

## **Importance of Oral Health Education in Covid 19 Pandemic**

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**Abstract:** SARS-CoV-2, which causes the disease COVID-19, has been declared a global emergency by the WHO on 30 January 2020. There is a need to improve oral hygiene during a SARS-CoV-2 infection in order to reduce the bacterial load in the mouth and the risk of a bacterial superinfection. This article addresses the importance of oral health education in this covid era, role of communication through different modes, role of dentists, dental hygienist and oral health programmes. During this pandemic oral health education can be improved, with the evolution and advancement of research protocols, e-oral health education and services and tele-dentistry. So there is a need to keep ourselves updated with any new information regarding this disease.

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### **I. Introduction**

Oral health is an essential and integral component of general health<sup>1</sup> representing far more than simply a healthy mouth, a pleasing smile, and freedom from pain and infection. It contributes positively to self esteem and personal success.<sup>2</sup>

WHO has defined health as “a state of complete physical, mental and social well-being and not merely the absence of a disease or infirmity”.

National Conference on preventive medicine (1977) ‘Health education is a process that informs, motivates and helps people to adopt and maintain healthy practices and lifestyles, advocates environmental changes as needed to facilitate this goal and conducts professional training and research to the same end.’<sup>3</sup>

Dental health cannot be separated from general health since oral diseases may be a manifestation of an aggravated factor.<sup>4</sup>

On 31 December 2019, the World Health Organisation (WHO) was informed of a cluster of 27 cases of pneumonia with no known cause linked to a wet animal wholesale market in Wuhan City, China.<sup>5</sup> By 7 January 2020, the causative virus was identified as SARS-CoV-2, which causes the disease COVID-19, and was declared a global emergency by the WHO on 30 January 2020.<sup>6</sup>

A study published in the *British Dental Journal* highlighted the importance of improved oral hygiene during a SARS-CoV-2 infection in order to reduce the bacterial load in the mouth and the risk of a bacterial superinfection. Those patients who were reported to have a severe form of COVID-19 (20%) had associated higher levels of inflammatory markers and bacteria. Therefore, the author of the study recommended that poor oral hygiene be considered as a risk factor for COVID-19 complications, especially in patients with diabetes, hypertension or cardiovascular disease. Those comorbidities are associated with altered oral biofilms and periodontal disease.<sup>6</sup>

It is very important in this covid era to educate people to take interest in their dental health behavior, yet people at all levels of society must be educated to obtain the maximum return, from the efforts made to raise dental health standards of the people to reduce major dental health problems and hazards and to promote oral health so that they face less oral health problems.<sup>3</sup>

### **II. Objectives<sup>3</sup>**

WHO expert committee on dental health education was constituted with following objectives:

1. To review the current status of dental health education in relation to high priority dental needs and problems.
2. To discuss the basic concepts of dental health education founded in research in education and behavioral sciences.
3. To develop broad guidelines for planning implementing and evaluating dental health education programs.
4. To consider need for manpower facilities, and research in dental health education.

#### **Contents of dental health education<sup>7</sup>**

1. **Human biology:** Basic fundamentals of biology of human body are taught to children in schools.

2. **Nutrition:** The Purpose of dental health education in nutrition is to provide guidance in choosing balanced diet containing all the nutrients required by the body, for energy, maintenance, growth and repair so that better immunity can be build up in this covid era.

3. **Hygiene:**

a) **Personal hygiene:** It includes cleansing of personal body like bathing, washing hands, care of teeth, nails, hands, feet, and use of alcohol based soap and sanitizer.

b) **Environment hygiene:** It includes cleansing of the surroundings; it is further of two types domestic and social.

I. **Domestic hygiene:** it includes home sanitation, fresh air, light and ventilation

II. **Social (community) hygiene:** it includes water supply, drainage, sanitary services, disposal of human and animal excreta, housing food and water sanitation.

4. **Family care:** Traditionally mothers takes care of the children, about their hygiene, food, clothing and their needs, Family health care programs include mother-children health care, human growth and development, human reproduction, family planning, nutrition.

5. **Control of diseases:** There are wide ranges of communicable and non-communicable diseases requiring dental health education, control, prevention and planning. Such diseases are malaria, tuberculosis, leprosy, dental diseases, and drug addiction. In recent times covid 19 pandemic require much attention for its control and treatment planning.

6. **Mental health:** The purpose of mental health education is to help people to keep mentally healthy and to prevent mental breakdown. Recently many people are committing suicides because of stress, or getting afraid of the situation, or loneliness in this covid era.

7. **Information about availability of health care services:** Public should be made aware of the existing health care services and also the method of using them. Public should be motivated to use the available health services and to take active part in all the preventive programs to prevent disease and promote health.

**Communication in dental health education**

Communication can be regarded as a two-way process of exchanging or shaping ideas, feelings and information. Broadly it refers "to the countless ways that humans have of keeping in touch with one another".<sup>8</sup>

**Health communication** is defined as "a key strategy to inform the public about health concerns and to maintain important health issues on the public about health concerns and to maintain important health issues on the public agenda. The use of the mass and multimedia and other technological innovations to disseminate useful health information to the public , increases awareness of specific aspects of individual and collective health as well as importance of health in development."<sup>9</sup>

**WHO health promotion glossary, 1998**

"The ability to communicate is the primary factor that distinguishes human beings from animals. And it is the ability to communicate well that distinguishes one individual from another".<sup>9</sup>

Communication is part of our normal relationship with other people. Our ability to influence others depends on our **communication skills**, e.g., speaking, writing, listening, reading and reasoning. These skills are much needed in health education. The developing countries are now beginning to exploit the current "communication revolution" to put today's health information at the disposal of families, to help people to achieve health by their own actions and efforts. It is said that without communication an individual could never become a human being; without mass communication, he could never become a part of modern society.<sup>10</sup>

The important factors in the communication are:

1. Communicator
2. Message or information
3. Audience
4. Mode or-channels of communication.

**Communicator**

He or she gives the message for dental health education. For effective communication, he or she must

be clear about the following.

- A. Aims and objectives of health message communication.
- B. Audience: - the requirements, abilities, IQ and interest of the audience should be clear to the communicator.
- C. Message or communication- The message and knowledge he or she wants to spread should be useful, valid and correct.
- D. Channels or medium of communication should be clear and correct.

### **Message or Information**

The message or information which is to be spread must have the following properties. It should be: -

- a) According to the aims and objectives
- b) Clear and understandable by all the audience.
- c) Specific and chosen carefully
- d) Timely and not outdated
- e) Appealing to the Listeners
- f) Interesting to the audience.

### **Audience**

They are the persons benefited by the dental health education. Audience can be total population or group of the persons representing the population or selected persons who will spread the dental health education in their respective areas.

### **Channels or medium of communication**

The choice of medium is an important factor which controls effectiveness of communication. Medium should clearly deliver the message. Its-cost and availability are taken into consideration in its selection.

### **Promoting health education in covid era<sup>3</sup>**

#### **Audiovisual aids**

No health education can be effective without audiovisual aids, they help to simplify unfamiliar concepts; bring about understanding where words fail; reinforce learning by appealing to more than one sense, and provide a dynamic way of avoiding monotony.

**Auditory aids** – radio, tape-recorder, microphones, amplifiers, earphones.

**Visual aids** – **a. not requiring projection:** chalk and board, leaflets, posters, charts, models, specimens.

**b. requiring projection:** slides film strips LCD projectors.

**Combined A-V aids-** Television, sound films (cinemas) slides, has become an important part in promoting dental health during this covid era.

In this, mass media of communication are used which are as follows.

- A. **Television:**-It has become very popular, about 70 % population can watch TV programs. It is most effective, popular and cost- effective method of dental health education. The demonstration on TV should not exceed 5 minutes.
- B. **Radio:**- it has reached into the remotest corner of the country; it is very effective in areas where TV can not reach. Radio talk should not be more than 15 minutes.
- C. **News papers:**- these are the most important ways of communication and information to educate people. In the age where newspapers are lashed for giving front page up to advertisements, Jammu and Kashmir based Urdu newspaper Roshni garnered widespread appreciations and laudings for putting a free facemask on the first page of its recent edition and urged people to use it amid COVID-19.
- D. **Films:**- short films on dental health education are very effective but expensive; these films can attract large population and thus help us in communicating the dental health education in this covid era.
- E. **Printed material:**- Magazines, pamphlets, booklets and hand-outs have long been in use for health communication. They are aimed at those who can read. Their usefulness lies in the fact that they can convey detailed information. They can be produced in bulk for very little cost, and can be shared by others in the family and community.
- F. **Direct mailing:**- This is a new innovation in health communication in India. The intention is to reach the remote areas of the country with printed word (e.g., folders and newsletters and booklets on family planning, immunization and nutrition etc.). These are sent directly to village leaders, literate persons, panchayats and local bodies and others who are considered as opinion leaders. Direct mailing has been a successful mass media in creating public awareness. It is possibly the most personal of mass communication.

G. **Social media**:- Social media like twitter, facebook , instagram and youtube can be used to spread dental education in this covid era. Videos can be shared. Webinars are being conducted by various organizations like PGIMER etc for awareness among medical and dental staff as well as general people.

**Oral Health Programs include:**<sup>11</sup>

- oral health education,
- Assessments and screenings
- fluoride mouth rinse, and dental sealants.

**Oral Health Education**

Oral health education as a specific, identified subject is not mandated by state law or regulation. It is however, an appropriate part of school instruction and may be included locally as a component of the required comprehensive school health education curriculum. Resources and materials are available through the Oral Health Program. School health coordinators can assist school nurses with oral health education resources in the district.

**Oral Assessments and Screenings**

Rules outlining the guidelines for routine oral assessments and screenings guidelines have not been adopted to date. Oral health assessments are conducted as part of the Maine Integrated Youth Health Survey (MIYHS) every two years (odd years). School districts are chosen randomly to participate in the survey. School nurses may be asked to provide a screening of students in one or two grades, depending on the structure of the survey during that cycle. Training and support is available to the districts that agree to take part.

**Fluoride Mouth Rinse and Dental Sealants**

School oral health programs for fluoride mouth rinse and dental sealants are administered by local program directors who may be the school nurse, an administrator, school health coordinator, dentist or dental hygienist.

**Personnel**

For a health education program, the personal doing the work must be carefully considered.

- Dentist
- Dental hygiene teacher
- Dental hygienist, dental therapist, or dental nurse
- Health educator
- Other personals

**Dentist**

In the field of health education the dentist plays important role. Large cities are able to employ full time dental directors as chiefs of service in a health department. Dentist should be devoted to health education in smaller communities; however practicing dentists usually have to carry the load as a part time activity. These dentists may be called as dental health consultants, dental directors, or school dentists. They are usually appointed at the local health department, but also can be employed at department of education in a community where health education activities are separated from health services.

Dentist in the role of consultant, and a professional should be reasonably familiar with dental health education method; he should work with school administrators and community health council to organize an educational program which will reach to age groups. He must support dental hygienists and teachers in that area, dentist will seldom find himself in direct teaching relation with groups of children, so the dentist should study the vocabulary of the age groups he is addressing.

**Dental hygiene teacher**

Dental hygienists with additional training or experience in the field of education can function extremely well as a school dental health coordinator and can take part in actual educational activities, the level of training for such a position involves a bachelor's degree with some course in the principles of education, food and nutrition, dental hygiene, health education. The dental hygiene teacher functions best under general rather direct supervision. They can refer children to sources of dental care, both public and private, particularly where they can perform screening of individuals.

**Dental hygienist, dental therapist, or dental nurse**

The professionally trained dental auxiliary without specialized training in education cannot do a great work as a resource person and even as a coordinator of school dental health programs. In the absence of dental hygiene teacher should be able to provide dental health education and can talk to the class room teachers on their own, and supply them relevant literature, should be able to talk to the children directly in their respective classes, and should be able to perform dental prophylaxis, topical fluoride therapy, take part in dental inspection or treatment of school children, they have the opportunities of individual dental health teaching. They can have brief discussions on problems of dental hygiene and dental care with many children.

### **Health educator**

Health educator has a specialist's responsibility in all fields of health and is usually found serving school districts rather than individual schools. State education departments usually have requirements for certification in health education, courses in the principles of education, psychology for teachers and teaching methods. Health education should include human anatomy, growth and development, health, hygiene, food and nutrition, safety and first aid and health aspects of home and family life and the organization, administration and supervision of a school health program. There is no set rule on how to divide the load of dental health teaching and resources, work can be divided between dentist, dental auxiliary and the health educator, some time dental hygiene teacher can work as assistant to health educator.

### **Other personals**

Number of other school people can assist in dental health education program. Science teacher should be supplied with facts on dental development and dental diseases for use in biology classes. Physical education teacher must know how to prevent accidents to the teeth. The home economics teacher should be a position to help put dietary recommendations into actions. Various other personal can suggest various possible approaches to the dental health education in school setting.

### **Dental home<sup>12</sup>**

AAP's policy statement, "Oral health risk assessment timing and establishment of the dental home," represents a formal recognition of the need to identify and refer to a dentist, using risk assessment: children at high risk for oral disease, including CSHCN; children of mothers with high rates of tooth decay; children who sleep with a bottle or breastfeed during the night; and children from families with low incomes. Conversely, a population-based oral-health-management model seeks to align available and variable resources with population needs. The goal of the model is to keep children at low risk in the low-risk category through the provision of preventive services and education, and to eliminate or reduce factors that place children at high risk for tooth decay.

### **Dental society**

State and district dental society are playing an important role in the dental health education of the public. This society will be answerable to inquires from citizens and be able to promote an understanding of dental health in variety of situations. Contact not only with schools and with public through the use of mass media, including television, posters school dental hygiene teachers can be informed of new teaching aids which will help them in the dental health education programs. Information on water fluoridation can be broad casted.

### **Non dental medical personals**

Inclusion of oral health in the curriculum of non-dental health care providers complements the comprehensive care model of family medicine and has the potential of improving the overall health of patients. Oral health education for primary care physicians should be taught and educational strategies would be most effective and efficient in achieving learning and behavior change.

### **Barriers Operating in Health Education Programs<sup>13</sup>**

- Ethnic and cultural conflicts.
- Differences in meaning assigned to scientific terms by the layman and the professional.
- Negative aspects of the medical setting (physical features, status, relationships)
- Personal and group values (e.g., low level of importance placed on preventive dental care)
- Group memberships and attitudes (e.g., religious, political)
- Illiteracy: This limits all conceivable directions of original messages as well as feedback
- Poverty (cost of medical care)
- Technical unsophistication-scientific vs. unscientific treatment.
- Habit
- Availability of services: physical location and attitudes toward special groups.

- Lack of faith in treatment.
- Denial of existence of illness.
- Differing opinions.
- Safety of suggested procedures
- Transportation problems
- Attitudes toward body
- Fear, anxiety levels
- Education levels
- Generalized educational approach; lacking individual assessment of patient needs
- Insincerity of educator or patient

#### **Steps in Health education planning**<sup>7</sup>

- Collecting information on specific problems as seen by the community.
- Identification of the problem
- Deciding on priorities.
- Setting goals and measurable objectives.
- Assessment of resources.
- Consideration of possible solutions.
- Preparation of a plan of action:
  - What will be done
  - When
  - By whom
- Implementing the plan
- Monitoring and evaluating the degree to which stated objectives have been achieved.
- Reassessment of the process of planning.
- Planning and evaluation are essential for effective health education.

Health education work requires continuous evaluation, to measure the effectiveness of health education activities in achieving the stated objectives of the program.

#### **The American dental association has urged to:**

1. Take a more active role in stimulating dental health education in institutions such as schools, colleges, nursing schools, and schools of dental hygiene, schools of dental assisting.
2. Extend their own production of dental health education material.
3. Development of outlines of specific actions suggestions for local schools board considerations.

Dentists should be urged to

1. To become more active in community programs for dental health education, including serving on school boards where possible and nowadays online programs should be conducted.
2. To give more dental health education to patient in the chair side and techniques like SDF, Hall thechnique should be preffered if possible on pediatric patients.
3. To become more active in promoting community water fluoridation.

### **III. Conclusion**

Oral health education is the need of the hour in spite of advances made in the direction of prevention of oral diseases. Carefully planned health education based on educational theories relevant to the target population is mandatory. The educator should follow logical sequence of instruction bearing in mind the basic principles of health educator. The process should inform, motivate and provide learning opportunity for the learner. Evaluation should point out deficiencies so that realistic solutions can be given.<sup>14</sup>

Bacteria present in patients with severe COVID-19 are associated with the oral cavity and improved oral hygiene may play a part in reducing the risk of complications. This can be only done by providing proper oral health education to the society.<sup>6</sup>

During this pandemic oral health education can be improved, with the evolution and advancement of research protocols, e-oral health education and services, tele-dentistry, and clinical trials with flexible approaches to solutions. Online communication has become an important tool to modernize the approaches of dental educators.<sup>15</sup> Hence, they need to keep themselves updated with any new information regarding this disease.

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