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Captivating Observational TikTok Stories Highlighting the Controversies of Fluoridated Water

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ABSTRACT

Background: *Choosing to drink tap water is a wise decision for various reasons. It is regulated, cost-effective, environmentally friendly, and essential for both public health and bodily functions, such as hydration and temperature control. Tap water undergoes rigorous purification processes and thorough testing, ensuring it meets the standards set by the Environmental Protection Agency. This ensures that it is a safe and economical way to stay hydrated while helping to ward off illness.*

Methods: *Included the analysis of social media data related to dental health and fluoride narratives on TikTok. Additionally, statistical data from the ten states with the highest fluoridation levels and the ten states with the lowest levels were analyzed to assess the correlation between fluoridated water and dental caries prevalence in individuals under 18 years of age, as well as the relationship with the percentage of oral issues and dentist-to-population ratios in those states.*

Results: *The TikTok narratives contributed to an expanded discussion within the article. The analysis reveals a general correlation between higher fluoride coverage and a lower prevalence of oral health issues, although some exceptions were observed. The dentist-to-population ratios provide an additional layer of complexity, showing that states with higher numbers of dentists do not always correlate with better oral health outcomes.*

Conclusion: *In summary, there is a pressing need for more dental health influencers to promote oral health awareness and highlight the advantages of fluoridated water on social media. Additionally, further investigation into the connection between fluoridated water and oral health concerns is essential, especially since the limited number of dentists exacerbates the existing shortage of dental services.*

Keywords

Fluoride, Fluoridated water, Varnish, Oral health, TikTok, #dentalhealth.

Introduction

Water filtration has undergone significant evolution, from ancient practices such as boiling and filtration to modern regulations and advanced technologies [1]. Early civilizations relied on natural resources, such as rivers and wells, and used simple methods to improve water quality. Over time, advancements in understanding waterborne diseases and scientific progress led to more effective treatment and distribution systems [2].

The discovery made by John Snow, establishing a connection between a contaminated water well and a cholera outbreak in London, underscored the critical significance of water quality in

disease prevention [3]. Meanwhile, Louis Pasteur's germ theory provided a foundational understanding of waterborne diseases and the role of microorganisms in their transmission. According to the US National Research Council Safe Drinking Water Committee [4], in the early 20th century, the widespread adoption of chlorine disinfection marked a pivotal advancement in the sterilization of drinking water, as numerous cities across the United States began to implement water filtration and chlorination protocols.

The "Colorado brown stain" led to the first water fluoridation program in Grand Rapids, Michigan, in 1945. Dentists, including Frederick McKay and G.V. Black, observed an unusual brown discoloration on the teeth of numerous residents. Notably, individuals exhibiting this discoloration experienced significantly reduced rates of dental caries. Subsequent research indicated that these stains resulted from naturally occurring fluoride present in the water supply. It was determined that regulated levels of fluoride could enhance dental enamel and aid in the prevention of cavities. According to the National Institute of Dental and Craniofacial Research, this discovery sparked interest in the potential of fluoride to strengthen teeth and prevent cavities, even at lower, non-staining levels.

Building on the success of the pilot study conducted in Colorado, water fluoridation was widely adopted in the United States and other countries, becoming a significant public health initiative. The US 1974 Public Health Reports state that these initiatives significantly lowered tooth decay rates among residents and bolstered overall oral health. Furthermore, water fluoridation proves to be cost-effective, even for smaller communities, ultimately saving money for both families and the healthcare system.

Fluoride is a naturally occurring mineral that can be found in water, soil, and rocks. It is often added to drinking water and plays a crucial role in various dental products, including toothpaste. As a key component of fluorine—the 13th most abundant element in the Earth's crust—fluoride is present in many natural water sources, including groundwater, freshwater, and seawater [5].

Commonly referred to as water fluoridation, the practice of adding fluoride to public water supplies aims to prevent tooth decay. Additionally, fluoride is a vital ingredient in toothpaste, mouthwash, and other dental care products, as it helps to strengthen tooth enamel and reduce the risk of cavities [6]. The federal government plays a crucial role in ensuring our drinking water is safe by establishing and enforcing national standards for the maximum allowable levels of fluoridation.

Social media platforms, including TikTok, Reddit, Instagram, and Facebook, have significantly influenced the promotion of various issues, products, musical trends, and comedic content through influencers [7]. A prominent example is Dr. Ben Winters, known as "The Bentist," who has over 20 million followers and is recognized for his engaging dental-related content.

TikTok serves as a platform for creating, sharing, and discovering short videos. As reported by TikTok CEO Shou Chew in January 2024, the platform has more than 2 billion active monthly users worldwide. The TikTok eMarketer estimates that by 2025, TikTok will have approximately 117.9 million monthly active users in the United States, representing 32.9% of the population (Tiktok.com).

This study examined the correlation between the consumption of fluoridated water and the prevalence of dental caries among individuals under the age of 18, taking into account the variations in the adoption of fluoridated water across different states in the United States. Health professionals, public health researchers, dental influencers, and policymakers must be aware of the benefits of fluoridated water as well as the impact that the shortage of dentists has on the US population.

Methods

TikTok data was acquired utilizing the services of botster.io. This software platform enables users to create and deploy pre-built mini 'bots' for data extraction, monitoring, and other automated tasks, all without the need for programming expertise. An account was established and verified by following the necessary instructions, specifically by selecting the Google Search Scraper Bot to initiate the "Start Bot" function for word scraping. Following the process, the job was appropriately named, and the save location was designated. Hashtags pertinent to fluoridated water in the US identified on TikTok were included for download. These hashtags included #dentalhealth, #fluoride, #dentist, #dentalhygienist, #dentalassistant, #dentistry, #pediatricdentistry, #fluoridetoothpaste, #dentalhygiene, #dentalcare, #oralhealth, and #oralhygiene, as well as #waterfluoridation.

Botster.io is a no-code platform offering pre-built bots for data extraction, monitoring, and automation. Users can scrape data from websites, check traffic, track keyword mentions, and automate repetitive tasks. It aims to save time and boost productivity for businesses and individuals. The platform operates on a credit-based payment system for bot usage.

A free account allows for a limited number of results. To access a greater quantity of narratives, a monthly subscription fee of $25 is required before using the bot. Within minutes, 100 narratives were successfully downloaded and archived as a CSV file, which included summaries of TikTok narratives related to water fluoridation. In a subsequent attempt to download the top 300 results, only 29 threads were retrieved, most of which had already been included in the first download.

To examine the correlation between fluoridated water and the prevalence of dental caries among individuals under 18 years of age, statistical data from both the ten states with the highest levels of fluoridation and the ten states with the lowest levels were analyzed. This information was obtained from the Centers for Disease Control and Prevention's 2020 Water Fluoridation Statistics. The state analysis encompasses various factors, including

population (state and <18), the number of dentists practicing, and the percentage of individuals experiencing oral health issues.

Results

The analysis of topics within the 100 reviewed narratives revealed a significant interest in various aspects of fluoridated water. Inquiries were made regarding the *types of fluoride*, alternatives to conventional toothpaste, and the *benefits* and *controversies* surrounding fluoride usage, as well as the potential risks associated with *excessive consumption*. While specific postings emphasized the role of dentists in promoting dental hygiene and the *oral health of children,* a select few highlighted the importance of dental hygienists within the field of dentistry. Awareness and understanding of fluoride treatment are essential. Although one or two discussions touched upon *dental fluorosis* and *neurological risks*, the majority of postings centered on inquiries regarding fluoride, specifically "how-to" questions involving mouth guards, daily renewal processes, *fluoride varnish* application, or protocols for fluoride removal following dental visits.

Dental Influencers

Prominent oral health and dental influencers include Dr. Milad Shadrooh, also known as "The Smile Dentist," known for cosmetic dentistry; Dr. Ben Winter, or "The Bentist," who specializes in veneers and cosmetic procedures; and Dr. Mark Burhenne, who shares insights into preventative care and is the author of "The 8-Hour Sleep Paradox". Other notable figures include Dr. Joyce Kahng and Dr. Desiree Yazdan, known for their aesthetic focus and extensive social media followings.

Dental professionals, such as Dr. Ben Winters, leverage social media to change the conversation around dentistry through concise videos that offer orthodontic tips and promote oral health awareness. His efforts inspire millions to prioritize dental health. With its extensive reach, TikTok presents a unique opportunity for dental professionals to engage with younger audiences and promote positive dental health initiatives.

Analysis by State

According to the 2020 National Water Fluoridation Statistics taken by the Centers for Disease Control and Prevention (CDC) Water Fluoridation Reporting System as of December 31, 2020, the District of Columbia exhibits the highest usage of fluoride, with a remarkable 100% prevalence, while the average usage among the top ten states stands at 96%. In contrast, the state of Ohio follows with a usage rate of 93 percent. On the other hand, Wyoming and Utah each show a fluoridated water usage exceeding 50 percent. The average for the bottom ten states is notably lower, at 35 percent, with Hawaii recording the lowest usage at a mere 8.5 percent [8].

Top Ten States with High Use of Fluoridated Water

As shown in Table 1A, the examination of oral health issues in relation to fluoride utilization indicates that within the top ten states exhibiting the highest percentages of fluoridated water, the prevalence of oral health concerns ranges from 16% in South Dakota, Kentucky, and Illinois to 8% in Virginia. Conversely, the bottom ten states present a more varied spectrum, with oral health issues ranging from 19% in Wyoming to 11% in Hawaii and New Jersey.

Notable states demonstrating high fluoride exposure alongside increased oral health issues include South Dakota (94% fluoridation, 16% oral health concerns), Kentucky (100% fluoridation, 15% oral health concerns), Illinois (98% fluoridation, 15% oral health concerns), and Maryland (94% fluoridation, 15% oral health concerns). These states are clustered at the upper end of the spectrum regarding oral health issues, despite having substantial coverage for fluoridation.

States characterized by moderate oral health issues in high-fluoride environments encompass Washington, D.C. (100% fluoridation, 14% oral health issues) and Ohio (93% fluoridation, 13% oral health issues).

In contrast, states exhibiting the lowest prevalence of oral health issues in high-fluoride regions include Minnesota (99% fluoridation, 12% oral health issues), North Dakota (97% fluoridation, 12%), Georgia (95% fluoridation, 12%), and Virginia (96% fluoridation, 8%). These states demonstrate the most favorable outcomes regarding oral health.

Top Ten States with Low Use of Fluoridated Water

As indicated in Table 1B, Wyoming ranks among the top ten states exhibiting significant oral health challenges, with a fluoride prevalence of 56% and 19% of the population experiencing oral

Table 1A: Top 10 States with High Percentage of Fluoridated Water (2023 data).

State	Population (2023)	Population (0-18 Years)	# of Dentists	Dr. to Pop Ratio	% Use Fluoride	% Oral Health Issues
South Dakota	918,305	221898 (24%)	483	1901	93.8	16
Kentucky	4,550,595	1016895 (22%)	2,492	1826	99.9	15
Illinois	12,642,259	2705522 (21%)	8,536	1481	98.4	15
Maryland	6,217,062	1361916 (22%)	4,197	1481	93.7	15
Washington DC	687,324	126592 (18%)	1,083	635	100	14
Ohio	11,824,034	2578254 (22%)	5,836	2026	92.7	13
Minnesota	5,753,048	1300934 (23%)	3,352	1716	98.8	12
North Dakota	789,047	184734 (23%)	396	1993	96.5	12
Georgia	11,064,432	2538681 (23%)	5,196	2129	94.9	12
Virginia	8,734,685	1881554 (22%)	5,559	1571	95.5	8

Table 1B: Top 10 States with Low Percentage of Fluoridated Water (2023 data).

State	Population (2023)	Population (0-18 Years)	# of Dentists	Dr. to Pop Ratio	% Use Fluoride	% Oral Health Issues
Wyoming	585,067	129,549 (22%)	306	1912	56	19
Oregon	4,253,653	831,830 (20%)	2,693	1580	26	16
Louisiana	4,588,071	1,067,149 (23%)	2,188	2097	38	16
Alaska	736,510	175,507 (24%)	583	1263	42	16
Utah	3,443,222	933,152 (27%)	2,042	1686	51	15
Montana	1,131,302	2,356,51 (21%)	640	1768	31	15
Idaho	1,971,122	467,342 (24%)	1,058	1863	31	13
New Hampshire	1,402,199	2,520,50 (18%)	867	1617	46	12
New Jersey	9,379,642	2,010,290 (21%)	7,227	1298	16	11
Hawaii	1,441,387	293,613 (20%)	1,110	1299	9	11

health issues. States classified as having moderately high oral health concerns include Oregon, with 26% fluoridation and 16% oral issues; Louisiana, with 38% fluoridation and 16%; and Alaska, which reports 42% fluoridation alongside 16% oral health issues.

In the middle range, Utah, with a fluoridation rate of 51% and 15% oral health issues, presents an oral health profile that is comparable to that of Idaho, which has a fluoridation rate of 31% and 13% of the population facing oral health challenges, notwithstanding their differing levels of fluoridation. Montana, with 31% fluoride and 15% oral health issues, also falls within this category.

Conversely, the states with the lowest incidence of oral health issues include New Hampshire, with 46% fluoride and 12% oral health concerns; New Jersey, reporting 16% fluoride and 11%; and Hawaii, which has the lowest figures, at 9% fluoride and 11% oral health issues.

Dentist to Population Ratio

The distribution of dental professionals in relation to state populations exhibits notable variations. In states characterized by high fluoride levels, Washington, D.C. demonstrates the highest concentration, with 1,083 dentists serving a population of approximately 687,000, resulting in a dentist-to-population ratio of 1:635. Maryland and Illinois exhibit comparable ratios of 1:1,481, despite discrepancies in their respective population sizes, which are 6.2 million and 12.6 million. Virginia presents a favorable ratio of 1:1,571, while Minnesota follows closely with a ratio of 1:1,716.

Conversely, South Dakota (1:1,901), North Dakota (1:1,993), and Ohio (1:2,026) exhibit considerably lower numbers of dentists per capita in comparison to their counterparts. Kentucky maintains a dentist-to-population density of 1:1,826, while Georgia reflects a relatively less favorable ratio at 1:2,129.

Low-fluoride states include New Jersey, which has a population of 9.3 million and a total of 7,227 dentists, resulting in a dentist-to-population ratio of 1:1,298. This ratio is commendable, particularly given the state's low rate of fluoridation. Hawaii presents a comparable situation with a ratio of 1:1,299, followed closely by Alaska at 1:1,263. Oregon exhibits a ratio of 1:1,580, while New Hampshire and Montana have ratios of 1:1,617 and 1:1,768, respectively, reflecting intermediate dentist availability. States such as Idaho (1:1,863), Wyoming (1:1,912), and Louisiana (1:2,097) demonstrate a lower number of dentists per capita. Utah occupies a position between these extremes, with a ratio of 1:1,686.

Discussion

Water fluoridation has been implemented in various communities for decades as a public health strategy aimed at reducing the incidence of dental caries. Despite its widespread use, the practice continues to spark controversy among different groups [9].

This study examined the relationship between the consumption of fluoridated water and the prevalence of dental caries in individuals under 18 years of age. It took into account the differing levels of fluoridated water adoption across various states in the US, the availability of dental professionals, and the role of social media platforms like TikTok in discussing, asking questions, raising concerns, and sharing information about fluoride-related topics.

Fluoridated water is enhanced with the fluoride ion, which is typically added through various fluoride compounds such as sodium fluoride, sodium fluorosilicate, or fluorosilicic acid, the latter being a liquid form derived from fluorosilicic acid. It is important to note that fluoride can also occur naturally in water due to the erosion of fluoride-rich geological formations [5]. However, the fluoridation process in the US is carefully regulated and monitored by the states to ensure it effectively protects public health.

Fluoride minerals strengthen teeth and prevent cavities. Different types of fluoride are topical, stannous, acidulated phosphate, and varnish. Topical fluoride includes sodium fluoride, the most common and widely used form, found in toothpaste, mouthwash, and professional fluoride treatments. Also available in toothpastes, mouthwashes, and gels, stannous fluoride is a compound of tin and fluorine used in oral hygiene products to strengthen enamel, prevent tooth decay, and combat gingivitis and plaque. Dentists use acidulated phosphate fluoride in professional fluoride treatments. Fluoride varnish is a clear, sticky coating applied to teeth during dental exams to provide a high concentration of fluoride [10,11].

Fluorides, often referred to as systemic fluorides, can be ingested orally, subsequently absorbed into the bloodstream, and

incorporated into the development of teeth, thereby providing pre-eruptive strength. Additionally, these fluorides contribute to the saliva, offering ongoing topical benefits. Examples of systemic fluoride include fluoride tablets, drops, and supplements designed to provide fluoride through ingestion [12]. Fluoridated water, which contains added fluoride, plays a significant role in strengthening teeth during their developmental stage [13]. Dentists evaluate individual requirements and oral health histories to prescribe the most appropriate type of fluoride for each patient.

Frederick McKay and G.V. Black uncovered the significance of fluoride in dental health in the early 1900s. These dentists found that residents of Colorado Springs had brown stains on their teeth but low levels of tooth decay. They also discovered that the stains were due to high fluoride levels in the water, which also helped protect against cavities, leading to the development of water fluoridation and fluoride-based dental products [14].

The advantages of fluoride for children are significant and multifaceted, including the establishment of a durable and healthy smile that can last throughout one's lifetime. Fluoride helps rebuild and strengthen tooth enamel, the outer layer of the tooth, making it more resistant to the acids produced by bacteria that cause cavities. For children aged 1 to 8 years, fluoride helps strengthen the developing permanent teeth beneath the gums. For older children, fluoride helps enhance tooth enamel and, in certain instances, may aid in its remineralization. Consequently, this leads to a reduction in the prevalence and severity of cavities, a decreased necessity for dental fillings or extractions, and an overall reduction in tooth decay [11,13,15,16].

Neurological Risks

A limited body of research exists concerning the mental and emotional consequences associated with fluoride exposure, and a consensus has not been established regarding the mechanisms behind its neurotoxic effects [7,18,19]. However, Adkins and Brunst have identified that fluoride possesses the potential to induce mitochondrial damage, which encompasses a reduction in circulating mitochondrial DNA content, dysregulation of mitochondrial biogenesis, and loss of mitochondrial integrity. Moreover, the National Toxicology Program asserts that an extensive body of evidence accumulated over several decades links impaired mitochondrial function to various neurodevelopmental conditions, including autism spectrum disorder (ASD), intellectual disabilities, and Rett syndrome.

Fallacies and Controversies

The effectiveness of community prevention methods for tooth decay can vary significantly. Water fluoridation, in particular, has sparked considerable debate over its benefits and the strength of the evidence supporting it. Discussions continue regarding the potential risks associated with fluoridation, the legal implications of categorizing it as a form of medical treatment, and the ethical issues involved in implementing mass public health interventions. The first notable controversy regarding fluoridation emerged in Wisconsin in 1950, highlighting the complexities involved in this public health measure [20,21]. As a result, the 2024 presidential debates, along with Robert F. Kennedy Jr.'s appointment as Secretary of Health and Human Services under President Donald Trump, have sparked renewed discussions about the science behind fluoridated water.

The Environmental Protection Agency (EPA), under the Safe Drinking Water Act of 1974, sets federal standards for maximum fluoride levels in public water systems to mitigate risks of excessive exposure [22]. There are two types of standards: a legally binding primary standard and a non-enforceable secondary standard. If fluoride levels exceed the primary standard, the EPA can take legal action; exceeding the secondary standard requires public notification within 12 months. The EPA allows states to fulfill specific criteria to take on regulatory authority, enabling them to set their own fluoride limits, provided those limits are at least as stringent as the federal standards [5].

Excessive intake of any substance can lead to adverse consequences. Fluoride is recognized for its role in strengthening tooth enamel and bones, and is commonly incorporated into toothpaste, mouthwash, and drinking water to help combat tooth decay. Nevertheless, excessive exposure, particularly during the critical period of tooth development, may result in dental fluorosis. Key contributors to fluorosis include the consumption of water with elevated fluoride levels, the overuse of fluoride supplements, and the inadvertent ingestion of significant amounts of fluoride toothpaste [14,23,24].

Fluoride Regulation

To establish a safe and effective level of fluoride that prevents cavities by strengthening teeth, while also safeguarding against the risks associated with excessive exposure, such as dental fluorosis, the United States federal government has set maximum allowable concentrations. The Environmental Protection Agency (EPA) has defined a Maximum Contaminant Level Goal (MCLG) of 4 milligrams per liter (mg/L) and a Maximum Contaminant Level (MCL) of 4 mg/L for fluoride in drinking water. The EPA's MCL aims to reduce the risks of bone disease and dental fluorosis, which is characterized by mottling and pitting of tooth enamel. In contrast, the Centers for Disease Control and Prevention (CDC) recommends maintaining a fluoride concentration of 0.7 mg/L to prevent tooth decay and promote oral health effectively [25,26].

The precise number of states implementing fluoridated water treatment varies, as the decision to fluoridate is made at the local level. The CDC reported that as of 2022, approximately 62.8% of the total U.S. population, and 72% of individuals connected to community water systems, received fluoridated water. While some states enforce mandates for fluoridation, others have lower participation rates among communities, resulting in significant disparities in access to fluoridated water throughout the country.

Not all US states believe in fluoridated water. In March 2025, Utah made headlines as the first state to implement a ban on

public water fluoridation. Florida followed this decision in May 2025, which became the second state to prohibit this practice. Both bans were driven by rising concerns over potential health risks associated with fluoridation, as well as growing opposition to community water fluoridation programs that have long been utilized to reduce tooth decay. The hypothesis that fluoridated water reduces the incidence of oral cavities is a topic of ongoing debate. Factors such as a shortage of dental professionals, an increasing preference for bottled water over tap water, and concerns related to water contamination can complicate the assessment of fluoride's effectiveness in promoting oral health.

Doctor to Population Ratio

It is essential to review the dentist-to-population ratio as a benchmark for estimating the number of doctors needed, with the US targeting specific ratios to ensure adequate healthcare coverage for its population. The American Dental Association states that as of 2024, there are 202,485 professionally active dentists in the U.S., which is approximately 59.5 dentists per 100,000 U.S. population. It is essential to note that these national averages mask significant regional disparities. Certain states as listed in Tables 1A and B, indicate a shortage of dental practitioners, while others demonstrate a higher concentration of dental professionals.

Our study suggests that there is no direct correlation between a higher density of dentists and a reduction in oral health issues in states with a significant percentage of fluoride in their water supply, such as Washington, D.C., New Jersey, Hawaii, and Alaska. This finding suggests that various factors, in addition to the availability of dental professionals, substantially influence oral health outcomes. Furthermore, a considerable portion of the American population relies on bottled water, which may limit their exposure to the benefits of fluoridated water, except in instances where fluoride is present in toothpaste.

Bottled Water Consumption in the US

Many individuals choose bottled water as a means to mitigate potential health risks associated with tap water in the US. Aging infrastructure, particularly lead service lines, presents significant dangers by contaminating drinking water. Lead exposure can lead to severe and irreversible health issues, particularly for vulnerable populations such as children and pregnant women.

Water Crisis in America

The advantages of community water fluoridation in preventing dental caries diminish if individuals do not drink tap water. Examples of water crises in the United States include the presence of contaminated water in Flint, Michigan, and Jackson, Mississippi. These situations have resulted from issues related to neglected infrastructure and aging pipes, leading to the presence of lead and other contaminants in the water supply. Another significant issue is the severe water shortages and declining water levels in the Colorado River and its reservoirs, including Lake Mead and Lake Powell. These conditions are attributed to factors such as drought, climate change, and overconsumption. Additionally, widespread groundwater depletion is observed in states like California and the Ogallala Aquifer region, alongside challenges posed by excessive agricultural runoff and industrial pollution.

The growing trend towards healthier beverage choices has significantly contributed to the rise in global bottled water consumption [27]. According to reports from the International Bottled Water Association, which rely on data from the Beverage Marketing Corporation, the U.S. is projected to consume around 16.4 billion gallons of bottled water in 2024. This represents a 2.9% increase from 2023, resulting in a per capita consumption rate of 47.3 gallons. This ongoing trend underscores bottled water's position as the leading beverage by volume in the U.S., driven by a growing consumer preference for healthy and convenient hydration options.

Limitations

Examining the health effects of fluoride in drinking water presents significant challenges due to various biases and potential confounding factors that may influence outcomes, including dental caries and neurodevelopmental issues. Research has highlighted several methodological concerns, especially in older studies, which can compromise the reliability of the conclusions drawn regarding fluoride's impact on health.

TikTok's oral health videos are popular among young audiences, but they often lack reliability. Users should approach TikTok health advice with critical and cautious consideration, as they may struggle to distinguish between accurate and misleading content. Additionally, many of these videos may not be reliable, making it challenging for users to differentiate between accurate information and misleading content [28,29].

Conclusion

Not everyone can afford bottled water. Admittedly, socioeconomic status (SES) affects oral health by influencing access to dental care and dietary choices. People with lower SES often have poorer oral health because they have fewer resources and are more likely to eat unhealthy foods. Low-income individuals may find it hard to afford dental visits and may experience food insecurity, which can increase the risk of cavities. On the other hand, higher SES usually leads to better oral health. This is often attributed to improved access to preventive care, healthier dietary habits, and a deeper understanding of oral health practices [30].

Fluoridated water has become a significant topic of discussion, particularly in 2025, as the US government and various state administrators reexamine the practice of adding fluoride to municipal water supplies. Fluoridated water has sparked a growing public and political debate regarding the potential neurodevelopmental risks associated with fluoride use. These concerns are influencing legislative changes, as reported by the news media and various analyses. Despite the ongoing debate, the majority of dental professionals maintain that the absence of fluoride could lead to a notable increase in dental caries across

all demographic groups. Health professionals also advocate for funding of dental schools to graduate more dental professionals to cover the dire shortage in the nation.

Social media plays a significant role in promoting oral health advocacy by enhancing awareness of effective oral care practices through educational content. It fosters a deeper understanding of various oral health issues and empowers individuals and communities by providing readily accessible information, particularly for those with limited access to traditional healthcare services. Additionally, social media serves as a platform for debunking myths surrounding oral health, enhancing public health literacy, and enabling organizations to mobilize resources for policy changes and fundraising efforts. Ultimately, these efforts contribute to positive behavior changes related to oral health.

Recent trends indicate that TikTok videos centered on oral health are attracting a considerable following among younger viewers. However, it's important for audiences to approach the health advice presented on this platform with caution. Given the increasing interest in topics such as public water fluoridation, there is a pressing need for more comprehensive research to better understand these issues.

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