of wealthy nations at the lower end of this range and poor nations at the middle to upper end.[27] Multilevel factors affecting children's oral health at the individual, family, and community levels have been presented in Fisher-Owens et al.[30] conceptual framework. Parents and other caregivers, with whom children spend the majority of their time, act as primary mediators of family level influences. During this time, parents' oral health knowledge, attitudes, beliefs, and practices have a direct or indirect impact on routine, nutritional, and health behaviours.[31]

5. Nutrition Plays a Crucial Role in Maintenance of Oral Hygiene

Nutrition is a critical component of dietetics and other health professional education programs, as well as in the training of oral health professionals, according to a joint World Health Organization and Food and Agricultural Organization expert recommendation.[32] Oral nutrition and health professionals should be in charge of promoting this dual program discipline among health care providers. In order to promote health promotion and preventative activities that support oral health and nutrition as they relate to general health, oral health and dietetic professionals must establish networks with other members of the healthcare team, such as physicians, nurses, speech and language therapists, etc. A thorough oral health module should be included in dietetic students' didactic and clinical training since mastication and digestion depend on a healthy, functional oral cavity. Finding nutrition- and diet-related risk factors for oral health and referring patients to an oral healthcare professional for any aberrant findings should be among the outcomes. International research has recognized the necessity for oral health practitioners to assist with patient referrals.[33] In order to demonstrate their proficiency in oral examination, oral risk assessment, nutrition, and diet recommendations and interventions, dietetic students should be given the chance to collaborate with dentistry students in oral health settings.

6. Collaborative Efforts of Parents and Professionals can do Wonders

According to the World Health Organisation, developing measures to prevent dental caries and enhance oral health requires an understanding of the factors that influence oral health behaviors. Therefore, it seems crucial to comprehend the social value that communities and parents place on primary teeth in order to promote preventive interventions.[34] This is followed by the need for the collective efforts of all the professionals who are in charge of preserving and reestablishing oral health.

As guardians and stewards of the health of subjects during their formative stage, paediatricians play a crucial role. In order to help their children adopt healthy and well-being-promoting habits, parents play a crucial role. In actuality, parents meet their children's needs by giving them attention and defense. A few suggestions for enhancing a child's oral health include enrolling them in a dental clinic, preferably by the time they are a year old. It is important to set up and adhere to a dental regimen for the child. Teaching your child to spit rather than swallow and brushing under supervision at least twice a day with a soft toothbrush that has been recommended by an expert and a pea-sized amount of fluoride toothpaste should be the minimum standards for this. Conversely, parents can be counselled to limit the frequency of foods with added sugars while suggesting low-sugar snacks for the youngster, such as fruits, cheese, etc.

Additionally, it is not recommended that kids use feeding bottles with beverages that have additional sugar. Moreover, defined diagnostic criteria and tools should be used to do a timely clinical carries risk assessment. In addition to parents, dental professionals should offer guidance on dentally safe nursing. Furthermore, non-dental health professionals like general practitioners, paediatricians, nurses, preschool teachers, community workers, etc., should be encouraged to participate in oral health promotion programs for families and young children.

7. Conclusion

To help teach dental health, promote behavior change, and develop and execute programs for supervised toothbrushing in daycare and preschool settings, preschools could also use brief counseling techniques like motivational interviewing. They could also create conditions that promote healthy dental hygiene habits in preschoolers by providing wholesome foods, such as lunchbox guidelines and breaktime snakes.

In order to remove the physical, cultural, racial, ethnic, social, educational, environmental, and healthcare delivery barriers that keep people from attaining oral health, as well as to promote and fund relevant research that looks into novel approaches to enhancing oral health for the country, partnerships between national dental organizations, local and national governmental structures, and the private sector are required. Dietitians with an understanding of oral health and associated public health programs have the opportunity to bring nutrition into the field of oral health, which could be a helpful teaching tool. People with oral health issues will receive complete health care thanks to these cooperative efforts in research, teaching, and service delivery.

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9. Conflict of interest

None

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Author's biography

Shivam Dubey, Research Scholar https://orcid.org/0000-0002-2704-4260

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