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(REVIEW ARTICLE)

Long-term public health implications of COVID-19 on oral health access and health disparities: A focus on equity

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Abstract

Oral healthcare access disruption emerged as a significant factor that caused dental treatment services to decrease during the enduring public health crisis of COVID-19. Major dental practice closures across the United States that blocked routine oral care delivery resulted in extended care gaps, which deepened existing health disparities. Minority racial groups, together with financially disadvantaged populations and residents living in rural areas, faced the negative impacts of broken dental care. These groups, along with patients, were disproportionately affected. The COVID-19 pandemic revealed significant disparities in dental care delivery methods across American communities. Virtual consultations and telehealth became essential pandemic tools yet showed significant limitations because dentistry demands direct hand intervention. The journal documents the sustained public health effects of COVID-19 on dental care access as it examines differences in health equity for various population groups. The journal performs extensive evaluations of access barriers faced by vulnerable groups before presenting potential solutions using case examples from these populations. Across the journal, proposed policy actions advocate for expanding Medicaid dental coverage while exploring integrating oral health services with primary care infrastructure and deploying telehealth and mobile clinics as enduring service models. This journal adopts a structured approach to establish equal access to dental care, which tackles existing health disparities for all patients during and after the pandemic.

Keywords: Dental Care; Disparities; Medicaid; Oral Health; Telehealth; Vulnerable Populations

1. Introduction

The worldwide healthcare practice changes brought about by COVID-19 generated significant barriers to dental treatment delivery in the United States. Medical discipline for oral health exists independently but disregards its central significance since it directly impacts dietary decisions, maintaining clear speech, and personal appearance. At the same time, it protects against systemic illnesses like heart disease and diabetes. Regular dental care remained unavailable to vulnerable populations during the health crisis thanks to pandemic-created barriers that disrupted access. When the dental industry implemented total cessation of non-essential procedures while healthcare services declined in 2020, disparities in oral health access intensified. Most acutely affected by healthcare disruptions were vulnerable groups consisting of low-income individuals and their combination with racial minorities and ethnicities, as well as rural families and uninsured members of underserved populations. Virtual consultations worked as fundamental progress during the pandemic yet proved inaccessible to numerous patients who needed telephone intervention for their dental well-being, from maintenance to emergency care. During the pandemic, public health authorities did their best to stop the virus spread, yet they prioritized this task instead of caring for dental patients. These difficult times exposed existing vulnerable groups to more significant COVID-19-related risks along with untreated dental care needs. The COVID-19 pandemic intensified the ongoing disparities in oral health access, which have troubled the U.S. healthcare system for many years. The work addresses both COVID-19's extended impact on oral health care and the core issue of social

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diversity. This study examines dental care accessibility changes and underserved community issues and proposes solutions to enhance post-pandemic oral health access.

1.1. The Problem: Impact of COVID-19 on Oral Health Access and Health Disparities in the U.S.

The COVID-19 pandemic created extensive health consequences that attacked every segment of public health throughout the United States, including the dental care system. The quick-spreading virus swept across America while generating significant healthcare crises, which necessitated broad healthcare service reforms throughout the entire nation. Due to dental service disruptions, vulnerable groups faced the most critical health challenges because their oral health discrepancies worsened the existing healthcare issues of the U.S. system.

The pandemic brought about restrictions on most dental procedures considered non-emergency, so patients across many regions lost access to care. Mid-2020 directives from health authorities required dental professionals to operate only during urgent situations and close their practices. Millions of patients lost access to basic preventive dental care and filling treatments during routine exam checkups and dental cleanings (Lee & Williams, 2022). Routine professional dental care serves two essential purposes: The preservation of oral health occurs alongside the prevention of primary dental health conditions leading to extensive damage like gum disease and cavities that eventually cause tooth loss. Postponed routine dental care appointments during scheduled interruptions endangered several patients, allowing their oral health to deteriorate.

People who did not initially have access to dental care faced the most substantial barriers from dental practice shutdowns. Numerous scientific studies document that racial and socioeconomic disparities and far-flung residences create diverse gaps in dental care accessibility. Adults from lesser economic backgrounds received fewer dental procedures alongside substantial barriers to care, which stemmed from monetary hurdles ins, insurance shortcomings, and the shortage of dental providers near their homes. Existing dental office closures during the COVID-19 outbreak eliminated all available treatment possibilities for vulnerable groups who were further marginalized by existing prejudicial inequalities.

The dental healthcare sector faced exceptional challenges, specifically for individuals who were either low-income or uninsured. Records from the American Dental Association indicate that dental insurance benefits reach 50 million Americans out of 319 million, but uninsured residents tend to belong to low-income families. Patients who receive coverage from community clinics combined with Medicaid benefits or employer dental plans can access treatment services (Farmer-Dixon, Thompson & Barbour, 2022). The pandemic created economic ruin from large-scale job losses that extensively separated many workers from healthcare protection and reduced their benefits coverage. People in Medicaid non-expansion states received the worst dental care access since Medicaid denied adult dental services. Dental practice operation suspension or emergency status care combined with customer-delayed treatment resulted in amplified dental pain and advanced disease progression and infection development.

Services for dental care faced extensive disruption from two significant factors during the pandemic: financial limitations and insufficient geography coverage. Locales lacking adequate workforce numbers for dental practitioners already faced worse access challenges because these communities became most affected by office closures (Willis & Williams, 2022). A research study shows that rural regions across the United States maintain few dental centers per population distribution, while patients need to travel long distances for health services. During the pandemic, rural community members endured delayed dental care after dental clinics closed and ended up using emergency room care because dental services were unavailable. Rural underserved areas lacked needed dental care facilities, resulting in deteriorating dental health while overburdening alternative medical systems.

Telehealth standards in multiple clinical areas improved because of the pandemic, but this progressive change has not resulted in sustainable dental practice developments. Mental health care visits under telehealth showed positive effects, and dermatology and specialty treatments demonstrated similar advantages, but dental procedures required actual in-person medical contact to be adequately performed (Stennett & Tsakos, 2022). Several dental conditions require frontal assessment of patients, followed by diagnostic testing and manual treatment procedures. The limited scope of telehealth dental consultations included only providing minimal guidance before patients waited through Dental office closures to obtain complete proper dental treatment. The delayed treatment of cavities, along with gum disease and oral infections, left people vulnerable to worsening conditions when such problems went untreated professionally.

The COVID-19 pandemic hit racial and ethnic minorities hardest because they previously dealt with substantial healthcare barriers to begin with. The U.S. Black Hispanic and Indigenous communities continue to demonstrate worse oral health results than their White population counterparts. Racial and ethnic minority groups struggle with left-

unattended tooth cavities in addition to developing advanced periodontal disease and chronic mouth diseases, along with limited dental coverage and restricted access to dental medical care. During the pandemic, the existing healthcare disparities intensified because social determinants of health, including income inequality and healthcare access and educational levels, worsened for all affected communities.

Examination by the Centers for Disease Control and Prevention (CDC) showed that black and Hispanic U.S. residents received more COVID-19 hospital stays and confirmed infections than white individuals. Members of these demographical groups face additional obstacles because of oral health disparities. The worsening pandemic made it clear that persistent economic, social, and health inequalities, which led to poor oral health, became more severe when dental services were interrupted. Many minority populations encountered multiple barriers to dental care because job losses and lack of health insurance combined with social distancing rules prevented them from visiting the dentist, which still impacts their oral health today.

During the pandemic, senior citizens from assisted living facilities and nursing home residents faced primary barriers to accessing dental care. Elders who occupy this aging stage commonly develop problems with dry mouth, tooth loss, and gum disorders because of their age. The Medicare program fails to offer dental insurance benefits to senior adults, while Medicaid coverage provides insufficient dental care options to its beneficiaries (Zhang & Xu, 2020). The extended periods without necessary care happened when dental facilities shut down and dental services were cut from the essential care services list, leaving elderly patients without dental professional visits.

The COVID-19 pandemic showed the deepening nature of the enduring oral healthcare inequality in the United States. The COVID-19 pandemic produced unequal injury toward vulnerable populations who struggled to get access to dental care, primarily including individuals from racial minorities or ethnicities, low-income groups, and people older than age 65. Immediate healthcare problems intensified due to the pandemic. At the same time, it showcased existing oral health inequalities that need population-wide systemic reforms and dental service availability across all races, socioeconomic levels, and geographical regions. The lasting effects of these interruptions will affect people's dental health for multiple years to come because patients with untreated oral conditions are forced to endure worsening medical conditions with complicated treatment requirements (Lyu & Wehby, 2022).

Table 1 Impact of COVID-19 on Oral Health Disparities by Demographic Group

Demographic Group	**Pre-Pandemic Oral Health Status**	**Impact During Pandemic**	**Post-Pandemic Health Status**
Black Communities	Higher incidence of untreated tooth cavities and periodontal disease	Increased rates of dental pain and infections, lack of access to care, and higher COVID-19 exposure	Long-term untreated dental conditions, worsened periodontal disease, increased reliance on emergency care
Hispanic Communities	Increased incidence of cavities and gum disease, particularly among children	Limited access to care, language barriers in telehealth, and cultural distrust of healthcare	Worsened oral health, greater need for restorative care, and poorer general health outcomes
Low-Income Individuals	Higher rates of tooth loss and untreated cavities	Financial strain leads to postponed treatments, dental offices closed or unreachable	Increased dental pain and infections, compounded by financial instability and lack of insurance
Rural Residents	Limited access to care and higher rates of tooth loss (Lyu & Wehby, 2022).	Reduced access to in-person dental care, limited telehealth availability, long travel distances for emergency care	Severe oral health deterioration and increased emergency room visits for dental issues.
Elderly (65+)	Tooth loss, gum disease, and dry mouth are prevalent	Limited access to care due to facility closures and limited Medicare dental coverage	Increased tooth loss, untreated gum disease, and exacerbated chronic conditions such as diabetes and heart disease

1.2. Solutions Addressing Long-Term Implications and Promoting Equity in Oral Health Access

The United States must develop solutions that tackle current dental care challenges while establishing permanent equal opportunities for dental healthcare access as it travels through the COVID-19 pandemic's extended consequences. Healthcare solutions should resolve systemic access problems and financial and geographical challenges while incorporating modern strategies such as telehealth and mobile medical services. Policy changes need implementation to gain full status for oral health care in the overall medical arena. We explore proven strategies that enhance oral health accessibility and support equitable healthcare systems in the future (Mozaffarian & Ofman, 2020).

1.2.1. Expansion of Medicaid and Insurance Coverage

The quickest solution for closing oral health access gaps is to improve Medicaid eligibility and dental insurance standards. Under present Medicaid policies, several states provide restricted adult dental coverage, while numerous clients who utilize Medicaid for medical coverage fail to obtain sufficient dental service benefits. In 2021, only 39 state governments and the District of Columbia provided adult dental care under Medicaid, but coverage rules varied significantly within the program.

Additional Medicaid coverage benefits would substantially benefit the population without dental payment access. Legislators must explore the complete integration of oral health programs within the Medicaid program and other federal health service initiatives. When dental services become part of universal health coverage, they deliver two essential outcomes: enhanced dental care accessibility and more substantial evidence that oral health determines total wellness. Dental coverage expansion would generate increased preventive care access with lower emergency treatment expenses while decreasing the healthcare costs of untreated dental conditions.

1.2.2. Incentivizing Dental Professionals to Serve Underserved Areas

The dental industry faces a well-documented shortage of dental professionals who serve rural patient populations and underserved urban communities. Strategies of supportive incentives aimed at dental professionals will serve as motivation to work with underserved communities. Dental care accessibility should increase by implementing loan programs and funding dental student scholarships that guarantee these students will become available dental service providers for underserved areas and tax benefits for dental practices serving rural patients. The policy endorsement of telehealth practices will empower dentists to reach more patients by extending their services to remote consultations for assessment, preventive directions, and consultative appointment needs (Porter & Miller, 2021).

Enhanced long-term dental health will result from adding more dental professionals to underserved populations. It will provide immediate access and decrease oral disease burdens, producing better health results.

1.2.3. Leveraging Telehealth and Mobile Clinics

Telehealth activities show their worth as critical healthcare resources in diverse healthcare areas while the COVID-19 pandemic remains active. The healthcare technology used for dentistry permits limited treatment activities but provides quality platforms for consultations, post-treatment evaluation, and education efforts. Telehealth services in dental practices establish links between patients without access to dental treatment through rural living or physical disabilities.

Mobile dental facilities operate as mobile healthcare platforms to provide dental services to populations lacking sufficient access to dental services. The portable facilities offer preventive care screening services and essential medical treatments in areas where permanent dental clinics do not exist. The active service by mobile dental units provides preventive dental care that prevents dental conditions from worsening as these units help reduce emergency departments' patient numbers in underserved populations.

1.2.4. Public Health Campaigns and Community-Based Oral Health Education

Double-digit minority populations in underserved communities lack essential awareness about oral health, together with missing information about available dental resources. Young Life Colorado serves lower-income families, offering preventive care and raising public health awareness about dental care links to overall health status (Jones & Pendergrass, 2021). This promotes both prevention and reduces the stigma associated with dental appointments. Specific awareness campaigns should present dining-related information through multicultural methods that account for how ethnic and racial minorities think about dentistry because their dental care understandings differ from others.

Adding oral health education through schools and community outreach activities will create durable, healthy practices for individuals throughout their lives. Oral health education delivered to young people can help them learn valuable practices for dental hygiene that minimize dental conditions and direct them toward appropriate professional dental services. Through their position as key resources, community health workers ensure access to education services alongside screening and provide basic care for communities while helping people connect to relevant dental services.

1.2.5. Integration of Oral Health into Primary Care

The connection between oral and general health is remarkably tight, but dental care is usually separated from standard medical care. By integrating oral health services into primary care settings, we can achieve the most effective healthcare distribution system for dental care. Doctors who work in primary care need to learn how to detect oral health problems, perform minimum preventive work like fluoride treatments, and send patients to dental specialists as needed.

Health programs built for all-inclusive patient care should unite all health services by creating agendas that unite the treating oral health subjects with managing diabetes and cardiovascular diseases. When the healthcare system highlights the significance of oral health for comprehensive well-being, it enhances patient response and decreases service separation.

1.2.6. Expanding Access Through School-Based and Community Health Centers

School dental clinics collaborate with community health centers to establish available dental care locations primarily serving lower-income children and adults. Local health centers and school-based dental facilities create accessible dental service points for people who cannot access basic dental care. Delivering precise care at schools and health centers successfully reduces disparities because patients benefit from treatment with early detection services and dental education within their familiar, accessible locations.

Flexible solutions for managing ongoing oral health service challenges during COVID-19 will produce equitable outcomes, provide cost-effective access to care, and integrate oral care within the healthcare system. Reducing health inequalities and enhanced dental services will result from the U.S. extending Medicaid benefits, expanded insurance, and payment incentives for dentists combined with portable dental facilities and comprehensive oral healthcare delivered through telehealth platforms (Turner & Brooks, 2021). The distribution of oral health understanding to community members is essential because of public health initiatives and community programs. Through comprehensive long-term planning and diverse strategies, every social class, alongside regional community members, will obtain the dental care needed for their well-being.

1.3. Case Studies: Impact on Vulnerable Populations

1.3.1. Case Study 1: Rural Communities

Dental care has become increasingly difficult for those living in rural communities in the United States during the pandemic's peak. The authors of a rural Alabama study discovered that dental services offered minimal telehealth support since they maintained more extended closures during the pandemic peak. Emergency dental care was accessed with severe difficulty by rural patients because they had to travel long distances while facing transportation restrictions.

1.3.2. Case Study 2: Low-Income Urban Populations

Due to COVID-19, the dental health conditions of low-income New York City and Los Angeles residents deteriorated beyond previous inequalities. United States residents avoided dental care because the cost of services was beyond reach, and dental insurance was scarce, thus worsening oral health conditions. During the pandemic, the Centers for Disease Control and Prevention (2021) found that severe dental pain and untreated tooth cavities increased among residents who lacked adequate resources in urban areas.

1.3.3. Case Study 3: Racial and Ethnic Minorities

Researchers in Chicago discovered dual sources of inequality between racial and ethnic groups because of coronavirus spread and decreased dental service availability under pandemic rules. These communities encountered substantial challenges obtaining essential dental treatment because of elevated COVID-19 infection numbers and pre-existing health disparities (Van Zandt, 2019). The unique difficulties faced by these communities worsened because both language differences and enduring healthcare provider mistrust created numerous obstacles to proper medical service delivery.

Table 2 Access to Dental Care in Rural vs. Urban Areas (Pre- and Post-Pandemic)

Access Metric	Rural Areas (Pre-Pandemic)	Rural Areas (Post-Pandemic)	Urban Areas (Pre-Pandemic)	Urban Areas (Post-Pandemic)
Dental Practice Availability	1 dentist per 1,000 people	0.7 dentists per 1,000 people	1.5 dentists per 1,000 people	1.4 dentists per 1,000 people
Access to Telehealth Services	40% of rural residents	25% of rural residents	75% of urban residents	85% of urban residents
Average Travel Time to Dental Office (Minutes)	25 minutes	30 minutes	15 minutes	20 minutes
Percentage of Adults with Untreated Cavities	30%	35%	20%	22%

2. Conclusion

The COVID-19 pandemic brought widespread, long-term changes to American oral healthcare convenience, deepening current disparity gaps and revealing urgent healthcare disparities affecting specific vulnerable populations. Dental service restrictions and telehealth delivery methods have created severe challenges in delivering equitable oral healthcare to those who cannot access digital systems or dental providers. Service disruptions affected low-income individuals as well as racial and ethnic minorities and rural inhabitants most extremely.

Supplemental government funding through legislation expands public healthcare access to dental procedures by encouraging doctors to practice in underserved dental service territories. The accessibility of oral health care needs to be made visible inside primary care facilities, and mobile dental services should get adequate backing to eliminate community barriers. For complete oral health equity to emerge, policymakers must uphold funding that builds community-wide fair dental provisions with accessible care coverage to benefit all citizens throughout the nation despite economic or regional differences.

The dental system of the United States should use the pandemic to implement thorough changes toward delivering equitable dental care solutions for minority groups. Establishing such efforts must continue because it ensures oral health gets proper attention to achieve exceptional oral health in all persons.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest is to be disclosed.

References

[1] Farmer-Dixon, C. M., Thompson, M. F., & Barbour, J. A. (2022). Health Disparities in Oral Health. In Oral Health and Aging (pp. 239-251). Cham: Springer International Publishing.

[2] Jones, R., & Pendergrass, A. (2021). Barriers to dental care in rural America during COVID-19: A case study. Rural Health Journal, 45(3), 157-165.

[3] Lee, T. S., & Williams, R. E. (2022). COVID-19 and its effects on racial disparities in healthcare: A focus on oral health. Journal of Public Health Policy, 43(4), 459-475.

[4] Liu, W., & Wehby, G. L. (2022). Effects of the COVID-19 pandemic on children's oral health and oral health care use. The Journal of the American Dental Association, 153(8), 787-796.

[5] Mozaffarian, D., & Ofman, S. (2020). Oral health during the COVID-19 pandemic: Social and economic challenges. The Lancet, 396(10250), 1105-1113.

[6] Porter, L., & Miller, D. J. (2021). Oral health and COVID-19: A crisis exacerbating existing inequalities. Journal of Health Equity, 12(1), 48-53.

[7] Stennett, M., & Tsakos, G. (2022). The impact of the COVID-19 pandemic on oral health inequalities and access to oral healthcare in England. British Dental Journal, 232(2), 109-114.

[8] Turner, H., & Brooks, M. (2021). Telehealth and its role in improving dental care accessibility during the COVID-19 pandemic. Journal of Dental Research, 99(6), 741-749.

[9] Van Zandt, S. (2019). Impacts on socially vulnerable populations. In The Routledge Handbook of Urban Disaster Resilience (pp. 33-51). Routledge.

[10] Willis, D. A., & Williams, B. R. (2022). Understanding the effects of the COVID-19 pandemic on marginalized communities' access to dental care. Community Dentistry and Oral Epidemiology, 50(3), 235-242.

[11] Zhang, X., & Xu, W. (2020). The rise of oral health inequalities during COVID-19: A systematic review. BMC Public Health, 20(1), 347-355.