

# A Review on Promoting Dental Care in Elderly Patients During COVID-19 Pandemic

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## ABSTRACT

There are many concerns according to the dental health care of elderly patients especially during the covid 19 pandemic. As the older people struggle with many challenges; they are at higher risk for this type of virus than the other ages. The purpose of this study was to review the performance of dental services for the elderly during the corona outbreak and to provide solutions related to oral health for them. Articles sited in Google Scholar, Science direct, PubMed during 2019 to 2024 were reviewed. As result, most findings indicate the importance of mobile and tele-dentistry in elderly patients. Most of the elderly patients avoid the treatment of dental problems during covid 19 pandemic due to fear of coronavirus, high dental costs, lack of access to appropriate services, and this causes extensive problems in their health. Therefore, it is recommended to provide practical solutions to facilitate the dental treatment of elderly patients.

## Introduction

The outbreak of the coronavirus in China in late 2019 has left the world facing an uncertain future. Coronaviruses are a large family of viruses that range from the common cold to more severe diseases such as SARS, MERS and COVID-19. Seven types of coronaviruses have been identified that can infect humans. With no definitive treatment or vaccine for this viral infection that can be transmitted to humans, the risk of the virus spreading worldwide is increasing. (Globally, 95% of deaths are reported in people over 60 years of age.) In addition, according to the statistics provided, out of every 10 deaths caused by Corona, 8 of the people had an underlying disease such as cardiovascular disease, high blood pressure, and diabetes [1]. The elderly population is one of the most vulnerable population groups when it comes to the coronavirus. Given the physiological, psychological, and therapeutic needs of elderly patients, it is essential to create a step-by-step protocol to better and more effectively deal with this disease [2]. With the increase in the elderly population in various societies, attention to this segment of society becomes doubly necessary. In this study, elderly age is considered to be 65 years and above. In the second half of the 20th century, the age composition of the population has changed dramatically, with more people living to older ages and the elderly population becoming older. This demographic

change will have a significant impact on the provision of public and dental health services, as well as on the providers of these services. Some older people have specific physical or mental conditions that require special attention in the healthcare setting [3]. With the spread of the coronavirus, 76% of dentists have stopped their activities, and even in active clinics, efforts are being made to provide more dental services to emergency patients. Changes in the way dentists monitor the oral health of the elderly could have positive effects on the future of geriatric care [4]. The coronavirus is usually spread from person to person, and can also be spread through direct transmission, such as coughing, sneezing, and inhaling respiratory droplets. Dental providers are at greater risk because they are more likely to be exposed to contaminated saliva from patients. Coronavirus can also be spread through other routes, such as direct contact with a patient's blood, oral and dental fluids, and through contaminated instruments. Therefore, if environmental hygiene in dentistry is not properly implemented, it can cause the elderly person to be infected with the coronavirus [5]. The dental community faces many challenges in the geriatric setting. Older adults with mobility limitations and underlying medical conditions generally do not take oral health seriously. In the COVID-19 pandemic, this may be due to fear of being in a dental environment and the risk of contracting COVID-19. Currently, treatment approaches

for the elderly, especially those with dementia, are difficult to follow. Prioritization of dental services for the elderly includes only preventive oral health care. The COVID-19 pandemic has presented older adults with many barriers to accessing oral health services, especially for vulnerable groups living in nursing homes [6]. To address the greater challenges of COVID-19, step-by-step solutions need to be designed to facilitate access to dental services for the elderly. Proper supervision of dental practices, training of a skilled workforce, reducing treatment costs, and encouraging prevention and maintenance of oral health will increase access to oral health services and improve the health of the population [4]. Protective measures should be provided for the activities of dentists. Because dental clinics are an important place for transmitting the coronavirus to people, the possibility of the elderly becoming infected increases if they visit and do not observe hygiene. These include paying attention to the risk of patient involvement during dental procedures, educating patients about preventive measures, infection control measures during treatment in clinics, preventive measures at different levels for dentists, and taking advantage of urgent treatment for patients. It is the dentist's responsibility to choose, with full knowledge, the most appropriate protective measures to reduce and control the risk of infection in dental procedures [7]. During the Corona period, the elderly are at risk of contracting this disease. On the other hand, the failure to follow the usual treatments of the elderly and the fear of being found in the hospital and dentist may create further risks to the health of the elderly. Therefore, the purpose of this research is to investigate the current conditions in dentistry for the elderly and how to deal with the current conditions.

## Methods and Materials

This study was a research study and its method was a review of the best evidence. The sources included articles and reliable internet portals. In order to conduct a thorough study, the sources were reviewed between January 2019 and December 2024. The topics used in the search were: Coronavirus and Dentistry, Dentistry and the Elderly, Coronavirus and the Elderly. The sources were collected using Google Scholar, ScienceDirect, PubMed, and Gate Research engines. The selection of articles was made according to the text of the articles and the opinions of the three authors of the article. Out of the 63 relevant articles, 12 articles that were the most relevant to geriatric dentistry during the coronavirus outbreak were selected and the findings of the articles were reviewed and analyzed.

## Results

In this section, some selected articles related to geriatric dentistry were reviewed. Janto et al. believe that the elderly face many barriers to accessing oral health services [8]. The presence of root caries, dry mouth, and other oral diseases affect the health of the elderly. Despite the fact that oral and dental diseases in the elderly are preventable and treatable, many elderly people do not seek necessary treatment. Many elderly people believe that tooth loss is a natural part of the aging process and cannot be prevented. Others are concerned about their oral and dental health and seek treatment in case of emergency.

Aghaei et al. state that some of the oral and dental hygiene problems for the elderly include: the use of dentures, dry mouth, root decay, and the inability of the elderly to maintain adequate

oral and dental hygiene [3]. In addition to existing diseases, New barriers have also been created by the widespread spread of the coronavirus, limiting older adults' access to dental care even more than before. Older adults are at higher risk of death from the coronavirus, and many dental procedures can increase this risk. As a result, older people are less likely to attend these centers due to fear of the virus. The effects of quarantine on the elderly have made it difficult for them to access the services they need. Marchini and Ettinger consider a major challenge in the COVID-19 pandemic to be the communication of older people with others [6]. Because the use of masks, due to poor vision and inability to lip-read, will face them with many difficulties in the initial treatment process. Disruption of oral and dental treatments for the elderly will cause serious health problems for them. In general, people are less likely to experience acute oral problems as they age, but failure to address acute problems and chronic oral and dental diseases can be problematic. The American Dental Association (ADA) says patients with immediate or evolving problems face new challenges in obtaining informed consent from patients, guardians, and caregivers during preoperative procedures and the use of teledentistry. On the other hand, teledentistry also poses another challenge for the elderly.

Elderly people do not communicate well with Internet-based software. Also, because many elderly people have sensory and cognitive impairments, it is difficult for them to communicate properly through software. Existing protocols for teledentistry are being developed, but they are often targeted at the younger population and need to be adapted to the elderly population.

For example, one of the questions in teledentistry software is related to pain level, requiring the patient to respond using a scale of 0 to 10 [9].

Haleem et al. also consider telemedicine to be one of the effective ways of dental treatment these days [10]. Telemedicine includes: 1- Telephone consultation: In this method, the patient or the healthcare provider speaks to the dental specialist over the phone. 2- Devices, smartphones and related applications: This method is very safe and convenient, and the patient's symptoms are checked in a timely manner by a specialist using a smartphone.

Fornaini and colleagues have shown in their studies that despite the advantages of teledentistry and the rapid expansion of this method, there are also limitations, such as the inexperience of specialists in using this method, their uncertainty in responding to patients, and the resistance of dental specialists to using this method, which prevent the benefit of this treatment method [11]. Awareness of teledentistry among dental surgeons should be increased by conducting continuing education programs and providing awareness about its importance and application during the COVID-19 pandemic.

Brain and Weintraub also state in their research that a good opportunity has arisen for the dental community to provide appropriate education to patients, move more towards preventing dental injuries and chronic oral diseases, and prevent unnecessary surgeries as much as possible [12]. This approach is also more effective for the entire community and improves oral health. Using teledentistry and electronic communication,

dentists support patients without time or place restrictions. This method is also a very effective way to address the lack of access during and after the Corona pandemic for the elderly.

Mobile phones can be used for education, counseling, and training, allowing providers to advise patients whether their dental problems require urgent or emergency care. McMichael et al. state that older adults often tend to underreport pain levels, so the threshold for initiating dental treatment using teledentistry should be adjusted to the older adults' self-reported pain levels [13].

Older adults with mild to moderate dementia are often unable to report the quality of their pain, and treatment should be tailored to this group by including questions about symptoms and nonverbal cues and feedback from their caregivers. The next step after teledentistry is to schedule an appointment with the dentist.

At this stage, the new norms of coronavirus control are also challenging for this group of patients. In the waiting room, the need to maintain social distancing, teach cough and sneeze etiquette, and use masks may be difficult or nearly impossible for older people with dementia. This may lead to increased demand for those patients who need to be treated at home.

But this is not practical for many dentists. In addition, if the person with dementia lives in a nursing home, these facilities certainly have limitations on the number of visits by health care providers. Chung also states that there is a need to adopt new methods of oral health and dentistry to meet the special needs of the elderly [14]. One of these methods is the provision of mobile dental services to the elderly, which will bring about great changes in the future of dentistry for the elderly. In a way, it will make the provision of services and follow-up of the oral health of the elderly faster.

This method also partially eliminates the service delivery gap of the traditional method and more elderly people benefit from oral and dental health services. Marchini [6] state that dental professionals' protective recommendations for treating patients include the use of face shields, N95 masks or similar respirators, and eye protection, which may be intimidating for older adults with dementia and make it more difficult to communicate with patients with cognitive impairment. On the other hand, the use of this equipment is also mandatory for maintaining protocols.

Paraguassu et al. state that elderly people consider oral health as a very personal activity and often do not take medical recommendations seriously [15]. Therefore, oral health care in elderly people is very complex. However, a number of elderly people also carefully follow the recommendations of dentists. Teaching the elderly about maintaining oral and dental hygiene facilitates the natural function of chewing and increases the desire to protect their teeth. In general, prevention, information, and proper care regarding oral and dental hygiene in the elderly are of great importance.

Gao et al. present the 5S method for the treatment and oral hygiene of the elderly [16]. This five-step method is an educational process that first familiarizes the elderly with the

best activities for maintaining oral hygiene. In the next step, it specifies the order of use of activities and hygiene materials for them. Then, it familiarizes them with the results of each of the activities they perform to maintain oral and dental hygiene. In the fourth stage, it strengthens the habit of taking care of oral and dental hygiene in them and ultimately helps maintain and maintain the general oral and dental hygiene of the elderly.

Sivaraman et al. believe that during the COVID-19 pandemic, for effective screening, diagnosis, and management of elderly patients against COVID-19, "five essential steps" are considered: - Recording of the patient's personal characteristics and main problem - Recording of dental, medical, and drug history - Assessment of clinical signs specific to COVID-19 - Treatment planning based on the main problem and urgency of treatment [17].

**Recommendations:** Before, during, and after dental treatment

On the other hand, Marchini et al. state that the increase in the number of emergency room visits in the elderly has created a high demand for providing comfort services, especially for patients who do not require dental surgery [6]. Anxiety management in the elderly is first pursued through non-pharmacological methods and creating mental peace for the elderly, and then through pharmacological methods in the case of cognitive disorders and lack of cooperation of the patient.

On the other hand, elderly people feel uncomfortable in unfamiliar places and may experience anxiety. Using these solutions can be highly effective in caring for elderly patients and protecting them from contracting the coronavirus.

## Discussion

Given the wide spread of the coronavirus worldwide and the risk to the elderly population, attention to the quality of care for the elderly and their lives is of double importance. The incidence of COVID-19 in the elderly has been reported to be higher than in other age groups [2]. One of the most important problems for the elderly during the COVID-19 pandemic is dental and oral diseases.

Dentists at this time should design and adhere to safety protocols much more seriously for specific groups, and only perform emergency treatments. The spread of Corona seems to be the biggest challenge that dentists and special care have ever faced. Planning at four levels of treatment should be done in dentistry, which includes emergency treatment, urgent treatment, non-routine treatment and routine treatment.

The increase in the number of dental emergencies is an example of this. Patients with learning disabilities and cognitive impairments often become anxious about attending the dentist in their current condition and avoid any treatment that would make them feel uneasy. As the number of dental emergencies is rapidly increasing, new ways to provide comfort to the elderly are essential. Especially for patients who do not require dental surgery. As a result, anxiety management in the elderly is initially pursued through non-pharmacological methods and then through pharmacological methods in case of cognitive disorders and lack of cooperation of the patient. On the other

hand, the elderly feel uncomfortable in unfamiliar places and may experience anxiety, therefore, treatment in their place of residence and mobile dentistry can be used [18]. Also, hygiene protocols and their observance by dentists cause problems for elderly people with cognitive limitations, and the process of establishing communication also faces problems. Therefore, it is necessary to properly inform the elderly and continue the treatment process. Increasing awareness of geriatrics among dental students is key to increasing the number of dentists in the workforce who have been trained in geriatric dentistry [10,13]. Many dentists may be reluctant to treat the elderly because they may think that they are not capable of maintaining their own oral health. Consequently, advanced geriatric dentistry training for dentists is essential [14]. With appropriate advertising and creating a useful platform, conditions can be created to create a favorable relationship between this age group and dentists.

In the current situation, timely diagnosis of oral and dental problems of the elderly and provision of preventive services are of great importance. In the first steps, these can be done using remote dentistry, mobile dentistry, online technicians, necessary measures can be taken for the elderly, and if necessary, their problems can be referred to dentistry.

Many studies have given the technological gap and the weakness of some elderly people in communicating with software related to remote dentistry, the need to expand infrastructure and educate the elderly in this regard is felt. On the other hand, for many elderly people who have mobility and cognitive problems, mobile dentistry can be very effective and important. At this time, dentists can decide on the type of treatment at four levels, emergency treatment, urgent treatment, non-routine treatment and routine treatment, based on the information they receive from the patient. Given the risks of contracting COVID-19 in the elderly, more attention should be focused on effective treatment of the elderly and their unnecessary presence in health and treatment centers should be prevented. As a result, patient identification, correct diagnosis of the type of assistance provided, and effective communication with the patient's companion are of particular importance [17,1].

Elderly people may need emergency treatment. Therefore, it is necessary to have emergency centers for their rapid treatment. Dentists should also provide practical solutions to maintain the health of the elderly [12].

Considering the main goal of this research in providing solutions to maintain the oral health of the elderly during the Corona pandemic, it is stated that currently, the follow-up of the oral health problems of the elderly should be examined using consultations with dentists and remotely.

Setting up mobile dentistry can also be effective for treating the elderly and special patients. This time provides the best opportunity for dentists to properly educate the elderly to prevent deep tooth decay and maintain their oral hygiene [17].

For the elderly who live in nursing homes or alone, a procedure should be considered so that the elderly person can be examined at their place of residence. On the other hand, the high costs of dentistry are another obstacle that prevents the elderly from

pursuing their treatment in the current situation, therefore the government and insurance centers have a duty to partially cover this problem by covering dental costs [18].

Given the sensitivity and specificity of the elderly, it is necessary to plan dental health and treatment measures for this age group in a fundamental way, because if not addressed in a timely manner, the demand for emergency treatments will increase. All the findings examined in this study point to the importance of maintaining oral and dental health for the elderly during the coronavirus pandemic and the solutions presented can make the treatment process of the elderly face a new and different way in the post-Corona era. Also, the current conditions create a basis for the elderly to become more familiar with preventive procedures.

Currently, the best way to address and resolve the problems caused by oral and dental diseases for this segment of society is to pay attention to the following:

1. Remote dentistry: Listening and compassionate care of the patient. The dentist must be able to assess the oral and dental hygiene routine to maintain and assess the immediate oral and dental health problems of the elderly. Remote dentistry is challenging for seniors due to the digital literacy gap between different generations, and many seniors have difficulty using technology.
2. The next step is to schedule an appointment for the elderly and provide the necessary recommendations for their attendance at the dental office. It is also mandatory for the elderly to have a companion.
3. Currently, non-surgical treatment methods, prevention, and superficial treatments are most often used for the elderly group.
4. For patients who use artificial teeth and have problems with speech, eating, etc., it is recommended:
  - Remove dentures from the mouth whenever they are not in special use.
  - Clean dentures with denture cleaners or chlorhexidine solution.
5. Home preventive recommendations for oral and dental hygiene in the elderly include:
  - Brush twice a day with fluoride toothpaste.
  - Clean between teeth with dental floss once a day.
  - Limit sugar intake if possible.
  - Avoid habits that may damage teeth, such as opening objects with your teeth, chewing sticky foods, and engaging in dangerous activities.
  - Follow good toothbrush practices, including washing hands before and after brushing, rinsing toothbrushes in hot water after use [19,20].

## Conclusion

According to the findings of this study, it is suggested that strategies for developing mobile dentistry for the elderly and establishing basic procedures for remote dentistry in Iran should be considered. Educational and awareness-raising procedures should be provided to the elderly to prevent oral and dental injuries and maintain hygiene.



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