

# A Review on Knowledge, Attitude and Behaviors towards Dental Caries among School Age Children

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**Abstract:** *The oral health is a key factor for the elimination of many health problems, it has received considerable attention among the health care community and the concern is that children may not be aware of the seriousness of these problems and therefore do not pay attention to the behavior, the correct treatment and prevention methods. Investigating dental health knowledge among children is important. Knowing what behaviors are right in relation to dental health does not guarantee that children will practice those behaviors. However, lack of Knowledge and misconceptions about dental health may lead to behaviors that are harmful to teeth and gum. This paper discusses knowledge, attitudes and behaviors of school children toward oral health.*

**Keywords:** Knowledge, attitude, behavior, dental caries

## 1. Introduction

Oral health is important for physical and psychological well-being. There is evidence that oral health depends upon biological, social, environmental, mental and physical factors. It has been reported that there is variation in the prevalence of caries and periodontal disease among different subgroups of the same society. Oral health is fundamental to general health and well-being. A healthy mouth enables an individual to speak, eat, and socialize without experiencing active disease and discomfort [1]. The risks of oral problems is extensive and the children who suffer from poor oral health are 12 time more likely to have more restricted-activities, including missing school, than those who do not. Annually, more than 50 million hours are lost from school due to oral diseases [2].

The improvement of oral health is considered to be one of the most important goals of dental health education. School age children are the primary focus for education because the earlier a child is reached; the greater is the potential for positively affecting child's attitude, values and behaviors [3]. The school aged period from childhood to adolescence is a critical life stage when health and oral health behaviors develop [4]. Regular oral health assessment is fundamental to promoting, protecting and improving children's oral health; it allows caries to be detected at an early stage and treated using non-operative or minimally invasive techniques [5]. Early detection of the problems and early effective intervention are essential to ensuring that each child attains their full health potential. These principles apply equally to oral health, which is an important component of a child's general health and well-being [6].

## 2. Oral Health

It has been found that dental caries and tooth loss remain significant problems affecting the Nation's oral health. Although average dental caries rates for school-aged children have declined, nearly a half of all children still have caries.

Mouth is the mirror of overall health, with advancements in oral health promotion and preventive measures more people retain their natural teeth for long time as compared to half a century ago. The effects on oral health includes effect on oral mucosa, lips, teeth and other associated structures, and their functional activity leading to impairment of speech, mastication, swallowing and pain leading to anxiety and depression [7].

Good oral health today is considered a component of overall health. **Oral health** has been defined as a state of the mouth and an associated structure where future disease is inhibited. Dental caries, the most common chronic childhood disease, it has shifted from being a universal health problem to one primarily affecting low-income children [8]. Oral health is an essential component of health throughout life. However, millions of individuals suffer from dental caries and periodontal disease, resulting in unnecessary pain, difficulty in chewing, swallowing, speaking and increased medical costs. Untreated oral diseases in children frequently lead to serious general health problems, significant pain, and interference with eating and lost school time [9].

## 3. The Status of Oral Health in Iraq

Previous reports on the sweet preferences and dental caries in Iraqi children demonstrated that the level of sugar intake was high. Urban individuals showed a much higher preference and consumption of sugar than their rural counterparts. Within the urban population, individuals who had lived longer in the city and who were from families with lower educational backgrounds had the highest levels of sugar consumption. Finally, the observed decrease in the caries prevalence among children after years of economic decline was attributed to the low availability of sugar [10].

Report that were conducted concerning the assessment of nutritional status among different age groups children and different geographical locations; results showed that

malnutrition may affect the oral health .so caries experience was higher among malnourished children [11].

#### 4. The Relationship between Oral Health and General Health

Dental health plays a key role in the overall health status and quality of life of children; it may also affect several domains of child development and growth. Good dental health enhances the child's ability to develop several physical and social functions such as feeding, breathing, speaking, smiling, and social adaptation [12].

Children and adolescents with oral health problems are more likely to feel worthless and inferior, shy, unhappy, sad, or depressed and are less likely to be friendly compared with those without oral health problems. Early tooth loss caused by tooth decay can result in failure to thrive, impaired speech development, and reduced self-esteem[13].

The mouth as a mirror of health and disease occurring in the rest of the body in part because a thorough oral examination can detect signs of numerous general health problems, like nutritional deficiencies and systemic diseases, including microbial infections, immune disorders, injuries, and some cancers. In addition, there is mounting evidence that oral health complications not only reflect general health conditions but also exacerbate and even initiate them [14].

Several dental problems in children and adolescents also have been negatively associated with psychosocial well-being. Dental pain affects emotional stability of children and enrollment in social activities such as by preventing children from engaging in playing [15].

#### 5. Dental Caries

Dental caries is a post-eruptive bacterial disease affected the dental hard tissue. The disease is the results of interplay of several factors (it is multifactorial) including host factors (susceptible tooth and saliva), dietary sugar and cariogenic bacteria in the presence of sufficient time. Dental caries is the most prevalent oral diseases in children and teenagers, so the first years of child life is considered to be of significant importance in the prevention of oral diseases [16].

Dental caries starts early in life and increased with increasing age due to the cumulative nature of the disease. However, studies showed that the rate of caries attack is high through puberty and then it diminishes in middle age and elderly. Advancing Oral Health in America identified dental caries as the term is used in the singular and refers to the disease commonly known as tooth decay the single most common chronic childhood disease. Today, dental caries remains a common chronic disease across the life span in the United States as well as around the world.

Dental caries is a common disease in children which causes pain with resultant effect on various physiological and social functions [17]. The mandibular molars more affected than maxillary molar, and maxillary anterior were involved more than the mandibular anterior, this may be attributed to the early eruption of posterior and to differences in the morphology of the tooth [18].

Dental caries remains a major oral health disease affecting children world-wide. While the prevalence and severity of dental caries in most industrialized countries have declined substantially in recent years, in developing countries the prevalence is predicted to increase. This disparity between industrialized and developing countries has been attributed to preventive oral health care programs adopted by the former and changes in dietary habits coupled with inadequate exposure to fluorides in developing countries [19]. During the past two decades, the level of dental caries has increased in children and adolescents in developing countries, in contrast to developed countries[20].

#### 6. Factors Affecting Caries Prevalence

Many factors affecting the prevalence and severity of dental caries:

##### Age

The variation in the prevalence of dental caries affects humans of all age groups particularly children where caries disease is on the top. In primary dentition, dental caries was found to continue increasing till age six, while a decrease in disease was recorded after that age [21]. Caries lesions that result in cavitation are irreversible and therefore accumulative with age, there is strong correlation between age and dental caries. It was found that by age six years old about 20% of children have experienced dental caries in their dentition[22].

##### Gender

When dental caries rates are reported by sex, females are typically found to exhibit higher prevalence rates than males. This finding is generally true for diverse cultures with different subsistence systems and for a wide range of chronological periods. Exceptions the caries rates for females are approximately twice the frequency of caries among males [23].

Some studies found that there is no significant difference between male and female regarding caries experience but higher caries prevalence among females is often explained by one of three factors: 1- earlier eruption of teeth in girls, and longer exposure to the cariogenic oral environment 2- proximity of women to food supplies and snacking during food preparation 3- pregnancy and hormonal influences [24].

##### Diet

Tooth calcification and development could be affected by nutritional imbalance' nutrition could have a strong impact on oral health and there is no question about the importance of childhood nutrition on children's health [25].

**Fluoride**

Fluorides are another factor affecting teeth and play a key role in the prevention and control of dental caries. There is no doubt that the discovery of the anti-cariogenic properties of fluoride was one of the most important landmarks in the history of dentistry [26].

In the world oral health report 2003 it has shown that fluoride is most effective in dental caries prevention when a low level of fluoride is constantly maintained in the oral cavity. Fluorides can be obtained from fluoridated drinking-water, salt, milk, mouth rinse or toothpaste, as well as from professionally applied fluorides; or from combinations of fluoridated toothpaste with either of the other fluoride sources [27]. The use of fluoride tooth paste reduces caries susceptibility as fluoride is applied to the surface of the teeth [28].

**7. Students' Knowledge, Attitude and behavior Regarding Oral Health**

**Knowledge** is the capacity to acquire retains and uses information, which is a mixture of comprehension experience, discernment and skill [29]. The major challenges for the future of peoples' oral health will be to translate knowledge and experiences of disease prevention into action programs. Dental caries initiation and progression has been improved in recent years, which explain necessitates development of new treatment strategies. Dental professionals are expected to update their practices according to the evidence-based knowledge which emphasize continuous changes in dentists' education [30].

Health education is one of the health promotion strategies which, in order to achieve optimum health, focuses on knowledge, attitudinal and behavior changes [31]. The appropriate oral health education can help to cultivate healthy oral health practice providing adequate information, motivation and practice of the procedure with the subjects can be create the changing to health attitude and practices [32].

Adolescents have a basic knowledge of dental health, like importance of proper brushing and diet in preventing dental caries, many fail to brush their teeth effectively and tend to consume cariogenic foods. They may underestimate health risks and tend to oppose their parents and teachers, making it the most difficult period for health education [33]. Strong knowledge of oral health demonstrates better oral care practice. Similarly, for those with more positive attitude towards oral health are influenced by better knowledge in taking care of their teeth and further oral health education can help to cultivate healthy oral health practice. It has been found that positive attitude towards oral health are predisposed by better knowledge the children may have in how to take care of their teeth [34] and children with adequate knowledge of oral health maintenance were less likely to develop dental caries than were those with insufficient knowledge [35].

**Attitude** is a predisposition of tendency to respond positively or negatively towards a certain idea, object, person, or situation [36]. The operational definition is willingness or tendency to respond positively or negatively Toward oral health questionnaire formula the position effects the individual's choices.

Dental care has been to improve dental health attitudes among children and the young. This has improved children's dental health and changed the dental caries patterns affecting them. It also resulted in more adults being able to keep their natural dentition functional into a later age [37]. there were considerable differences in dental health attitudes, behavior between the students in different countries, reflecting the different cultures and the health education systems [38].

Oral health attitudes and behavior are also influenced by parents in early years of life and predict the actual oral health status. Teachers, as the future providers of dental care, are expected to be a role model for their students, family members and friends and ensure their awareness of oral health maintenance [39].

**Behavior** it is all that different responses that comes from students of primary schools regarding oral health. The American Dental Association recommends that to avoid oral diseases, individual should brush and floss at least once a day and visit a dentist regularly. Dental flossing and tooth brushing are the most commonly performed oral self-care behavior [40].

Unhealthy behaviors are difficult to change during the adult years, childbehavior modification may be a family responsibility, but many risk behaviors stem from the school-age years, schools have powerful influences on children's development and well-being it is important to intervene before problematic behaviors become established by using diverse educational approaches targeting individuals at different stages of behavioral development and with different cognitive abilities [31].

**8. Conclusion**

The oral health is a key factor for the elimination of many health problems, children may not be aware of the seriousness of these problems and therefore do not pay attention to the behavior, lack of Knowledge and misconceptions about dental health may lead to behaviors that are harmful to teeth and gum. Children and adolescents with oral health problems are more likely to feel worthless and inferior, shy, unhappy, sad, or depressed and are less likely to be friendly compared with those without oral health problems. Early tooth loss caused by tooth decay can result in failure to thrive, impaired speech development, and reduced self-esteem. School should play a vital rule in enhancing children knowledge about dental care because many bad behaviors stem from school age years.

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