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AN ANALYTICAL APPROACH BASED ON REVIEW STUDY FOR GERIATRIC DENTAL TECHNIQUE: A REVIEW

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Abstract- Dental consideration for geriatric patients has been expanding step by step. The treatment and analysis of geriatric patient is trying, as these patient have both fundamental and oral issue. There are fundamental illnesses which have oral appearances and in the event that patient has close to zero familiarity with the sickness, it very well may be analyzed or thought by the clinician after assessment and examination. This article portrays the foundational and oral changes in older patient. The existence assumption for people has been improved with expansion in number of geriatric individuals. it viewed as an ordinary, inescapable natural peculiarity. The investigation of the physical and mental changes which is episode to advanced age is called gerontology and care of matured is called clinical gerontology or geriatrics. Geriatric dentistry or gerodontics can likewise be characterized as the conveyance of dental consideration to more seasoned grown-ups including the finding, counteraction and treatment of issues related with typical maturing and age-related illnesses as a feature of an interdisciplinary group with other medical services experts.

1 INTRODUCTION

Gerodontology is the practice of providing dental care to the elderly by working as part of a multidisciplinary team with other health care professionals to diagnose, prevent, and treat issues related to normal aging and age-related diseases [1]. The World Health Organization (WHO) defines older adults in developed nations as those who are 65 years old or older. In developing nations like India, people over the age of 60 are considered to be elderly.

As the world's population ages rapidly due to technological advancements, improved medical care, and longer life expectancy, the proportion of older people will continue to rise, which is a positive trend. Dental conditions are the most common chronic condition, and chronic diseases play a significant role as the population ages.

As part of the comprehensive healthcare options available to seniors, the dentist plays a crucial role in preserving and improving dental health.

With a population of one billion, India is a vast nation. 7.6% of this is made up of people over 60. The oral health of elderly people is influenced by a number of factors. The Dentist India has a population density of 1:27,000 in urban areas and 1:300,000 in rural areas, with 80 percent of the elderly living in rural areas. 73% of the elderly are illiterate, and 40% of them live below the poverty line. The dependency ratio for the elderly is 12.26, and ninety percent of them do not receive social security. India has the highest incidence of oral cancer, which is considered a disease of old age. Oral cancers account for 13.5% of all body cancers. In rural areas, preventive dental care is virtually nonexistent, and in urban areas, it is severely limited.

2 EPIDEMIOLOGY AND GENERAL ASPECTS

Germany has a society with one of the world's oldest populations at this time. The German Federal Institute for Population Research's demographic studies show that the number of people 65 and older will rise to 28% in 2040 and 30% in 2060. This is a trend that is common in many other industrialized nations. The number of elderly and very old people receiving nursing care in Germany is also on the rise, reaching more than 3.4 million in 2017.

Epidemiological studies indicate that the dental status of the elderly and very old has changed in recent years. The average number of missing teeth among German seniors aged 65–74, excluding third molars, decreased from 21.9 in 1997 to 14.6 in 2014, from 17.8 in 2005. Still, removable dental prostheses (RDPs) are provided to more than 35% of German seniors between the ages of 65 and 74. For the first time, seniors aged 75 to 100 participated in the evaluations for the Fifth German Oral Health study in 2014. This accomplice highlighted a normal number of staying 10.2 teeth (barring the third molars), yet 44.3% experienced serious periodontitis as indicated by Focuses of Infectious prevention/American Relationship of Periodontology (CDC/AAP) rules. In addition, in the older seniors' cohort, edentulism was found in 47.1 percent of upper jaws and 34.4% of lower jaws, while 52% of people in need of care had edentulism. Regarding this aspect, the proportion of edentulous younger seniors between the ages of 65 and 74 has decreased from 24.8 percent in

1997 to 12.4 percent in 2014, down from 22.6 percent in 2005. According to recent extrapolations, the prevalence of edentulism in German seniors between the ages of 60 and 80 will decrease to 4.2% by 2030. These considerations highlight the fact that, despite having a greater number of natural teeth than in the past, seniors in Germany frequently suffer from severe periodontitis and frequently receive RDPs.

3. GENERAL ASPECTS OF DENTAL CARE AND TREATMENT IN ELDERLY PATIENTS

The onset of oral diseases and symptoms that are typical of older people, such as dry mouth, coincide with the increase in the number of drugs taken on a regular basis and the number of general diseases. In addition, there is a demand for dentists and dental staff who have been trained to deal with elderly and very old patients in a dental setting due to the difficulties in dental routine that are associated with the treatment of older patients. These difficulties can be physical (such as frailty, loss of mobility, hearing loss, presbyopia, or impaired manual skill and hand grip strength) or cognitive (such as memory loss, dementia, or Alzheimer's disease). The term "old and very old people" can also refer to younger seniors aged 65 to 74 years old and very old seniors aged over 100 years old, also known as "long-lived" people. As a result, the challenge for dentistry is coming up with ideas for dental care that can provide consistent dental care to people with varying OFCs over four decades. It is evident that this situation is accompanied by extremely diverse requirements for dental care, treatment, and office design and equipment.

Given the patient's individual OFC and potential limitations in clinical/radiological diagnostic procedures, the requirements for geriatric patients' dental care and treatment may differ from objectively required dental care and treatment (as determined by clinical and radiological diagnostics alone). This aspect necessitates the transformation of theoretical, objective treatment requirements derived from clinical and radiological findings into a relativized, all-encompassing treatment strategy. In a geriatric setting with patients who frequently exhibit reduced self-responsibility (OFC), it is evident that this strategy must be based on participatory decision-making. "Patients as informed consumers, helping them to make clinical decisions that optimize their personal oral health," is how this process defines them.

4. PROSTHETIC CARE AND TREATMENT IN GERIATRIC PATIENTS

Since extensive RDPs still have a high prevalence in this cohort, epidemiological data suggest that, despite improvements in oral health over the past few decades, extensive tooth loss is still prevalent in geriatric patients. Over dentures supported by root caps, clasp- and double crown-retained RDPs, and RDPs retained by extra coronal attachments with or without crowns are some of the current concepts for the design and retention of tooth-supported RDPs that are being pursued in Germany. It must be taken into contemplations that these ideas might additionally be partitioned into exceptionally unmistakable treatment approaches varying, for example, on the kind of retentive component utilized (e.g., for twofold crowns: either the individually employed restorative material (precious/non-precious alloy, ceramic, or polymer), which has a significant impact on the individual success and failure rates, or the galvanic, conical, or telescopic double crown with or without clearance fit).

5 NUTRITION AND ORAL HEALTH

The general and oral health of elderly people is greatly influenced by their diet, which must be balanced and appropriate. Diet is an important factor in disease prevention. It has been shown that overall wellbeing and nature of still up in the air by friendly help, financial status, culture and oral wellbeing. Protein calorie malnutrition (PCM) may gradually progress into moderate micronutrient deficiencies when nutrient intake does not meet nutritional requirements. This is more prevalent in the institutionalized elderly population (30-50%), whereas moderate micronutrient deficiencies are much more common in the independent elderly population (2-4%).

Kshetrimayum N, Reddy CV, Siddhana S, Manjunath M, Rudraswamy S, Sulavai S in 2010 conducted a cross-sectional study to determine whether nutritional status and oral health-related quality of life (OHRQoL) are linked in Mysore's institutionalized elderly population. The authors discovered that 31.9% of people were adequately fed, 52.5 percent were at risk of malnutrition, and 15.6% were malnourished. They likewise found that oral wellbeing related personal satisfaction was related with wholesome deficiency, and it requires a more prominent joining among dentistry and sustenance in the wellbeing advancement of more seasoned grown-ups.

Kumar D, Rastogi N, Madan in 2012 conducted a cross-sectional survey in Lucknow to determine whether a person's nutritional status and the number of teeth they had were correlated. Creators detailed that Weight file (BMI) had no connection with the dentition status of an individual, however supplement admission was straightforwardly connected with the quantity of back impeding sets of regular teeth. In addition, participants who did not have teeth were found to consume more saturated fat and cholesterol as well as fewer dietary and crude fibers than those who did.

5.1 Dental Caries Among Elders

When a susceptible tooth covered in cariogenic bacteria is frequently exposed to fermentable carbohydrates for a sufficient amount of time, dental caries is a multifactorial disease process. Caries development in older adults differs from that of younger people in that older adults have numerous additional risk factors that make them more likely to develop caries. The most significant negative factor in the elderly's oral health-related quality of life is tooth loss. Root caries is currently been considered as a significant dental general medical condition for the older.

This assertion is supported by three primary, interrelated arguments. First, in industrialized societies, life expectancy has been steadily rising from birth to 65. Second, there is a lot of evidence that periodontal disease gets worse with age because it gets worse over time. As a result, root caries may be predisposed in the majority of elderly adults due to gingival recession and alveolar bone loss. Finally, improved oral health is making older people retain more teeth, which means there are more exposed root surfaces that are susceptible to caries.

Shah N and Sundaram KR in 2003 conducted a community-based, cross-sectional study in New Delhi to assess the elderly population's experiences with dental caries and requirements for restorative treatment. That study included a total of 1240 elderly people over the age of 60. According to the authors, the study population had a high prevalence of caries, with carious teeth present in 676 (64.2%) of the elderly, filled teeth in 69 (6.6%), and recurrent decay in 17 (1.6%), making 70.4% of the elderly with carious experience. Only 2.7% of elderly people in urban areas had recurrent caries, while elderly people in rural areas had no restorations at all.

5.2 Prosthetic Status Among Elderly Population

Edentulism is the final result of a multifactorial process that involves biologic processes like caries, periodontal disease, pulpal pathology, trauma, and oral cancer. Edentulism is defined as the loss of all permanent teeth. As indicated by the world wellbeing association grown-ups ought to have at least 21 useful teeth to give the capacity to encounter a decent dietary admission without the requirement for dental replacement. Different studies reported a wide range of partial and complete edentulousness prevalence rates in the Indian population, ranging from 5.6% in children under the age of 6 to 91% in people over 65.

Shrivastav A, Bhambal A, Reddy V and Jain M in 2010 conducted a descriptive cross-sectional study to determine the dental prosthetic requirements of Bhopal city's geriatric residents. The majority of subjects, 101 (86.3%) for the upper arch and 103 (88.0%) for the lower arch, did not have a prosthesis, according to the findings. Bridge was found in three subjects, or 2.5%. There were 7 subjects (5.9%) and 4 subjects (3.4%) with upper and lower arch partial dentures, respectively. Only 5 subjects, or 4.2%, had a fully removable upper and lower arch denture. 78 (66.6%) and 89 (76.0%) of the 117 residents required prosthetics for the upper arch. The majority of subjects (41 percent) required a one-unit upper and lower arch prosthesis, followed by a full prosthesis, a multi-unit prosthesis, and a combination of one- and multi-unit prostheses. Full removable false teeth was expected by 19(16.2%) subjects for upper curve and 24(20.5%) for lower curve.

Vrinda SR, Darshana SN, Chartanya PH in 2010 conducted a study to determine the prosthetic status and prosthetic requirements of patients attending various Ahmadabad and Gandhinagar district hospitals. The study examined 510 individuals from various dental facilities. Out of 510, any sort of edentulousness was 322 (63%). 254 of them, or 49.8 percent, were only partially edentulous, while 68 of them, or 13.3%, were completely edentulous. Only 69 (13% of the total) had an upper arch prosthesis and only 80 (16%) had a lower arch prosthesis. Males had a need for any kind of upper and lower arch prosthesis at 55% and 60%, respectively. The need for a prosthesis in the upper and lower arch was 62% and 63%, respectively, in the lower social class group. According to the authors, the need for prosthetic treatment and prosthetic status increased with age.

Chhabra A, Chhabra N, Kabi D, Jain A in 2013 conducted a cross-sectional study in New Delhi to examine the dental health and treatment requirements of a Northern Indian elderly population. The study included 412 participants over the age of 60. The findings revealed that 75% of people had edentulism, with a gender difference of 69% and 81%, respectively. Ten percent had only natural teeth, ten percent had prosthetics, and eight percent wore removable dentures. The majority of subjects required new prostheses (50 percent), extractions (60 percent), and conservative treatments (25 percent). The study's sample of elderly people had a high unmet need for perceived oral care and dental treatment, according to the authors.

Kumar GA, Maheswar G, Malathi S, Sridevi K, Ratnakar P, Someshwar B in 2013 conducted a cross-sectional survey to determine the prosthetic status and requirements of elderly residents of Hyderabad's geriatric homes. A total of 174 people over the age of 60 participated in the study. The majority of the subjects—73 men (70.8 percent) and 53 women (74.6 percent)—lacked a prosthesis, according to the findings. Only 4.6 percent wore complete dentures, 21.1 percent wore removable partial dentures, and 10.9 percent wore single or multiple bridges. Nearly 82 percent of the participants required a prosthesis, with 83.5% being male and 63.7% being female. A one-piece prosthesis was required by 8% of subjects.

Eachempati P, Shenoy V, Jain N, Singh S A study was conducted in Mangalore in 2013 to determine the prevalence of Kennedy's classification, the status of any existing prosthodontic appliances, the subjects' awareness of various treatment options, and the treatment requirements of institutionalized elderly people. According to the findings, Kennedy's class I was the most common and class IV the least. Only 12.4% of the people who were looked at had prostheses on. The majority of the prosthodontic appliances were found to be in poor condition using the Nevalainen and Karslon indexes. Prosthodontic treatment was required by 86 percent of the participants. The available treatment options were unknown to 75% of the subjects interviewed.

6 ORAL HEALTH STATUS IN AGED

6.1 Nutrition in Old Age and its Implications for Oral Care

In order to improve the health and well-being of the elderly, it is essential to eat well. A person's physical and mental decline may be accelerated by inadequate nutrition. Nutritional status and health can be negatively impacted by poor oral health. Poor eating habits in the elderly have been caused by oral health issues. A decreased desire to eat or ability to eat may result from loose, painful teeth or dentures that don't fit well. Diet and nutrition should be taken into account as an integral part of the elderly's oral health assessment and management because they are closely linked and can further compromise oral cavity integrity.

Due to a decrease in the basal metabolic rate, which is caused by less exercise and less lean muscle mass, elderly people typically have lower calorie needs. Additionally, decreased appetite and food intake may result in inadequate calorie intake and, more frequently in females, inadequate intake of calcium, iron, and zinc. For an 80-year-old, the required calorie intake is approximately 8000 kJ (1900 kcal). A functioning older subject requires a protein admission of 0.97 g/kg of body weight each day. Tissue necrosis or inflammation, on the other hand, can lead to an increase in protein turnover and requirements. The majority of nutrients, including vitamins, are recommended in the same quantities for older people as for younger people. However, osteomalacia may develop in elderly people who are homebound and do not have access to sunlight due to a lack of vitamin D. Ascorbic acid, iron, and potassium are additional essential nutrients that older people require.5 Dental health is thought to be a significant factor in elderly health and nutrition. Chewing and detecting the flavor of foods are hampered by missing teeth and poorly fitting dentures.

7 RECOMMENDATIONS:

- Geriatric oral care training should be provided to healthcare providers in order to ensure that elderly patients have adequate oral health.
- Elderly patients should receive free dental care or treatment in all health centers.
- Elderly people who are housed in institutions should have their oral health taken care of.
- "Home dentistry or domiciliary dental care" is still uncommon in India, but it might be a good option.
- Diploma courses and undergraduate and postgraduate curricula should incorporate geriatric education.
- In the end, effective policies regarding elderly oral care ought to be developed by the government.

8 CONCLUSIONS

Geriatric patients' prosthetic treatment should be carefully planned, taking into account the possibility of rapid health changes. As a result, the variety of treatment options is frequently limited, highlighting the importance of simple, dependable, and sturdy prosthetic concepts. Regarding this aspect, it is important to keep in mind that relatives, nurses, caring staff, physicians, and dentists can all participate in the day-to-day dental care of elderly patients who are weak. OFC should be evaluated as the fundamental instrument for identifying the various treatment options when planning prosthetic treatment for elderly patients. Any decision regarding prosthetic treatment should be based on a participatory decision-making process.

According to the current review, elderly subjects in India had very poor oral health and prosthetic status, with a higher prevalence of oral diseases and conditions. As a result, immediate preventative measures should be taken to prevent their oral health from deteriorating.

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