A Paradigmatic Model of Prevention of Oral Diseases and Education of Oral Health Promotion of Children and Adolescents in Iran: A Grounded Theory Methodology

Abstract

Introduction: Oral health is a part of the general physical health. It is important to have healthy gums and teeth. Healthy teeth and gums are important for maintaining beauty and confidence, talking, chewing, and swallowing. The main strategy for preserving oral health is the implementation of health promotion interventions and various health education strategies, in accordance with the new learning methods and the most effective and shortest techniques to achieve the goal of promoting oral health.

Methods: The present study employed qualitative research and grounded theory research method. In this method, the collected data were analyzed based on the three coding stages of Strauss and Corbin (1990). Interconnected concepts form an axis or component, and from them will come the categories. Finally, a theory is formed out of categories.

Results: The data included 122 elementary concepts from which 52 components were extracted. The present study findings consist of five levels including: 14 components related to the underlying issues and challenges of oral health in children and adolescents (causal conditions) such as: unhealthy nutrition, specific diseases and medications, mothers' inappropriate health behaviours, economic and cultural poverty, lack of access to dental services, etc.; 11 components related to enabling and promoting oral health (strategic factors) such as: intervention through schools, audio-visual media, individual counselling, interviewing, etc.; 8 components related to the context of oral health promotion in children and adolescents (contextual factors); 9 components related to oral health promotion threats and limitations in children and adolescents (interfering factors); and 10 components related to improvements and successes in oral health (outcomes). They can provide relatively comprehensive data on developing a paradigmatic model of prevention of oral diseases and education of oral health promotion of children and adolescents in Iran.

Conclusions: The present study results leads researchers to developing a paradigmatic model of prevention of oral diseases and education of oral health promotion of children and adolescents in Iran.

Keywords: Oral Health, Prevention, Education, Grounded Theory Methodology

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الگوی پارادایمی پیشگیری و آموزش ارتقای بهداشت دهان و دندان در کودکان و نوجوانان ایران: پژوهش داده بنیاد

چکیده

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چکیده مقدمه: سالمت دهان و دندان بخشی از سالمت عمومی بدن به شمار میرود برای داشتن لثهها و دندانهای سالم رعایت بهداشت دهان و دندان بسیار مهم است دندانها و لثه سالم برای حفظ زیبایی، اعتماد به نفس، تکلم، عمل جویدن و بلعیدن مهم است. اصلیترین راهکار در این زمینه، اجرای مداخالت ارتقا سالمت و پیادهسازی استراژیهای مختلف آموزش بهداشت، منطبق بر شیوههای جدید یادگیری و استفاده از موثرترین و کوتاهترین راه در جهت رسیدن به هدف ارتقا سالمت دهان و دندان هستند .

روش کار: پژوهش حاضر از نوع کیفی و با روش داده بنیاد میباشد. در این روش دادههای جمعآوری شده، بر اساس کد گذاری سه مرحله ایی اشتراوس و کوربین)۱۹۹۰ (اتحلیل شد. مفاهیم مرتبط به هم، یک محور یا مولفه را میسازند و از دل آنها مقوالت حاصل خواهد شد. در نهایت الگوی نظریه از مقولهها شکل میگیرد .

یافتهها:دادهها شامل ۱۲۲ مفهوم ابتدایی بود که ۵۲ مولفه از آن استخراج گردید. یافتههای حاصل از پژوهش حاضر که در ۵ سطح شامل: ۱٤مولفه مرتبط با مسائل و چالشهای بنیادین موجود بهداشت دهان و دندان در کودکان و نوجوانان)شرایط عادی(مانند: تغذیه ناسالم، بیماری ها و دارو ها خاص،رفتار بهداشتی نامناسب مادران، فقر اقتصادی و فقر فرهنگی ، عدم دسترسی به خدمات دندان پزشکی و ...، ۱۱ مولفه مرتبط باتوانمند سازی و ارتقا بهداشت دهان و دندان)عوامل راهبردی(مانند :مداخله از طریق مدارس ، رسانه دیداری و شنیداری ، مشاوره فردی ، مصاحبه و...، ۸ مولفه مرتبط با بستر و امکانات ارتقا بهداشت دهان و دندان کودکان و نوجوانان)عوامل زمینه ایی(، ۹ مولفه مرتبط با تهدیدات و محدودیت ها ارتقا بهداشت دهان و دندان کودکان و نوجوانان)عوامل مداخلهگر(، ۱۰مولفه مرتبط با بهبود و موفقیتها بهداشت دهان و دندان)پیامدها(، و میتواند اطالعات نسبتاً جامعی را در خصوص تدارک الگوی آموزش و پیشگیری ارتقای دهان و دندان در ایران را ارائه نماید .

نتیجه گیری: نتایج پژوهش منجر به تدوین الگوی پارادایمی ارتقا و پیشگیری بهداشت دهان و دندان در کودکان و نوجوانان ایران شد .

واژگان کلیدی: بهداشت دهان، پیشگیری، آموزش، پژوهش داده بنیاد

INTRODUCTION

Nowadays health is recognized as part of each society's culture. The World Health Organization (WHO) defines health as "physical, mental, and social well-being, and not merely the absence of disease and infirmity" (1).

Oral health is essential to general health and well-being both in terms of physical and mental aspects. Oral health means the absence of any chronic oral and facial pain, cancer and oral infection, periodontal disease, caries, loss of teeth, and other diseases and disorders which reduce normal mouth behaviors such as biting, chewing, smiling, and talking. Oral diseases also affect the quality of academic, professional, and everyday activities (2).

Risk factors for oral disease include: poor diet, smoking, alcohol abuse, poor oral hygiene, and poor socioeconomic conditions (3, 2). Oral hygiene is very important for having healthy gums and teeth which per se are important for maintaining beauty and confidence, talking, chewing and swallowing (3).

Despite recent successes regarding oral health, there is still a high prevalence of oral diseases in the world due to inappropriate health habits and behaviors such as no observance of using toothbrush dental floss, malnutrition, lack of basic dental and oral knowledge, inappropriate oral habits, etc. (4).

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According to the US Department of Health and Services, dental caries is a chronic illness, with a prevalence five times higher than asthma and 7 times higher than seasonal allergies (5).

According to a WHO study in 2016, about half of the world's population suffers from oral diseases: 2.4 billion of the adult population suffer from decay in their permanent teeth and 486 million children suffer from decay in their milk teeth (6).

To overcome problems such as lack of time, cost, and need for facilities and equipment that are a barrier to dental treatment, the most important way is to reduce and prevent oral diseases (7).

The main strategy in this area is to implement health promotion interventions and accomplish various health education strategies. They are consistent with new training methods and using the most effective and shortest way to achieve the goal of oral health promotion (8). Research shows that a variety of models and methods have been implemented in different countries to promote oral health interventions (9).

Many oral diseases are reversible and preventable in early stages. But in many countries a significant number of children, their parents, and educators have limited knowledge of oral disease prevention (10). There are many factors to boost the people's motivation for maintaining good oral health.

The most important factor is familiarity with the nature of diseases and awareness of preventive measures. Schools play an important role in oral health education, as about one billion students worldwide are attending school. Health education can be reinforced in school years as people spend the most crucial years of their lives in school and develop their lives, skills, and attitudes (11).

Patterns of oral diseases such as periodontal disease and caries have changed over the past three decades and their rates have decreased in developed countries due to lifestyle modifications, adequate self-care programs, access to dental services, and active role of schools in health education. However, in developing countries, the increase in the prevalence of oral diseases such as periodontal disease and high caries has been reported (12).

In Iran, research has also been done on prevention of oral disease and education of oral health promotion. For example, Abedi conducted a research titled "meta-analysis of the effectiveness of educational interventions on dental and oral health promotion in Iran" (13), and Hazavehei et al. carried out a study titled "promoting oral health in 6-12 year-old students: a systematic review".

With regard to the above discussions, the present study aims to answer the following questions: What are the current problems of dental health in children and adolescents in Iran? What are the challenges and strategies of prevention of oral disease and education of oral health promotion? What are the causes of prevention of oral diseases and education of oral health promotion?

The study also seeks to develop a paradigmatic model of prevention of oral diseases and education of oral health promotion of children and adolescents in Iran.

METHODS

The present study employs qualitative research and grounded theory research design. Grounded theory (GT) is a systematic methodology in the social sciences involving the construction of theories through methodical gathering and analysis of data. This research methodology uses inductive reasoning, in contrast to the hypothetico-deductive model of the scientific method (Strauss & Corbin, 1998).

This methodology is a theory generating technique in humanities that was first introduced by Glaser and Strauss in 1962 (Strauss & Corbin, 2011). Using this methodology, a study begins with questions, or even just with the collection of qualitative data. Then, researchers review the data collected, repeated ideas, concepts or elements become apparent, and are tagged with codes, which have been extracted from the data. As more data is collected, and re-reviewed, codes can be grouped into concepts, and then into categories. These categories may become the basis for new theory (Strauss & Corbin, 1998). In fact, GT allows researchers to formulate a theory of the phenomenon in question while collecting and analyzing data (Strauss & Corbin, 1998).

Data Analysis

The present study aimed to develop a paradigmatic model of prevention of oral diseases and education of oral health promotion of children and adolescents in Iran based on grounded theory developed by Strauss and Corbin (2014) (14), which was used to collect qualitative data from all Persian and English books and research articles Materials related to the prevention of oral diseases and promotion of oral health were extracted from books and articles such as PubMed ،google scholar. Elsevier ،Scopus as an English databases and SID ، noormags, magi ran as a Persian databases. The articles were selected from 2005 to 2019.

Searching in databases has took time about one month we collected about 400 articles and then we asked some experts PhD community in dental health persons to remove unrelated methodological and subjective articles

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then just 75 articles remained. This process has took time about 2 month .extraction and classification concepts in to 5 categorizes took 2 month.

In this way, investigating the conducted studies continues to achieve research goals until the data will reach saturation and no other new concepts are extracted from the studies. The open coding and arrangement of the tables were performed and after comparing, deleting and combining the expressions, 122 final concepts were obtained. In the axial coding phase, 52 components were obtained and re-organized by linking and correlating concepts of the same type.

After revisiting the terms and concepts, in a reciprocal way, at the selective coding stage, the findings were combined and the components were obtained by linking the main and subcategories. Each component were categorized in the causal factor, contextual conditions, confounding factors, strategies, outcomes and finally the axial phenomenon (model of prevention and education of oral hygiene in children and young people) categorized. After that, the main structure of the model was constructed in order that a descriptive model of prevention from oral diseases and education of oral health promotion in children and adolescents in Iran can be developed.

RESULTS

One of the most important concerns for the health systems of the countries has always been the developing a model for prevention of oral diseases and education of oral health promotion for their societies. The data included 122 elementary concepts from which 52 components were extracted.

The present study findings consist of five levels including: 14 components related to the underlying issues and challenges of oral health in children and adolescents (causal conditions) such as: unhealthy nutrition, specific diseases and medications, mothers' inappropriate health behaviors, economic and cultural poverty, lack of access to dental services, etc.; 11 components related to enabling and promoting oral health (strategic factors) such as: intervention through schools, audiovisual media, individual counseling, interviewing, etc.; 8 components related to the context of oral health promotion in children and adolescents (contextual factors); 9 components related to oral health promotion threats and limitations in children and adolescents (interfering factors); and 10 components related to improvements and successes in oral health (outcomes).

They can provide relatively comprehensive data on developing a paradigmatic model of prevention of oral diseases and education of oral health promotion of children and adolescents in Iran. The research results led to the development of a paradigmatic model of prevention of oral diseases and education of oral health promotion of children and adolescents in Iran. It is analyzed based on the model elements as follows (Figure 1).

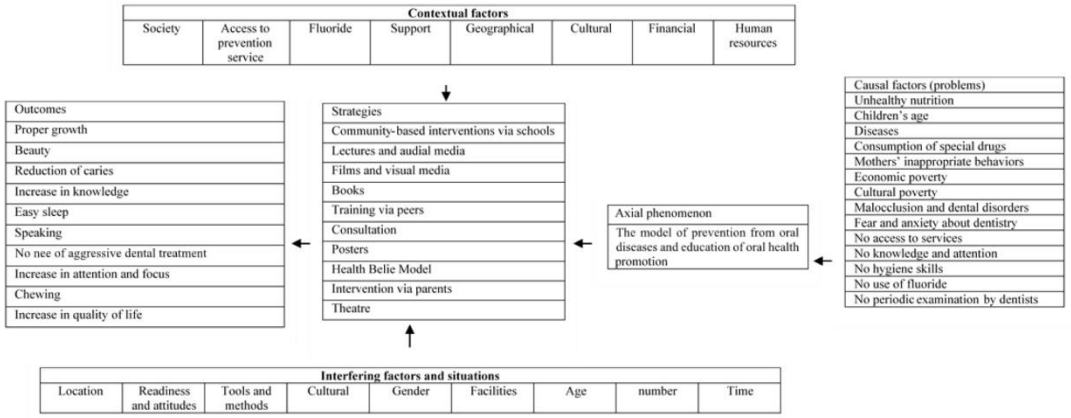


Figure 1. The paradigmatic model of prevention of oral diseases and education of oral health promotion of children and adolescents in Iran. Fundamental problems and challenges in prevention of oral diseases and education of oral health promotion (causal factors)

It can be said that the causal factors are the events that lead to the development of a phenomenon. Causal factors in any research indicate the conditions and concepts by which the axial phenomenon is affected (Corbin & Strauss, 2008).

The causal factors in this study include 56 concepts derived via open coding, which, after axial coding, 14

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components were extracted for the selective coding stage. The existing issues and challenges can be subdivided into social, cultural, economic, school and family issues listed in Table 1.

The axial phenomenon and its strategies emerge in contextual conditions. In other words, under these special conditions, strategies influence the realization of phenomena (Corbin & Strass, 2008). In this study, according to the conducted studies, 52 concepts were extracted were extracted out of the data. Eight components were introduced as backgrounds (see Table 4).

Table 1. Open, axial, and selective coding of causal factors of the paradigmatic model of prevention of oral diseases and education of oral health promotion of children and adolescents in Iran.

Units of Concepts	Open Coding	Axial Coding	Selective Coding
Consumption of dried fruits and sticky foods for a long time. Acidic foods can cause enamel corrosion and increase the sensitivity mucous membranes of the mouth. Hardened sugar-containing chocolates are at risk of causing tooth decay. Ice chewing. Crunching chips that cling to the grooves, take great care with toothbrushes and floss. Energy drinks that contain a lot of sugar can kill the enamel (15).	Unhealthy nutrition	Nutrition	
Palate and lip clefts are the problems during childbirth (15). Drugs such as overactive children, insulin, propanolol, calcium ampoule can cause dry mouth and Decrease buffering capacity and PH (16).	Medication	Medication	
Increasing babies' age can contribute to the accumulation of caries risk factors over time and thus cause tooth decay (17).	Children's ranks in their families	Age	
Diabetes can lead to tooth loss because of fungal infections and dry mouth. Heart disease and its medications. Osteoporosis cause bone resorption and tooth decay, making bone density susceptible to periodontal disease. Problems with the stomach and its contents can cause enamel to disappear and some diseases can delay tooth growth (18-20), Physical and mental disabilities may cause parents' fear and their rejection to visit dentists and participate in community (21). Autism: Neuropsychiatric disorders require special care and have poor oral and nutritional habits and poor salivation (22). ADHD: (Attention deficit hyperactivity disorder) These individuals have inappropriate nutrition and behaviors that cause tooth decay (23). Deafness and blindness: Inadequate access to services and information, poor day-to-day health, fear of dentistry (23).	Disease and Developmental Disorders	Diseases	
Causal factors for oral diseases			
Using sweet liquids in glass baby bottles, giving babies snacks, cleaning the mouth after drinking sweet liquids. Mothers should first taste the food and then give it their babies, lack of regular dental care, improper brushing pattern, not supporting asking babies to brush and floss (15-24).	Mothers' inappropriate nutritional behaviors/mothers' inappropriate health behaviors	Mothers' inappropriate behaviors	
Lack of knowledge and familiarity with oral health issues (24).	Child caregivers' and nurses' insufficient attention and knowledge	No attention and knowledge	
Low age causes health skills failure (24).	Children's insufficient skills behaviors	No skills	
Low family income, parents' jobs (25, 26)	Economic poverty	Economic poverty	
Lack of parents' awareness of the importance of hygiene, poor family education, fear of dentistry, and failure to visit dentists regularly (27, 28).	Cultural poverty	Cultural poverty	
No access to fluoride and problems and diseases causing intolerance to fluoride (15-28).	Use of fluoride	Fluoride	
Cultural poverty, economic poverty, no access to services, children's fear of dentistry, parents' fear of dentistry, especially those of children with special needs (22, 25-27, 29).	No periodic examination by dentists	Farm from dentistry	
Incisors overbite, malposterior crosstalk interference, mandibular crowdling incisors, overjet and overbite (30).	Malocclusion	Malocclusion	
Cultural poverty, no cooperation with dentists, irregular referral to dentistry (31, 32).	Fear of and anxiety about dentistry	Fear	
Living in a geographically deprived areas, economic poverty, and lack of transportation (15-34).	No access to dental services	Access to services	

Table 2. Open, axial, and selective coding of strategies the paradigmatic model of prevention of oral diseases and education of oral health promotion of children and adolescents in Iran

Units of Concepts	Open Coding	Axial Coding	Selective Coding
	Concepts		
Toothbrush and dental floss training at school using the fones technique, fluoride varnish and mouthwash (35)	Small and low cost programs in schools	community-based intervention through schools	
A brief and useful lecture on causes and prevention of oral diseases (13, 36).	Lectures	Lectures	
Training films have a long-term impact on the audience. (37). Parents, dentists and peers talk about proper health behaviors. Peer education is more effective than others (13, 28, 36).	Training films, dentists and peers' leadership training	Films, Education	
Books provide information on proper nutrition and oral health (28, 37).	Providing training books to individuals in their own learning methods	Books	
Consultation for anyone regarding proper nutrition, toothbrush and use of fluoride-containing toothpaste, fluoride tablet, and xylitol. Reception of preventive services, Telephone consultation for parents (38)	Unique counsels individuals' and advice for relatives	Consultation	
Training about fluoride and the use of dental floss in preventing caries (39, 40).	Poster	Poster	
Toothbrush training using the acrylic model (41), training via board, charts, and illustrations (42).	training using acrylic model	Educational models	
Explaining the barriers and benefits of brushing. Self-efficacy and perceived barriers were more associated with changing health behavior. There is a relationship between perceived severity and oral health behaviors. (43, 44).	Health Belief Model	Health Belief Model	Strategic factors for improving oral health
Interviewing with parents reduces perceived barriers of mothers of preschool children's oral health, is self-efficient, enhances their positive attitudes, and offers appropriate solutions to reduce maternal resistance to appropriate health behaviors (45, 46). SMS, cyberspace, information brochures, and educational booklets (46) Interviewing along with parenting teaching videos have great effects on reducing new carious lesions in children (46)	Motivational interviews with parents	Interventions	
Indirect methods of health education such as role playing and painting provide a happy and childlike environment for achieving good health (47, 48).	Theatre and paining	Theatre and painting	

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Table 3. Open, axial, and selective coding of interfering factors of the paradigmatic model of prevention of oral diseases and education of oral health promotion of children and adolescents in Iran

Units of Concepts	Open Coding	Axial Coding	Selective Coding
Studies have not been conducted in deprived areas due to difficult access (25).	Spatial geographical limitations	Location	
Parents had no study and no information on ways to prevent health problems (27, 28).	Parents' lack of knowledge and information	Knowledge and perception	
Few studies have been conducted so far further studies are needed on this subject(13)	Number of study	Number	
Studies have been conducted on a limited age group, so it needs a wider range of participants (49).	Age group	Age	Interventional factors promoting oral health
Lack of educational and financial facilities (49).	Financial educational facilities	Facilities	
Solely one gender was accessible due to restrictions in some articles (49).	Gender	Gender	
In some cultures, some methods are not possible or some ethnicities still believe in traditional methods (49).	Ethnic and cultural limitations	Cultural	
Questionnaire that guides individuals towards a particular direction (49).	Self-efficient questionnaire	Research instrument	

Table 4. Open, axial, and selective coding of contextual factors of the paradigmatic model of prevention of oral diseases and education of oral health promotion of children and adolescents in Iran

Units of Concepts	Open Coding	Axial Coding	Selective Coding
Systemic method: adding fluoride to drinking water, Topically: Fluoride-containing toothpaste and drops (15).We need to train forces such as school health educators, dentists, and dental assistants (24).	Increase access to fluoride, Human	Fluoride, Human	
Government funding to promote oral health through schools, construction of Health & Training Center (25, 26).Education should be done everywhere to cover all areas according to their needs (25, 26).	Financial , Geographical	Financial , Geographical	
We need parental and government support (22, 25-28). Education should be publicized to cover all ethnicities and cultures (27, 28)	Support Cultural	Support Cultural	Contextual factors promoting oral health
Distributing specialized forces in schools and educating students, Motivating students for observation of oral hygiene (35).Use of fluoride varnish and sealants (50).	Preparing and equipping schools, Increase in access to prevention services I	Community, Prevention services	

Table 5. Open, axial, and selective coding of outcomes of the paradigmatic model of prevention of oral diseases and education of oral health promotion of children and adolescents in Iran

Units of Concepts	Open Coding	Axial Coding	Selective Coding
Proper height and weight growth (51).	Proper growth	Growth	
Ability to speak well without pain and discomfort (51). Not trouble for eating (51).	Speaking , Chewing	Speaking Chewing Chewing	
Beauty (51).	Beauty	Beauty	Implications and outcomes of improving oral health
Reduction in the number of missing and filled teeth (52).	Reduction in caries	Reduction in caries	
Increase in awareness and motivation for tooth brushing and caries prevention (52).	Increase in awareness and motivation	awareness and motivation	
Sleep without pain and discomfort (51, 52).	Sleeping	Sleeping	
No need for general anesthesia and strict dental treatment (51).	No need for general anesthesia and strict dental treatments	No need for aggressive treatments	
Increase in attention and focus for the comfort and beauty that one has as a result of proper health (52).	Increase in attention, focus, and confidence	Increase in attention, focus, and confidence	
Quality of life (51, 52)	Quality of life	Quality of life	

DISCUSSION AND CONCLUSION

The present study was aimed at developing a paradigmatic model of prevention of oral diseases and education of oral health promotion of children and adolescents in Iran. To formulate this model, grounded theory methodology developed Strauss and Corbin (2014) was employed, and the results of this study led to the development of a paradigmatic model of prevention

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of oral diseases and education of oral health promotion of children and adolescents.

Causal Factors and Current Problems of Oral Health

Causal factors and current oral health problems after coding and categorization include 14 categories: unhealthy nutrition, family ranking, diseases and developmental disorders, specific drug use, maternal nutrition and health behavior, economic poverty, cultural poverty, no access to fluoride, no periodic examinations by dentists, malocclusion and dental abnormalities, fear and anxiety of dental environment, lack of access to dental services, child caregivers' and nurses' insufficient attention, nurses' and child caregivers' inadequate awareness and knowledge, and children lack of sufficient skills for health behaviors. These findings are consistent with the results obtained from Sabah et al. (2). Mehraban Khahi et al. (16). Keikhaei et al. (17). Karimi et al. (24) in Iran and Macnab et al. (33). King et al. (15). Bersell et al. (25) Mahmoud et al. (27). Haleem et al. (28). In other countries.

Explaining these results, it can be said that unhealthy nutrition and bad eating habits are one of the most important causal factors because unhealthy substances cause tooth enamel and these are calcium-free substances which are the most important element for dental health. Also, consuming sweet snacks, drinks and generally daytime snacking permanently provide a source of sugar for the oral diseases and then acidic bacteria on the teeth. Such sticky foods and chips are among the worst ingredients for the tooth because they cling to the deep groove and are difficult to be removed with a toothbrush. Moreover, poverty in general, both economic and cultural poverty, is also one of the most important causal factors. Economic poverty due to low family income causes a lack of regular visits to the dentist (lack of access to services). Cultural poverty has increased the prevalence of dental diseases in children and adolescents due to their misunderstanding of the importance of regular dental examinations.

The Axial Phenomenon and Strategies for Prevention of Oral Diseases and Education of Oral Health Promotion

The results of the study showed that oral health prevention and education strategies for children and adolescents were extracted and categorized into 11 categories: school-based intervention, lectures, training films, self-learning textbook, learning via instructors, parents, and peers, individual consultation, motivational-educational posters, learning using acrylic models and pictures and graphs, health belief model, interventions via parents, theater, and painting. These results are consistent with those of Moallemi et al. (35). Abedi (13), Mohammadkhah (36), Basir et al. (37), Amidi et al. (40). Karami et al. (44). Shirzad et al. (45). Zarei (47), Shamsai et al. (48). in Iran; and Haleem et al. (13). Van Limpt et al. (41), Hebbal et al. (42) and Choi (46),are in other countries.

In explaining these results, it can be said that peer education has been very effective in encouraging children to brush their teeth, since they tend to learn from children and adolescents of their own age. In other media outlets, such as films, especially if they are examined by experts, tailored to the age of the student, and broadcast at the right time and place, can play an effective role in delivering a healthy message, engaging, and raising awareness and performance. Have a background in oral health. In addition, it was pointed out that if school education programs receive parental assistance (interviewing, counseling, parenting through books, posters, texting, and cyberspace), they can promote health behaviors in students and children.

Interfering Factors of the Paradigmatic Model of Prevention of Oral Diseases and Education of Oral Health Promotion

There are nine limitations to the implementation and formulation of this model, including 9 categories: time, number, age, facilities, gender, culture, study instruments, knowledge and attitude, and location. The results are consistent with those of MacDougal (26) Mahmoud et al. (27), Haleem et al. (28), Abedi, (13). Richard et al. (49). Cultural limitations have led some ethnic groups to disapprove modern oral hygiene strategies and to continue traditional methods of preventing oral disease. Restrictions on facilities and locations have made it impossible to implement certain procedures in some remote areas.

Contextual Factors of the Paradigmatic Model of Prevention of Oral Diseases and Education of Oral health Promotion

The results show that the contextual factors include eight categories: human, financial, cultural and geographical resources, support, increase in access to fluoride and dental prevention services, and equipping schools with a space for health education. The results are consistent with those obtianed by Movahhed et al. (22). Karimi et al. (24). Molallemi et al. (35). in Iran; and King (15), Bersell (25), MacDougall (26). Abdouljalil et al. (29). Haleem et al. (28). Cvikl et al. (50). in other countries.

To explain these results, it can be stated that human resources such as school health educators and government-built health centers in schools and geographically disadvantaged areas, and a balanced

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presence of dental assistants and dentists in each geographic area are recommended for the enhancing access to dental care for all children. Furthermore, enhancing access to fluoride as an adjunct to tooth decay is very important. Water can be systematically fluoridated in any residential area. Prescribed for children and adolescents under the supervision of a dentist, tablets and fluoride drops can also be beneficial.

Outcomes of the Paradigmatic Model of Prevention of Oral Diseases and Education of Oral Health Promotion

Results of paradigm Outcomes of the paradigmatic model of prevention of oral diseases and education of oral health promotion for children and adolescents includes 10 categories: proper growth, speaking, beauty, reduction in dental caries, increase in awareness and motivation, comfortable sleep, no need for general anesthesia and strict dental treatment, increase in self-esteem and quality of life. These results are consistent with those of Jabbarifaret al. (51) and Batista et al. (52).

It can be said that reducing tooth decay and loss of teeth is very important because it can cause the child to have no further problems, for example: he/she eat more easily, has less pain and discomfort, and requires less aggressive dental treatments. Therefore, children's fear and anxiety will be lessened, their smiles will be more beautiful, and eventually their confidence and quality of life will improve. Disparities impacting access to care require local, state, and federal stakeholders to join forces to take advantage of the existing dental hygiene workforce, utilize innovative delivery models, improve license reciprocity, reduce prohibitive supervision, and expand the dental hygiene scope of practice. It is essential for community to focus resources on more cost effective preventive services instead of providing expensive palliative emergency services; establish school-based fluoride and sealant programs; integrate oral health education with prenatal care; reduce the complexities of the Medicaid system; and increase reimbursement fees so more providers will participate. Oral health is an essential component of overall health of individuals, communities, and the nation. It is not enough to increase access alone without also promoting strategies that will increase oral health literacy and affect meaningful changes in attitudes and beliefs that will lead to behavioral changes. The dental profession has the responsibility to promote oral health for all people, empower individuals to maintain optimum oral health, and advocate for those most vulnerable

Research Limitations

The present study limitations are as follows: not having access to all studies having done on the field of oral health in the world as some studies were private and some others have only been conducted without being published. Also, some articles and research were methodologically poor.

Recommendations

1. Presenting the paradigmatic model of prevention of oral diseases and education of oral health promotion of children and adolescents to the Iranian Ministry of Education because from the model, problems, strategies, underlying factors, intervening factors, and outcomes were obtained. Education can present it as an operational model for schools;
2. Offering paradigmatic model of prevention of oral diseases and education of oral health promotion of children and adolescents to the Ministry of Health and Medical Education for policy making and planning for the prevention of oral diseases and resolution of dental problems in the society
3. Using this model in family and school education to inform parents about proper oral health behaviors
4. Applying this model to places responsible for the upkeep and education of children, such as: children and adolescent centers, recreational cultural centers, parks and playgrounds, and child and adolescent festivals
5. Employing the model by municipalities for widespread promotion of culture and awareness about prevention of oral diseases and education of oral health in children and adolescents.

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