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Oral health in vulnerable populations: challenges, strategies and evidence from the literature

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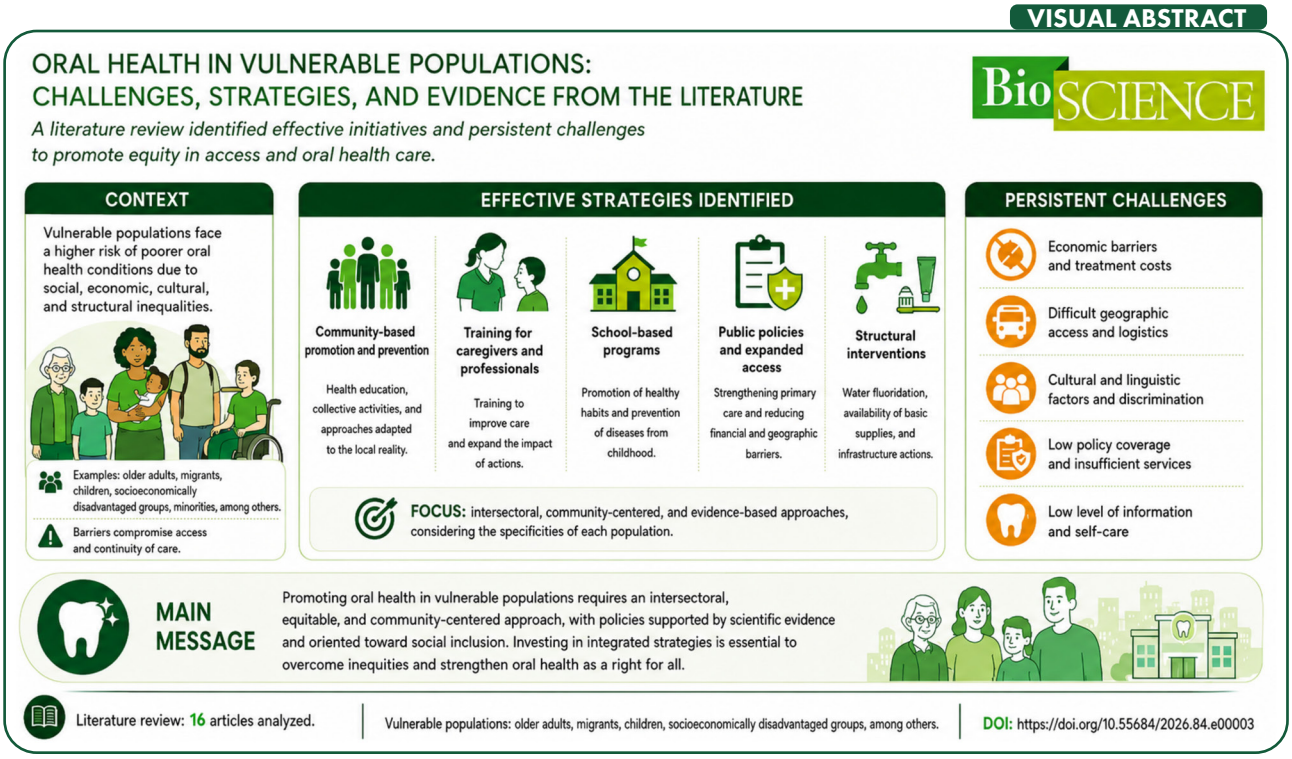
VISUAL ABSTRACT



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Central Message
The promotion of oral health is a fundamental strategy to mitigate the risks of health problems enhanced by social inequalities. It should involve educational, preventive, and awareness-raising actions aimed not only at improving oral health, but also at training individuals to adopt healthy habits. Several initiatives have been implemented around the world, focusing on approaches that consider the specificities and needs of these populations.

Perspective
The analysis of the literature allowed us to identify various initiatives aimed at promoting oral health in vulnerable populations, evidencing important advances, but also persistent challenges. Effective strategies highlighted include promotion and prevention actions at the community level, caregiver training, school programs, public policies to expand access, and structural interventions such as water fluoridation and the provision of basic supplies

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ABSTRACT

Introduction: Oral health is an essential component of general health and well-being, playing a crucial role in the quality of life of individuals. However, social, economic and cultural inequalities often result in unequal access to dental care, especially in vulnerable populations.

Objective: To identify in the existing literature databases on oral health promotion initiatives in vulnerable populations and to identify effective strategies and persistent challenges.

Method: We used 16 articles in this review, studies on oral health in vulnerable populations, such as the elderly, migrants, and children.

Results: The discussion about access to dental care for vulnerable populations reveals a complex scenario, in which several social, economic, cultural, and structural barriers compromise equity in access to oral health care.

Conclusion: The promotion of oral health in vulnerable populations requires an intersectoral, equitable, and community-centered approach, with policies supported by scientific evidence and oriented towards social inclusion. Investing in integrated strategies that consider the specific contexts of these populations is essential for overcoming inequities and strengthening oral health as an integral part of the right to health.

KEYWORDS: Vulnerable population. Oral health. Health promotion. Social inclusion.

INTRODUCTION

Oral health is an essential component of general health and well-being, playing a crucial role in the quality of life of individuals. However, social, economic and cultural inequalities often result in unequal access to dental care, especially in vulnerable populations.

The word vulnerable brings great debate about its definition and researchers believe there is little or no consensus. And they point out that different uses and understandings of the term "vulnerable" have implications for the framing of research questions, the allocation of resources, and the delivery of health care.[1,2]

The World Dental Federation – FDI (2019)[3] defines this population as people who are at higher risk of health care disparity due to their general condition or status, such as being a member of ethnic, religious, or linguistic minorities, children, the elderly, the socioeconomically disadvantaged, the under-insured, or those with certain medical conditions. They face significant barriers that limit their access to adequate oral health services, increasing the prevalence of oral diseases and compromising their overall health.

This population ends up not having access to traditional prevention and treatment services, so their health plummets with a higher prevalence of comorbidities that lead to premature death - called by some researchers as the "precipice of inequality". Some researchers have proposed a new type of health care called "inclusion health," aimed at "correcting health and social inequalities among the most vulnerable and marginalized in the community."[4,5]

The promotion of oral health is a fundamental strategy to mitigate the risks of diseases that enhance these inequalities. It involves educational, preventive, and awareness-raising actions that aim not only to improve oral health, but also to train individuals to adopt healthy habits. Several initiatives have been implemented around the world, focusing on approaches that consider the specificities and needs of these populations.

However, despite the efforts, the effectiveness of interventions and programs to promote oral health in vulnerable populations is still a topic that lacks systematic analysis. The existing literature points to the need to understand which strategies have been most effective, what challenges are faced in the implementation of these initiatives, and how the results can be optimized.

This article reviews the existing literature on oral health promotion initiatives in vulnerable populations, with the aim of investigating the effectiveness of different approaches in vulnerable patients (children, institutionalized older adults, people with disabilities, and low-income communities), exploring the challenges faced in implementing these approaches, and factors that contribute to the success or failure of these programs.

METHOD

Systematic review of the literature seeking to answer the question: "What are the possible strategies for the dental care of patients in vulnerable situations?" The databases chosen for the search were PubMed (https://pubmed.ncbi.nlm.nih.gov/) and Scielo (https://www.scielo.br/). The following descriptors were used: "oral health", "health promotion", "vulnerable populations" and "interventions", according to DeCS/MeSH (https://decs.bvsalud.org/).

The results were filtered based on inclusion criteria, which consisted of: studies published in the last 10 years; research that addressed interventions or programs to promote oral health in vulnerable populations; and articles available in English and Spanish. Scientific articles that were not related to the subject studied, technical documents, legislation, manuals, letters, publications of conference proceedings, dissertations, theses, comments, opinions, correspondence, editorials and reports, articles in other languages, and those not available for reading were excluded.

Data were extracted in a systematic manner, recording the following information from each selected study: authors and year of publication, study objective, methodology used, main results and conclusions, and recommendations for oral health practice in vulnerable populations.

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RESULT

The search resulted in 32 articles according to the keywords used. Of these, 16 were selected after applying the inclusion and exclusion criteria. By reading the articles in full, the data were synthesized with the following parameters: main author and main findings (Table).

DISCUSSION

The vulnerable population faces barriers to accessing dental care. There are several social, cultural, economic, structural and geographical factors. These barriers also influence the definition of "vulnerable people", with different opinions among the authors.[1,3,5,11] Katz et al. in 20201 explored in their article ways in which the definition of vulnerable can serve to confuse the nature of public health, and if it does, help to understand the ways in which society is structured.

The World Dental Federation in 2019[3] recognizes the different needs in vulnerable countries and populations, as well as the difference in their health systems, and encourages various actions such as education, research and finance, in order to improve access to care and reduce inequality in oral health.

In children, inequalities of carious lesions are observed by family education and income levels in a vulnerable population. There is a limitation regarding the daily use of fluoride toothpastes, regular visits to the dentist, and factors related to nutrition and diet. Martignon et al. in 2024[14] observed in their study significant socioeconomic inequalities in the number of tooth surfaces affected by carious lesions, and reported that it can be considered an initial marker of vulnerability to the development of more extensive lesions. This finding poses challenges in terms of the

TABLE — Synthesis of the main findings on oral health promotion in vulnerable populations

	Authors (Year)	Key findings
1	Visschere L et al. (2016)[6]	The greatest need for treatment was observed in the older age group and the highest mean bacterial plaque was observed in the elderly with greater dependence on care. Oral health in the elderly in Belgium is poor. The need for restorative and prosthetic treatment is high, and oral hygiene levels are problematic. Age, residence, and care dependence seem to have some influence on oral health parameters.
2	Watt RG et al. (2019)[7]	Action to improve access to and quality of dental care for vulnerable adults and to tackle oral health inequalities among vulnerable adults. The burden of oral diseases disproportionately affects vulnerable groups compared to the general population. Addressing these unfair, unfair and preventable inequalities in oral health requires coordinated strategic action at clinical and population levels. Collectively, the dental profession has a responsibility to provide appropriate, high-quality clinical care and to be an advocate for supportive policies to protect and promote good oral health.
3	Velázquez-Cayón RT et al. (2022)[8]	Prevalence of dental caries is the main situation along with the lack of good oral habits and commitment to health and oral care. The group of people between 15 and 20 years of age in Morocco was considered to have a higher incidence of oral diseases (dental caries and periodontal diseases). They also had fundamental deficiencies related to dental care and hygiene habits, as well as those related to the quality and type of food.
4	Macdonald ME et al. (2022)[9]	They proposed solutions for research and practice, including co-engagement and co-production with peoples who were vulnerable. In doing so, the paper advances the potential of oral public health to advance research and practice that involves complexity in our work with vulnerable populations.
5	Fernández-Bonet J (2023)[10]	The Vasco Government gradually implemented the Children's Dental Care Program (PADI) and the fluoridation of water for public consumption. These measures have managed to reduce the rates of childhood caries in the territory, until they are among the lowest in Europe. Before giving the green light to the possible fluorization situation, it is essential to accurately determine the carious condition of the most vulnerable population. To this end, rigorous prospective studies should be carried out, both in the adult and child populations, and compare the CAO and SiC indices of the city with and without access to the fluoridated water network.
6	Wisner B (2016)[11]	Among the many readings of vulnerability, the economic policy/ecological policy perspective provides deep insight into the role of global capitalism and the resulting underdevelopment it supports. The many other approaches to vulnerability, the range of other frameworks, models, metrics, and tools discussed are useful, but they only inform palliative measures. They do not reveal the root causes of vulnerability and therefore cannot point to reforms and transformations that can change a system based on greed, conflict and the destruction of nature. A participatory approach to vulnerability will not change the world in the short term, but multitudinous struggles in this and other domains of daily life – health, food, energy, biodiversity, shelter, transport and more – can eventually coalesce into a critical mass of resistance to current underdevelopment and positive affirmation of concrete alternatives.
7	Patel R et al. (2019)[12]	Two nursing homes were available for program delivery, which resulted in the training of 64% (n = 87) of the care team. The training program involved videos and resources and was delivered flexibly with the support of an oral health educator and a dental therapist. There was an improvement in self-reported knowledge and confidence after training; however, only 54% (n = 45) completed the post-training questionnaire. This study suggests that co-producing an oral care training package for nursing home staff is possible and welcome, but challenging in this complex and changing environment. More work is needed to explore the feasibility, sustainability, and impact of doing so.
8	Mejía R et al. (2020)[13]	The population that benefited the most was the vulnerable. The most attended were: in terms of gender, female; age group, children between 3 and 8 years old and adults aged 36 years and over. The most commonly performed dental procedure in children was dental prophylaxis, and in adults, supragingival scaling. The application of the curriculum of the Dentistry course focused on health promotion and contextualized learning from its use for the development of the community makes it an entity with greater social commitment. The community that receives the benefits becomes an active body in the processes of oral health promotion. Vulnerable and displaced populations are receptive to the oral clinical treatments offered to them.
9	Martignon S (2024)[14]	Approximately one-third of the children included in this study exhibited tooth surfaces affected by moderate/extensive caries, while 84% exhibited early caries. The estimate indicated an absolute difference of 12.4% in the prevalence of moderate/extensive carious lesions among children living in households with the lowest levels of education compared to the highest. These children were also 6.7 times more likely to exhibit early cavities compared to those living in households with higher levels of education. Significant socioeconomic inequalities in early childhood caries have been observed in these vulnerable populations, highlighting the importance of upstream and downstream interventions that raise awareness among stakeholders and improve community and individual practices to address this.
10	Freeman R et al. (2020)[5]	While oral health continues to improve globally, an important consequence of this approach is that it exacerbates the social exclusion that many people are already experiencing due to the constellation of economic, political, cultural, and individual factors. In contrast, based on the theoretical literature on social exclusion, intersectionality, and otherness, we suggest that dentistry could act as an agent of social inclusion as a more responsive and comprehensive form of oral health care and service delivery. This article advances a theoretical framework for inclusive oral health and an action plan to show how inclusive oral health can become a solution in the arsenal to address the global phenomena of inequalities in oral health, and inclusive is supported by theories of social exclusion, intersectionality, and otherness. We proposed an inclusive oral health framework for all those interested in helping people marginalized by social exclusion. We believe that it is by providing theoretical framework to situate a compelling policy agenda, along with an action plan for new service systems based on research evidence, that the core principles of inclusive oral health can ensure that dentistry will become an agent to address the global phenomena of extreme oral health and the social inequalities that follow social exclusion.
11	FDI World Dental Federation (2020)[3]	Unfortunately, the enormous technological and scientific advances that have recently progressed to address many dental conditions are not uniformly available to all populations and the underserved and vulnerable face persistent and systemic barriers to accessing oral health care. These barriers are numerous and complex and include, among others, social, cultural, economic, structural and geographical factors. This policy statement presents vision for access to adequate oral health care for underserved and vulnerable populations throughout the human life cycle. FDI recognizes the distinct and varied needs of underserved and vulnerable populations from different countries and the vast differences in their health systems. However, this statement encourages oral health advocates and dental professionals to take action on behalf of underserved and vulnerable populations and to take the necessary steps to improve access to oral health care, reduce oral health inequality, address oral health illiteracy, promote the concept of Universal Health Coverage, and improve oral health.
12	Katz AS et al. (2019)[1]	In our experience, researchers often use the word "vulnerable" strategically to attract resources, political interest, and public concern. At the same time, we propose that the vagueness associated with terms such as "vulnerable" masks the structural nature of public health problems. This vagueness can serve the political function of obscuring power relations and limiting the discussion of transformational change.

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development of public policies and strategies to improve oral health. World Health Organization in 2019[15] recognizes primary care teams as fundamental in the prevention and control of caries, as it ensures the promotion and maintenance of health. Pitts et al. in 2019[16], report that the International Association of Pediatric Dentistry defined some preventive actions to raise awareness, such as avoiding sugar intake before the age of two; limiting sugar intake after this age; brushing teeth twice a day using 1000 ppm of fluoride toothpaste; and visiting the dentist from the first year of life.

In 1980, Fernández-Bonet[10] surveyed those who had a very high rate of dental caries, which is a great concern of the population. To lessen the impact, the government implemented the Children's Dental Care Program and water fluoridation. The program initially offered annual follow-up and dental care for permanent teeth for schoolchildren aged 7 to 15 years. Given the fact that carious lesions develop gradually, it is important to expand the program and adopt measures to raise awareness and encourage families, changing the individual approach to one that prioritizes prevention and promotion.

Oral health in the elderly is of great importance, as it interferes with speech and eating, in addition to interfering with appearance and social life.[8] Elderly people who live in nursing homes or with caregivers at home have limitations in taking care of their oral health, which ultimately leads to poor oral health and the need for dental care.[12] Visschere et al. in 2016[6], considered people who lived in nursing homes or home care homes as vulnerable, and observed that oral health was very poor among them, which could be influenced by age, where they lived, and dependence on care. They suggested the development of actions for new dental services with an emphasis on prevention and health promotion and better access to dental care. The biggest concern and challenge to be faced is to identify the elderly to prevent oral health from worsening.

Patel et al. in 2019[12] suggested a training program for caregivers in nursing homes because they observed, based on evidence, that many dental diseases were preventable; Therefore, counseling and interventions for the elderly and their caregivers would be vital. They recognize the need for oral care of these elderly, but did not have training or skills, justifying the lack of oral health care due to restrictions in the workplace (lack of instruments), difficulties in communication, problems in the behavior of the elderly, lack of time and low priority to oral health.

Watt et al. in 2019[7] suggested two actions for the vulnerable population. The first aimed to improve access to and quality of dental care by prioritizing the assessment of dental needs in certain regions so that they were adequately addressed, providing the necessary treatment and monitoring, and prevention to reduce future risk of disease. The other aimed to tackle inequalities in oral health, then talk about the progressive policies that are needed to address economic disadvantage and broaden participation and access to education.

The discussion about access to dental care for vulnerable populations reveals a complex scenario, in which several social, economic, cultural, and structural barriers compromise equity in access to oral health care. Vulnerability is not a single concept, it varies according to different contexts and approaches.

Freeman et al. in 2020[5] defined vulnerability as social exclusion, and then talked about how dentistry could be acting in the social inclusion of this population. This inclusion could be in three ways: 1) with health and social assistance policies requiring oral health services in addition to medical care; 2) with research to identify the reconfiguration of dental services and support the development of innovative solutions; and 3) with dental education, which would be training at undergraduate and graduate levels to train qualified professionals and raise awareness about social exclusion, to reduce difficulties in dental services.

As Macdonald et al. point out in 2022[9], oral health research and practice in vulnerable populations are not new subjects; However, growth in this area encourages new research. They also report three actions to seek solutions with the vulnerable population, namely; 1) dialogue and knowing from the population how they would like them to be; 2) inclusion of this vulnerable population in actions aimed at helping them; and 3) integrate discourse on social and structural determinants, education, and policy on vulnerability.

CONCLUSION

The analysis of the literature allowed us to identify various initiatives aimed at promoting oral health in vulnerable populations, evidencing important advances, but also persistent challenges. The effective strategies highlighted include promotion and prevention actions at the community level, training of caregivers, school programs, public policies to expand access, and structural interventions such as water fluoridation and the provision of basic inputs. However, significant challenges persist, such as the scarcity of resources, the low priority given to oral health in certain public policies, and the need for professional training aimed at working in contexts of vulnerability. Thus, the promotion of oral health in vulnerable populations requires an intersectoral, equitable, and community-centered approach, with policies supported by scientific evidence and oriented towards social inclusion.

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