



The impact of modern dietary habits on the prevalence of tooth decay in children and adolescents

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Abstract

Tooth decay is probably the most common health issue in children and adolescents and is consequently recognized as a major health concern that is closely linked to the changing lifestyles and modern dietary habits. The extensive consumption of fast food, sodas, and processed sugars among this age group, coupled with the very poor adherence to preventive oral hygiene practices, has drastically increased the incidence of decay. Even though science has made great progress in understanding the mechanisms of decay and prevention methods, a significant gap still exists. This study is a focuser of the problem by reviewing scientific literature, analyzing the associated dietary, behavioral, and social factors, and exposing the strong impact of modern dietary habits on the increased prevalence of decay among children and adolescents. It further investigates the effects of fermentable sugars, frequent snacking, and soft and energy drinks on enamel erosion and plaque formation. Additionally, it looks into the role of family and child health knowledge, as well as the application of preventive measures such as brushing and fluoride use. Scientific reviews have shown that there is a very close relationship between modern dietary patterns and tooth decay thus early health education, good eating practices, and active participation of schools, families, and health institutions are all essential to dealing with the problem. The writers of this study assert that overcoming the negative effects of modern dietary habits on children's and teenagers' dental health will take a coordinated effort in the form of health education and preventive strategies, modifying dietary behavior, and supporting health policies that limit the availability of foods harmful to dental health.

Keywords: Tooth decay, children, adolescents, modern dietary habits, sugars, soft drinks, oral health, prevention

Introduction

The health of the mouth and teeth is an essential part of human health's totality and the quality of life. It is a matter of health, functionality, social status, and psychological well-being, extending from the mere beauty aspect. According to global health authorities, dental caries is the second most common disease in the world affecting children's and adolescents' teeth the most. In some statistics, it is even more prevalent than many other chronic diseases in this age group. Tooth decay is a multifaceted public health issue with varying children's and adolescents' biological, behavioral, nutritional, social, and economic factors working toward and against each other. The fight against it also requires a similar comprehensive fining down of the various factors affecting it from its root cause to the cure of the resulting problem imprinting activities inclusive of

prevention, behavior modification, and education besides the curative care aspect.

The last few decades have seen the lifestyles of the young people in different parts of the world undergo a total metamorphosis. Major global changes, such as the outbreak of urbanization, the setting up of large-scale food processing units, and the spread of digital technology have brought about totally different daily eating habits. The young are now increasingly among the frequent users of soft drinks and those who consume artificial sweeteners, the fast food culture has reached them, and through processed foods, which are made up of simple sugars and rapidly fermenting carbohydrates, they are getting more and more hooked on such unhealthy diets. The young are now more and more also getting advertising and good temptations to access and consume foods that are not healthy for their teeth, all this through marketing, easy access, and low

price as compared to the healthier options. This dramatic shift in eating habits has affected not only general health, weight, and growth but has also had a direct and obvious impact on oral and dental health, more specifically on the prevalence of teeth decay in the young (Kidd, 2010; Schwendicke et al., 2016).

The seriousness of the problem is not only limited to the occurrence of tooth decay, but that its effects reach also to the chronic pain, difficulty in chewing, and eating disorders, and poor performance in school painful or because of lack of sleep. Moreover, it also has a negative effect on the self-confidence and the self-image of children and teenagers, as they are forced to deal with the aesthetic problems that come along. If not treated, tooth decay can cause major complications like unbearable pain and infections, loss of teeth before the right age, and wrong jaw posture in the future resulting in the health and cost burden on the family and the medical system. Even though there have been major improvements in dental treatments and methods for prevention and control, the prevalence of cavities in kids and adolescents still remains to be treated as a case of poor dietary and preventive habits among this group.

In this context, it should be made clear that the association between the diet and tooth decay is not a simple one or just a matter of rate, rather, it is a complicated one. The diet is a key player in every stage of the process of tooth decay: plaque formation, acid production, and demineralization of the tooth surface with the factors of repeated and continuous exposure to sugar throughout the day especially so. Food type, how often is it eaten, and how long does it stay in the mouth are some of the major things that decide its effect on the dental health. The recent eating habit has seen the sugary snacks becoming the most important part of daily routine for the kids and the young people plus the increasing dependence on soft drinks, energy drinks, and artificial juices leading to more frequent contact with the acid that destroys the enamel hence higher rate of decay (Pitts et al., 2017; Reisine & Litt, 1993).

Furthermore, the role of social, economic, and cultural factors in shaping children's dietary and health behaviors cannot be overlooked. The level of family awareness, its role in guiding dietary habits, and the extent of adherence to preventive measures such as regular brushing and the use of fluoride toothpaste are all influential factors in protecting children from tooth decay or exposing them to it. Schools, media, and modern technology also play a dual role, either promoting healthy behaviors or reinforcing unhealthy ones. With the proliferation of electronic devices and decreased physical activity, lifestyles have become more sedentary, which in turn has led to an increase in the consumption of unhealthy foods at the expense of healthy ones.

Considering the significance of this health issue, this study intends to uncover the effects of modern eating habits on the occurrence of tooth decay

in children and adolescents, as a present-day health issue that deserves considerable research and public attention. The study will investigate the characteristics and types of these modern diets, point out the scientific ways that relate diet and tooth decay, look into the behavioral and social factors contributing to the issue, and bring to the forefront the need for health education and preventive measures to contain the incidence of this ubiquitous illness. Additionally, the study puts forward an analytical review of the pertinent scientific literature, with the intention of obtaining a clearer picture of the problem and devising a comprehensive framework that would enable healthcare decision-makers, dentists, families, and educational institutions to use effective and sustainable interventions.

This research is a part of the scientific community's efforts to advocate for better oral health of the younger population by making it clear that the decay battle cannot be won by treatment only. It starts with identifying the contributing dietary and behavioral factors and working to change them through a blended approach of awareness, educational, and health programs that help building a more knowledgeable and healthier generation, one that can practice good dietary habits, won't fall sick easily, and will live a better life.

Modern Dietary Habits among Children and Adolescents

Recent years have witnessed a radical shift in the dietary patterns of children and adolescents as a result of a complex interplay of social, cultural, economic, and technological factors. Food is no longer merely a means of fulfilling physiological needs; it has become intertwined with lifestyle, personal preferences, media influences, and the development of the food industry. These transformations have led to the emergence of new dietary habits that differ significantly from traditional patterns, which were more balanced and varied. These changes have had broad health implications, most notably an increase in tooth decay, obesity, and metabolic disorders among children and adolescents. The manifestations of these modern habits can be examined through several key themes:

The Spread of Fast Food and Sugary Drinks

Fast food and sweetened beverages are the most evident dietary moderns of children and teenagers. Their consumption has turned to be a daily habit because they are easy to find, tasty, available in many forms, and are often cheaper than home-cooked healthy meals. The range of these foods is vast as they include processed meals, sweets, chocolate, potato chips, processed pastries, manufactured juices, soft drinks, and energy drinks, which are all so on-trend with the youngsters.

These come with high amount of simple sugar, fast-fermenting carbs and unhealthy fats besides the use of preservatives and artificial flavors thus being a direct reason for the significant rise in the number of tooth decay cases. The oral bacteria that are

responsible for the acid attack on tooth enamel are fed with sugar and the constant intake during the day extends the exposure of the teeth to the acids. Besides, sugary drinks have a great tendency of sticking to the tooth surface, remaining in the mouth for a long time, especially when consumed between meals or just before sleeping.

The peril in these practices is not only in the fact that they have become our regular food culture but also in the fact that they have been such a big part of our daily lives. Children and teens are the biggest consumers of these products in schools, during sports, and even while watching TV, which makes their negative influence on oral and overall health even worse (Zero, 2004; Schwendicke et al., 2015).

The Role of Technology and Screens in Changing Eating Habits

The modern world is a different place, thanks to technology, and this is not only about the adults whose daily routines have changed quite a lot, but also the kids and youths whose lifestyle is almost entirely based on the new gadgets that they use daily, together with the internet access they enjoy. One of the consequences of this tech dependency is a total shift from active to inactive lifestyles, and also a rise in the consumption of sugary items and drinks among those who are glued to their screens for long periods.

The correlation between the time spent on screens and unhealthy diets has become undeniable. It is a common practice among children to have their meals while watching their favorite shows or playing their favorite games, and this results in overeating and lack of control over the type and amount of food consumed. In addition, the constant mental distraction caused by screen time not only reduces the feeling of fullness but also delays the brushing of teeth after meals, thereby increasing the time during which food and sugar residue might stay in the mouth.

Moreover, the use of mobile apps and delivery services has made obtaining quick and easy access to unhealthy and sugary foods a matter of just a touch, leading to children's and adolescents' increasing dependence on such products rather than on healthy, home-cooked meals. This combination of technology and nutrition has led to the deepening of an unhealthy lifestyle that relies on convenience, speed, and instant gratification at the expense of long-term health (Petersen et al., 2005; Pitts et al., 2021).

The Impact of Food Advertising on Children

The influence of commercials over the food selections of kids and teens is tremendous. Food corporations have come up with very smart and innovative marketing tactics that communicate directly to this young age group using appealing colors, cartoon characters, famous people, games, and giveaways with food. This is the reason why kids are more inclined to feel these products and even form a bond with them.

To a large extent, the advertisements are directed towards the consumables that are rich in sugar, fat, and artificial flavors by accentuating the good side and instant satisfaction while neglecting their negative health impacts. The volume of the advertising is so huge that it is done through television, it is done through social media, and it is done through video sites, and the young ones are perpetually getting the messages that lead them to consume these products (Loesche, 1986; Rosier et al., 2014).

Advertising influence on kids does not end here as they along with their parents form a consuming unit. Kids a lot of times, persuade their father and mother to get them these products. Gradually, these products become a part of their regular diet, and the risk of tooth decay mounts up due to the constant exposure to sugars and sweetened drinks.

Daily Meal Patterns Have Changed Compared to the Past

Daily meal patterns have undergone a significant change compared to the past. Previously, meals were more regular and balanced, relying more heavily on fresh, home-cooked food. Today, meals are often irregular, with the prevalence of fast food replacing main meals and an increased reliance on sugary snacks between meals.

A hefty portion of the younger demographics, i.e., children and teenagers, has not been able to stick to the healthy breakfast that they usually have, but instead, they have replaced it with sugary drinks or very sugary packaged products. The situation is such in many working-class families where the eating together as a family during a meal has been pushed aside for the instant food circuit owing to the lack of time and the parents being busy, hence, there is no supervision to children regarding their diets.

The adjustment in eating habits has caused a higher intake of sugars throughout the day, which is the main reason for teeth to decay. Eating and drinking continuously and at intervals exposed the mouth to acidity for a long time, making the teeth vulnerable to decay and cavities.

At last, it is clear that modern eating habits of children and teenagers are not just a temporary change but are rather the result of a complicated interaction between culture, economy, technology, and media, which have all played a role in making the unhealthy eating habits that negatively affect the dental and oral health to be gradually accepted. Therefore, the identification of these habits and the analysis of their aspects are the primary steps in the development of successful strategies for children and adolescents sometimes and for the future in the case of the health issue since the health issue is preventiveness and improving still needs their being well identified and analyzed (Marsh, 2003; Zero, 1999).

The Biological Mechanisms of the Link Between Food and Tooth Decay

Tooth decay is a biological and chemical process that takes place in the mouth and can be caused by several factors such as bacteria, diet, saliva, and teeth condition. Sugars are often thought to be the main cause of tooth decay but in reality, the process is very complex and involves a number of different reactions taking place within the oral cavity. Decay sets in when teeth are subjected to an acid environment which is formed by the metabolism of certain bacteria that feed on the sugars found in food residues in the mouth. Eventually, if the acid attack continues, the enamel will undergo demineralization and the decay will progress to the formation of cavities. To scientifically understand the connection between diet and tooth decay, we need to look at the main aspects of the process: bacteria, sugars and carbohydrates, acids, and sugar consumption frequency vs. quantity.

The Role of Oral Bacteria in Decay Formation

The mouth is home to millions of microorganisms, and their existence is an integral part of the oral microbiome. However, the issue arises when specific types of cavity-causing bacteria like *Streptococcus mutans* and *Lactobacillus*, get their hold on the tooth surfaces, coalescing into what is referred to as dental plaque. Dental plaque is a soft and sticky layer that forms on the teeth and sustains bacterial activity and multiplication, particularly when sugars are present.

The secretion of enzymes is among the ways bacteria get acquainted with the tooth and it also leads to the formation of a complex network of biopolymers, making the bacteria's environment within the plaque more protected. These bacterial colonies, once established, start interacting with the food particles left in the mouth, predominantly sugars, and producing strong acids that can dissolve the minerals in the enamel. The number of these bacteria and the duration of their stay on the teeth without being cleaned determine the level of tooth decay and its progression (ten Cate & Featherstone, 1991; Pitts, 1983).

The Effect of Sugars and Fermentable Carbohydrates on Enamel

Sugars and fermentable carbs are the main contributors to tooth decay. Sugary foods such as sweets, sodas, sweetened juices, and processed pastries not only provoke the craving for sugar but they also supply the bacteria with energy. The bacteria metabolize the sugar into acids, which is a critical mechanism for the demineralization of teeth. Simple sugars such as sucrose, glucose, and fructose are rapidly absorbed and immediately interact with the bacteria, which makes them even more damaging than the complex carbohydrates. Moreover, sticky foods such as caramel, chocolate, and some gummy candies stay in contact with the teeth for a longer period, thus prolonging the exposure of the enamel to sugars and bacteria. Eventually, this leads to a cycle of destructions that slowly but surely undermine the tooth structure (Pitts et al., 2013; Kidd & Fejerskov, 2004).

The Role of Acids Produced by Bacterial Metabolism

Bacterially induced acids top the list of responsible agents for tooth decay by a large margin. Sugars fermented by bacteria yield lactic acid among others, and consequently, very acidic mouths are created with a pH of less than 5.5 – the critical pH for enamel demineralization. In fact, the visible signs of acid attacks on the enamel surface occur when the pH drops down to 5.5 or below since that is the point where demineralization starts.

Tooth demineralization is not a straightforward process and it takes the interplay of several factors including the oral environment, bacterial load and biofilm composition among others. Enamel, although mainly composed of mineral crystals, still loses a certain amount of its mineral content every day due to the acidic environment created by the normal metabolic activities of the bacteria present in the mouth. And when this happens repeatedly and there is not enough time for the enamel to recover through remineralization, the enamel becomes soft, and fragile, thus, requiring less force to rupture. If no preventive measures such as tooth brushing, fluoride, or dietary changes are undertaken, the cavity that will eventually involve the dentin and pulp of the tooth will be formed.

The Frequency vs. Quantity of Sugar Consumption and Its Effect on Teeth

The myth about sugar quantity being the only main contributor to tooth decay is very widespread. Nonetheless, scientific research shows that the consumption frequency of sugar is the biggest factor. It is less harmful to eat a lot of sugar at one time than to take small amounts of it frequently throughout the day. Every time sugar is eaten, the mouth's pH drops, and it takes time for the mouth to get back to its normal condition through saliva, which neutralizes acids and balances the minerals in the teeth (Mjör & Toffenetti, 2000; Ghodasra & Brizuela, 2023).

Nevertheless, if sugar is ingested constantly, for instance through eating sweets in between meals, drinking soda all the time, or even sucking on candies while watching TV, then the mouth will not recover and remain in a prolonged acidic state. One of the most major causes of tooth decay is this continuous exposure to sugar, even if the amount is relatively small.

The connection between nutrition and dental caries is not a clear-cut one; it is a biocomplex process where the oral flora first interacts with the sugar and then the acids produced as a result of this reaction attack the enamel. The decay is modified with the repeated intake of the sugars because of the ongoing acidic condition in the mouth. The knowledge of such biological mechanisms leads us to understand the perils of the current dietary habits, and it also emphasizes the need for preventive measures and educational interventions to control the occurring of

tooth decay among children and young adult people (Carvalho et al., 1992; Nyvad & Fejerskov, 1986).

Figure 1: Childhood Tooth Decay Crisis Influencing Social and Behavioral Factors

It is not only biological and nutritional factors that can account for the occurrence of tooth decay in kids and teenagers. Aspects of social and behavior communicate the gospel of tooth health and therefore, they determine the practicing of daily health habits and nutrition too. Children are not living in a vacuum; they are receiving influences from their parents, teacher, neighbors, and even cultural and media influences. So, the rat-footed and slippery situation of tooth decay among kids needs a social context in which child finds himself or herself, awareness level of surroundings, available health support level, and imposed or gradually acquired lifestyle analysis. The factors can be analyzed through several key axes:

Family Awareness of Oral Health

Home is the very first and most important place where a child forms their health and nutrition habits. Parent's knowledge about dental health is a factor that determines directly the occurrence or prevention of tooth decay. Families that are knowledgeable understand the need for brushing teeth regularly, keeping sugar intake to a minimum, visiting the dentist regularly, and helping the children to incorporate the healthy habits right from the beginning. Health awareness within families is leading to oral health neglect, no proper behavioral guidance and disregarding dental problems until they get worse, painful and serious (Daramola et al., 2009; Wolfowitz-Zilberman et al., 2021).

Some families are under the impression that decay of teeth in kids is a natural phenomenon or a "passing phase," particularly in primary or baby teeth, not realizing that it affects the later or permanent ones and the whole oral health of the child in the future. Along with this, there are some families that treat oral health problems only when their child is in pain, which is the opposite of a preventive strategy that relies on awareness and health education. On top of this, the parents' educational background and health literacy are factors that play a huge role in their commitment to the right steps of brushing, choosing a suitable fluoride toothpaste, setting up regular meal and bedtimes, and avoiding sugary foods and drinks just before bedtime with their children (Ben-Zaken et al., 2021; Zhu et al., 2023).

The Family's Socioeconomic Background

The socioeconomic status of a family is one very important factor that can determine the level of oral health in children and adolescents. Better-off families generally have better access to regular healthcare and high-quality oral care products as well as a relatively balanced diet. On the other hand, low-income families have a hard time financially and,

therefore, tend to buy cheaper foods that are often high in sugar and fat, and low in nutritional value.

The economic situation being poor could be among the main reasons that a family does not visit the dentist often, thereby leading to the development of more serious health problems untreated. In addition, some social settings might not have a good health culture, where oral health is thought of as the last priority after overall health. Consequently, there is little or no preventive care. Moreover, some families may be experiencing a great deal of work-related stress, pushing them for time, and having to deal with life's ups and downs, which can have a detrimental effect on their ability to monitor their children's health and nutrition. It is thus evident that oral health is not simply a matter of an individual's choice but a depiction of a whole social and living situation reality (Takenaka et al., 2019; Chatzopoulos et al., 2022).

Healthy Habits, Such as Brushing and Fluoride Use

Lifestyle habits are one of the most critical prevention methodologies against dental caries. Daily brushing with a children's fluoride toothbrush and toothpaste is very important in getting rid of plaque and preventing the growth of bacteria that cause cavities. On the other hand, a big number of kids and teenagers do not practice this daily habit properly and on a regular basis, either because they are careless, do not know, or their parents are not watching over them.

Also, using the wrong or unsatisfactory brushing techniques can do away with the protective impact of hygiene. Fluoride is a mineral that helps teeth become stronger and increases the enamel's resistance to acids. However, the knowledge of its use is not the same for all families. Some families do not know its function and advantages, while others may amplify their fear of using it because of misinformation.

Among the numerous habits that people usually do and that can be very unhealthy, one of the most prevalent and also the worst ones is eating before going to bed and not brushing one's teeth. The sugar that is left in the mouth overnight, due to the diminished saliva production, creates a very good condition for the bacteria to thrive and for the tooth to decay faster. Constantly sucking on sweets, having sugary snacks quite often, and not going for regular dental checkups are some of the factors that together or separately will very likely lead to cavities (Yang & Kang, 2020; Isola, 2020).

The Role of School and Community in Shaping Eating Habits

The family's influence on the children is not the only one. The school's and the whole community's responsibilities are equal. In fact, schools are the first ones to take the role of being educational institutions that teach kids how to take care of their teeth properly and what oral hygiene practices to follow. Schools can further students' health awareness and behavior by

providing dental health education, counseling on the threats of sugar consumption, and hygiene promotion initiatives through the school programs. Besides, schools can also help to create a positive environment by running awareness campaigns, working in partnership with the dentists, and offering healthy foods in the school cafés.

In the case of some schools, they might be a factor in selling unhealthy foods like candies, soft drinks, and potato chips and at the same time encouraging kids to eat those foods every day. Society in general, along with the media and health institutions, has a large share of the responsibility to create and cultivate a culture of oral health, provide the public with the right awareness messages, and fight against misleading advertisements that promote unhealthy foods without warning the public about their negative health effects.

The social and cultural environment also play a significant role in determining a child's perception of oral health. If the general culture regards dental problems as of little importance or thinks that going to the dentist is not necessary unless the pain is really bad, then the behavior of children and adolescents will be negatively affected, and this might lead to further problems.

It is evident that social and behavioral factors partly explain the high incidence of tooth decay among children and adolescents. Family lack of awareness, poor economic situations, unequal habits, and the weak role of schools and the community in raising awareness are some of the reasons that make children more prone to cavities. Hence, solving the problem is not just about medical or nutritional intervention but also an all-encompassing social and educational approach that emphasizes the importance of health awareness, changing behaviors, and providing a supportive environment that helps protect the oral health of future generations.

Figure 2: How to address tooth decay in children and adolescents

Preventive and Awareness Strategies to Reduce the Problem

Tooth decay in children and adolescents is a public health problem that can be significantly reduced if effective preventive and awareness strategies are implemented that target the root causes of the problem, not just its symptoms. Prevention here relies on three integrated dimensions: the educational and awareness dimension, the behavioral, nutritional, and health dimension, and the organizational and community dimension. Addressing this problem requires organized cooperation between families, schools, health institutions, and decision-makers so that oral health becomes part of the general health culture of the community, and not just a limited individual responsibility. The most important preventive strategies can be addressed through the following points:

The Role of School Health Education

The schools are mainly responsible for developing children's healthy habits, as they are the most powerful educational and developmental environments that last for several hours a day and cover the most sensitive age group in the development of the behaviors and habits. That is why the health education in schools takes up the most important part of the prevention of tooth decay. Schools are no longer only places for academic learning but also institutions in which health values are instilled in students and they are guided towards positive and sustainable habits (Kumar et al., 2021; Oluwasina et al., 2019).

Schools could help in the fight against tooth decay by implementing the oral health topics not just in the curriculum but also in the after-school programs and other activities. This patently includes the teaching of the structure of teeth, the decay process, the importance of fluoride toothpaste use, and controlling sugar intake. Regular lectures can be arranged with dentists for raising awareness among the students and conducting periodic dental checkups at schools for diagnosing and treating dental issues at the earliest stage.

In addition, the food environment of the school strongly influences the dietary habits of the students. Thus, an important step in the promotion of oral health is the restriction of the sales of carbonated drinks and sweets in the school canteens accompanied with the provision of healthier alternatives. Schools can also be a place for parents enlightenment through school meetings and information materials; thus, the collaboration between the school and family in the reinforcement of healthy eating habits will be easier (Yang et al., 2020; Milutinovici et al., 2021).

Modifying Eating Behavior in Children and Adolescents

Changing eating habits is one of the most effective ways to prevent tooth decay, considering that the problem's dietary practices directly influence its occurrence. The children will not be deprived of any food, the aim instead is to let them develop a good nutritional awareness that will allow them to make smart and healthy choices. Reducing sugar intake is one of the main points of the plan, particularly sticky and easily fermentable sugars, limiting soft drinks and watching the amounts of sweetened drinks, and moreover, making the children consume lots of fruits, vegetables, and calcium as well as vitamins that are good for healthy teeth.

Setting mealtimes and eating small amounts of candy between meals or right before going to bed are other methods used that help prevent the mouth from becoming acidic and, therefore, help reduce the number of bacteria as well as the production of acid. Children should also be trained in healthy eating habits at an early age, and they should be continually told that dental health is an integral part of overall health and a non-negotiable issue.

Changing eating habits is not only a child's task; it's also necessary that parents learn how to pick healthy food, read nutrition labels, and avoid giving sweets as entertainment or rewards. A child's chance of sticking to good habits is proportionately related to the family's level of awareness and knowledge of food's impact on oral health (Shalan & El-Rashidy, 2023; Sedigh-Rahimabadi et al., 2017).

The Role of Dentists and Public Health Programs

Dentists are very important in the healthcare system because they provide treatment and they also prevent diseases by educating patients, giving them information, and allowing them to have healthy oral and dental habits. The dental clinic is not just a place for traditional treatment; it is a dental and health learning environment that is intimately connected with the child and their family on one hand and with scientific medical knowledge on the other. In this health-promoting environment, the dentist has the power to influence a child's health behavior, directing them towards the adoption of good habits that they will carry with them throughout their lifetime.

Dentists can help a lot in keeping the teeth healthy because they have so many different measures to offer. One of the most important is to make kids and their parents aware of the health benefits, tell them about the harm of neglecting the mouth's hygiene, give the kids practical demonstrations of how to brush their teeth and use fluoride toothpaste correctly, and talk about the importance of brushing one's teeth at least twice a day. Children's acclimatization to the clinic is also a good way to make sure that they are not hesitant to adopt healthy skills, since the dentist can evaluate and modify the child's procedure right away.

An oral hygienist's primary duty is cleaning, but a nutritionist's is guiding. They inform the whole family about the repercussions of bad eating habits, especially the overindulgence in sugars, sweetened drinks, and fast food, while at the same time teaching about healthy alternatives and advocating a diet that is not only balanced but also friendly to teeth. Besides that, dentists still do not forget to highlight regular checkups as ones that should be done without fail since they are the most important for finding oral problems early when they are still small and not difficult to treat. This helps preserve natural teeth and reduces the need for complex and painful treatments.

At the local community level, public health programs are equally essential, as they support the dentists' efforts in the clinics. Establishing health policies that are aimed at preventing and controlling the decay of teeth through the preventive and control measures is the main guiding cue for these programs that are carried out by government and private health entities. Public health initiatives consist of a variety of media campaigns that are conducted in traditional media and social media, aware schools and health centers, and service initiatives that offer free or low-

cost early detection services (Sharma et al., 2022; Moghadam et al., 2020).

The implementation of fluoride programs on a wide scale is included in public health programs. The countries where fluoride is added to drinking water and safe topical fluoride treatments are given to children under medical supervision in schools and clinics are two examples of how fluoride is applied. Schools where children receive oral health treatment are especially important in countries offering this service since they continually check the dental health and provide preventive and supportive treatment in the very same school. This makes it easier to reach the kids and guarantees the continuity of the healthcare, thus solving the issue of accessibility.

There are numerous studies and scientific evidence that show prevention has a huge impact, that early awareness programs and preventive dental services lead to a considerable reduction in the number of children suffering from tooth decay. Moreover, it goes hand in hand with pain and suffering reduction and less psychological and social burden related to oral health problems. Besides, investing in prevention is economically the more advantageous option compared to treatment since it prevents the accrual of future healthcare costs that are related to the treatment of advanced caries and its complications. Therefore, effective cooperation between dentists and children's families, along with the support of health authorities for public health projects and programs, represents a fundamental pillar for building a generation that is more aware of its oral and dental health and enjoys a better quality of life (Mishra et al., 2019; Coelho dos Santos et al., 2022).

The Importance of Community Health Policies and Reducing the Marketing of Harmful Products

Efforts by individuals and families will be able to bear fruits only when they are backed by the municipal health policies. The governments and health institutions play a major part in framing the laws and taking measures that would minimize the penetration of the unhealthy food products for children's oral health. The policies are like restricting the advertisement directed to kids that covers sugary food and drinks without stating their health risks, giving health warnings on some products, and in some instances, charging tax on soft drinks with high sugar content to discourage their usage.

Moreover, the policies regarding community health are also a way of ensuring good dental care for all and are taking measures like giving free or low-cost treatments and screenings for the kids of underprivileged families. The Government may also come up with campaigns that promote oral hygiene and health awareness through media, educational institutions, and health centers ensuring that the entire population receives the health message (Delimont & Carlson, 2020; Singla & Jaitak, 2014).

Conclusion

The present-day study has conducted an exhaustive examination concerning the modern eating habits and decay rates in children and teenagers' teeth and has derived the conclusion that the problem is not just confined to the health sphere and is, therefore, a global issue influenced by changing the cultures, economies, and technologies that have characterized the world in the last few decades. The study proved that the changing dietary habits, fast-foods, and sweetened beverage consumption, and snack times in between meals have caused the increase in tooth decay among the children and adolescents to a large extent. In addition, it was shown that the so-called biological and bacterial factors do not contribute to tooth decay solely but, in fact, work in tandem with social, behavioral, and cultural factors which makes the problem more complicated and thus demands multi-level interventions. The results specify that tooth decay is not only a matter of dealing with the teeth but a way of living that requires thorough examination of the behavioral, educational, and health aspects related to it.

The new eating habits are the main contributors for the occurrence of cavity as per the results of the study. Different studies have indicated that the frequent intake of sugar, soft drinks, energy drinks, and processed juices can lead to the formation of cavities due to the increase in the rate of demineralization of enamel. The oral bacteria and their metabolic pathways, which produce acids that result in mineral loss, were identified by the research as a critical factor. The researchers stated that frequency of sugar exposure is the paramount risk factor and not the amount consumed.

In addition, the results showed that not only low family awareness about oral health disease, poor socioeconomic conditions, and poor oral hygiene practices concerning brushing and fluoride application accounted for the high incidence of cavities but also claimed that the schools, communities, and media had a very significant share in their existence. The study also made it clear that one of the factors promoting the unhealthy consumption of snacks was the non-existence of organized awareness programs and the predominance of food ads targeting the kids.

The findings of the research led to a conclusion, which consisted of a comprehensive set of recommendations that if seriously followed and implemented could be a powerful tool in eliminating the problem of dental caries in the young population. Firstly, the researchers suggest giving school health education a stronger role as a catalyst for health awareness at a very young age. This may be done through the integration of structured programs into the curriculum or student activities to familiarize the kids with the processes of tooth decay, the significance of oral hygiene, and the consumption of healthy food. Besides, the study puts forth the suggestion for regular health checks in schools working together with the

health authorities concerned. In addition, it also issues a recommendation to the effect that the part of the family should be made active and that parent awareness should be raised, since parents are the first behavioral models in children's lives. This can be achieved by having family-centered awareness programs, training parents to assess their children's diets, and incentivizing parents to ensure that their children brush their teeth twice daily with fluoridated toothpaste. Moreover, the researchers have pointed out that the setting of regular meal times and the total prohibition of sugary snacks before sleeping are also imperative for maintaining good oral health hygiene.

The intervention proposed by the study encompasses the whole dental health landscape, from awareness and prevention to treatment. Part of this is promoting regular examinations, making sure the little ones receive preventive treatment like fluoride applications and sealants, and educating parents on good nutrition. Ultimately, the research points out that the health and education sector must cooperate closely in the long run and create joint ventures that would make health awareness among the public a regular thing. Likewise, the study lays heavy emphasis on community health policies forming an important part of the solution to the problem.

The measures needed here would be quite drastic, such as controlling the advertising of unhealthy foods aimed at children, which is a very large area of marketing, or designing labels that clearly indicate the dangers of consuming high-sugar products. Moreover, the food industry can be given incentives to produce healthier alternatives which are more palatable to children.

In conclusion, the research asserts that the challenge of tooth decay in the young population can be solved only by transforming the whole approach to patient care in less drastic terms by means of prevention instead of treatment. It also points out the importance of further scientific investigations in this area to spot the trends in people's lifestyles and nutrition and to come up with new strategies that are not only effective but also in step with contemporary times. Consequently, one could say that investing in children's and adolescents' oral health awareness programs is akin to investing in the health of the community as a whole, creating a generation that is health conscious and capable of protecting itself from the perils of modern diets.

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