# WHITENING MORE THAN TEETH: RACE DISPARITIES IN ORAL HEALTH CARE

by

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Submitted in partial fulfillment of the

requirements for Departmental Honors in

the Department of Comparative Race and Ethnic Studies

Texas Christian University

Fort Worth, Texas

May 2, 2022

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## ABSTRACT

Racial disparities in oral health have existed in America for decades. Although dental organizations such as the American Dental Association (ADA) have taken steps to minimize these disparities, they still exist across the country. There is a need for more research around the topic of racial health disparities, specifically within oral health, along with qualitative data on this topic. This study aims to investigate the prevalence of racial disparities in oral health in the Dallas Fort-Worth (DFW) metroplex. Eight dentists were interviewed about their personal observations and experiences regarding racial health disparities among their patients, followed by coding to analyze the collected data. The results showed that racial oral health disparities likely do exist in DFW due to a variety of reasons such as insurance policies, barriers to access, and education. Despite improvements efforts, racial disparities in oral health still exist in communities of color across the nation. Oral health is an important and often overlooked aspect of general human health and quality of life, which is what makes further work in this area crucial.

# INTRODUCTION

It is made clear by the Centers for Disease Control and Prevention (CDC) and Health Policy Institute (HPI) that racial disparities in oral health still exist in parts of America. The quantitative data collected by the CDC supports the existence of racial disparities in oral health in America with statements such as, "Nearly twice as many non-Hispanic Black or Mexican American adults have untreated cavities as non-Hispanic White adults" (CDC, 2021). Racial disparities can exist in several forms, including access to care, insurance, education, transportation, location, language, as well as other factors. When speaking about racial disparities, there are bound to be overlaps in topics such as socioeconomic status and geographical location.

The question this study aims to answer is, how are long standing racial/ethnic disparities in oral healthcare reflected by dentists practicing in DFW? This question is important to investigate in order to see where racial disparities in oral health are seen and to what extent. It also gives insight into what some of the reasons may be, and what can be done to make things better. Although oral health is improving across the board, it has been shown that People of Color (POC) have benefited less from these improvements. For example, the general oral health across the nation has been gradually improving in the past 60 years, but People of Color still make up the greater proportion of dental cavities. Oral health is often looked at as secondary to general health, but maintaining oral health is just as crucial to a person's health and quality of life. Oral health diseases can impact the entire body, and People of Color are disproportionately impacted by this.

This research takes the qualitative approach of interviewing eight dentists in the DFW area about racial health disparities. Seventy-five percent of the interviewed dentists agreed that racial oral health disparities are still prevalent in their dental practice. Even the 25% that did not find or acknowledge the presence of oral health disparities at their office were able to recognize that in certain areas or aspects, that these disparities do exist. General oral health has improved across the country over the years, but it is a misconception that everyone benefits from it. The results of this study, and even other similar studies, are that these general improvements in oral health have not fully benefited People of Color.

# LITERATURE REVIEW

## *Racial Disparities in Oral Health*

My research focuses on racial disparities in oral health, but it is not the first to do so. I am investigating from a qualitative approach from a dental professional point of view, but several approaches have been taken to explore this topic. In the context of determinants of oral health, factors like familial patterns and sociocultural factors have been attributed to racial disparities in oral health, using a systematic search and analysis (Como et al., 2019). In addition, intergenerational social factors related to race have contributed to incorrect oral care beliefs and self-care practices, according to data gathered using a longitudinal investigation (Broadbent et al., 2016). Several researchers use public data gathered via nationwide surveys, and analyze the data using regression models, model-based survey analyses, and cross-sectional analyses. From this quantitative approach, racial minorities were found to have generally poorer oral health and oral health quality of life when compared to white people across the country (Huang & Park,

2015). Increased sugar consumption and diet is directly correlated to dental cavities and tooth loss (Burt et al., 1988), and People of Color are susceptible to these practices when combined with societal effects on self-care (Broadbent et al., 2016; Nazer & Sabbah, 2018).

Quantitative methods have also been used to explore factors researchers say are related to race in order to investigate racial oral health disparities. Some of these factors accounted for poorer oral health among Black and Hispanic people, including lack of preventative care and unmet oral needs (Fisher-Owens et al., 2013). One of these factors, is language, which can be related to race. Spanish-speaking Hispanics have a myriad of barriers to access, which has led to poor oral health in many cases (Han, 2019).

The topic of insurance is bound to come up when talking about oral health disparities. Using national surveys, as well as targeted interviews, researchers have been able to tie insurance trends to racial disparities in oral health (Chaiyachati et al., n.d.; Northridge et al., 2017). From quantitative and qualitative investigations, researchers found that racial minorities who are enrolled in Medicaid often do not or cannot receive appropriate dental care for reasons such as difficulty finding providers, general barriers to dental care, confusion with enrollment and benefits (Chaiyachati et al., n.d.; Northridge et al., 2017). When relating Medicaid to oral health, researchers also found that children with private insurance tend to have better oral health than children on Medicaid (Kranz et al., 2019). Considering that Medicaid has been crucial in populations of color, this information is significant in the research.

### *Racial Disparities in Healthcare*

Dentistry is often overlooked as an aspect of healthcare. This does not change when it comes to available research on the topic of racial disparities. However, racial disparities in healthcare can still provide some valuable insight and parallels regarding racial disparities in oral health. Some of this research also combines medical and dental, in the investigation of racial disparities in healthcare in general. One study that combined dental and medical looked at the relationship between glycemic status and oral health, while also considering insurance. They found that lack of insurance could be an indicator of poor oral health and diabetes risk, and even those who have Medicaid receive subpar treatment (Northridge et al., 2018). In this study 67% of the Medicaid recipients were Hispanic, which shows the possible relationship between insurance and racial disparities. Another researcher used nationally representative data and longitudinal regression models to examine disparities in general and oral healthcare. The results showed that Native Americans and African Americans showed high risk for dental and general health, while Asian and more so White subjects showed the lowest risk (Harris et al., 2006). A similar study showed significant disparities in general and dental health among all People of Color in the study, including in Latinx, Black, Native American, Asian and Pacific Islander communities (Flores & Tomany-Korman, 2008). Relevant to this combination of topics is the investigation of hypertension screening in a dental screening. The results found that screening racial/ethnic minorities for hypertension during dental visits can provide benefits in diagnosing potential health risks that may have been overlooked for sociocultural reasons (Greenblatt et al., 2017).

Several researchers approached their study of racial disparities in health care from a different perspective than what is being done in this study. For example, some researchers looked at interventions that can be taken in the realm of health disparities. One study found education and training of patient populations to be an effective method of improving racial health disparities (Clarke et al., 2013) Others found needs for intervention on the community and

system level. Language barriers, access to care, quality care, and knowledge could all be further looked at to improve these racial health disparities that were found to exist (Purnell et al., 2016). Some research aimed to investigate from the physician side, finding that implicit bias is still prevalent towards racial minorities, although according to the research it is not as widespread (Hall et al., 2015). Another study found that physicians can have an impact to lower racial disparities, mainly primary care density (Basu & Clancy, 2001).

### *Socioeconomic Disparities*

While speaking to the average person about the topic of race, it is almost inevitable that other topics such as geographic location, education, and insurance will be discussed. One topic that appears very often in conjunction with conversations about race is socioeconomics. This is no different when speaking about racial disparities in oral health, which is why it is worth discussing as its own subsection as well. One study investigating oral disparities among adolescents found that adolescents who belong to lower socioeconomic status routinely have poorer dental health (Polk et al., 2010). Looking forward in life, another study found that those who grew up poor are more likely have worse quality of procedures on their teeth (Correa et al., 2013). Hence, this is a direct example of socioeconomic disparities in oral health. According to Sabbah, there is a relationship between oral health and socioeconomic disparities (Sabbah et al., 2009). Another study analyzing the social determinants of health also found that among lower socioeconomic status, oral health is a pressing issue (Watt, 2007). Both upstream and downstream interventions are needed to address these disparities. In a study about social determinants of oral health, a relationship was found between oral disease prevalence and socioeconomic status (Watt, 2012). Disparities in socioeconomic status have been found to be present in multiple levels of oral health, from cavities to oral disease.

While these studies explored oral health disparities from the lens of socioeconomic status, other studies looked at socioeconomic status in conjunction with race. Northridge et al. conducted a qualitative study investigating several aspects of oral health disparities. They found that those who are low income, not insured, racial/ethnic minorities, or immigrants to have poor oral health (Northridge et al., 2020). As mentioned by Watt (2012), Northridge and coauthors also suggest that interventions at multiple levels are needed to eliminate these disparities. One study investigated dental utilization, which can be an important determinant of oral health disparities. Under the idea of utilization, they studied socioeconomic and racial disparities, finding that dental services utilization is lower among racial minorities and lower socioeconomic status (Reda et al., 2017). Reda explains that poor dental utilization is often not the fault of the individual, but that policymakers need to address the underlying causes of these disparities. At the cross section of insurance and access often lies socioeconomic status. Looking at government healthcare policies such as the Affordable Care Act and Medicaid, Sparer found that there is not enough dental coverage (Sparer, 2011). Dentistry should be further integrated into broader health care practice to increase access to basic dental care for lower socioeconomic status individuals. Another study found that financial barriers to dentistry are a major cause of oral health disparities, with access to dental insurance being the strongest barrier (Vujicic et al., 2016). Although not directly socioeconomic status, Lukes & Simon investigated occupation in relation to dentistry. More specifically they investigated oral disparities among seasonal and migrant farmworkers. The findings were that these patients frequently only get dental treatment in emergency situations (Lukes & Simon, 2006).

### *Contributions to Literature*

The area of racial health disparities in oral health is still overlooked, as compared to research on general health disparities. Furthermore, qualitative data in this area is even further lacking. This study serves to add to qualitative findings on the topic of racial health disparities in oral health. Qualitative research will allow for a more in-depth view at some of these racial disparities found in previous heavy quantitative research. These findings can be compared and contrasted with the different studies over the years to investigate if things have changed, where we are headed, and if trends look different in different locations. In addition, this study focuses solely on the broader community of DFW, of which I am a part and will practice in as dentist in the future, in comparison to other literature that is either nationwide, or focused on other broad communities.

## METHODS

To gather data for this study, I interviewed eight practicing dentists about their personal experiences and observations regarding racial health disparities in oral health. Out of the eight dentists three were white, three were Middle Eastern, one was Asian, and one was Latinx. The interviews are a collection of questions and conversation to gain a qualitative and detailed understanding on the trends of racial disparities in oral health, as observed by dentists. I chose to interview general dentists in the DFW metroplex because they have direct access and interactions with a localized patient base, producing valuable qualitative data on the topic of racial disparities in oral health. These dentists have years of experience working with a variety of patients and have been able to observe any disparities from a first-hand perspective.

In order to collect the data, I first put together a list of general dentists in DFW by utilizing Google search, Google Maps, and by driving around and writing down names of dental practices. I chose to also drive around because dental practices do not always have a good online presence, but I did not want to discount their perspectives from the data. Then, I reached out to the dental offices and set up a Zoom meeting if the dentist was interested. I initially focused on interviewing dentists in more diverse areas, but quickly learned dentists have a very busy schedule. I expanded my reach to any dentist in the DFW area who was willing to dedicate time for an interview. As a result, some dentists were able to offer different perspectives on disparities, based on where they practice and who they generally treat. In the end, I interviewed eight dentists. The average interview length was about 35 minutes, for a total of 4 hours and 20 minutes. All the names used to describe the dentists are pseudonyms and not actual names.

To analyze the data from the interviews I first had to transcribe the data. Using the transcriptions, I coded the data for important themes. Coding is a research analysis method used to focus the important information found in the data. I used Microsoft Word to produce the codes and Microsoft Excel to organize my codes. The goal is to identify important concepts that appear more than once within an interview and between different interviews. Taking it a step further, I analyzed the relationships found in the themes found through the coding process.

# FINDINGS

## *Findings (Introduction)*

Out of the eight dentists in the Dallas Fort-Worth area, six of them talked about their observations of racial disparities in oral health. These racial inequalities took several different forms such as access to care, education, culture and diet, familial trends, and historical background. At some point in the interviews, all eight of the dentists talked about systematic inequalities, such as insurance and education, but not all associated it directly with race. Some dentists were more direct with their descriptions of racial disparities, while others clouded their answers with other factors such as class. Some dentists stated that for the most part there are no racial disparities in their office. In these interviews, the dentists attributed disparities to geographic location or class, but did not recognize a racial aspect to dental disparities. Conversation about potential solutions to racial disparities in the DFW area also arose in the interviews with the eight dentists.

## *Racial Inequalities: Unequal Dental Outcomes*

Dr. Bernard is a 46-year-old Latinx dentist, who serves a fairly diverse patient base leaning more towards Latinx patients. When compared to other races, Dr. Bernard says white people are more likely to come in for cleanings and preventive care, and have the lowest rate of cavities. He finds that his Latinx and Black patients are generally less informed about dental care and more specifically preventative care. As a result of this dental education gap, he says, “Since white Caucasians do come to the office more frequently for checkups and cleanings, I think there is a prevalence of gum disease or periodontal problems in Hispanic and African Americans.” Not only has he noticed high prevalence of disease, but he also describes higher cavity rates among Latinx patients and more extractions among Black patients. Extractions give insight into disparities because they are often not the best long-term solution for dental issues, but they are cheaper and faster. His nonwhite patients are more willing to come in for what he calls an emergency visit, likely to relieve pain or solve an immediate issue, while his white patients are more likely to come in for routine care. He mainly attributes these racial disparities to, “misinformation, access, I think, cost you know.” Aside from financial barriers to access, Dr. Bernard talks about insurance as a barrier to access.

Dr. Evans is a 27-year-old dentist who identifies as Asian. She is a younger dentist but has already been able to identify racial disparities in oral health. Similar to Dr. Bernard, she has observed that “mostly African-Americans and Hispanics, they come in for pain and pain only. They always come in for a limited exam.” These limited exams are not sufficient for healthy oral health, and Dr. Evans mostly attributes this disparity to a lack of dental awareness, but has also noticed that dental care seems to be a bottom priority for a lot of her patients of color. She also noticed the same trend as Dr. Bernard far as nonwhite patients and extractions saying, “the Stop Six patients usually just resorted to extractions.” Later she clears up that the “Stop Six patients” she refers to are mostly POC. Dr. Evans also spoke about a largely disproportionate gap between cavities seen in her white patients and cavities seen in her Black and Latinx patients. A possible explanation for this could be differences in diet seen among her patients. For example, she says her Latinx patients “drink a lot of soda. And, you know, I think it goes back to their health, like

their oral hygiene too." She goes on to note her Latinx patients intake a lot of sugar and acidic foods/drinks, but also do not follow it up with the proper oral care, like sufficient brushing. By compounding quantitative data from several sources, Latinx people actually consume less sugar on average than white people. However, this is where qualitative data is useful, because in the experience of most dentists I interviewed, they noticed sugar consumption to have more of an impact on Latinx patients than white patients, which suggests a combination of diet and dental upkeep can attribute to the disparities.

Dr. Franklin is a Middle Eastern dentist who is 45 years old. When asked about racial disparities in oral health, Dr. Franklin attributed much of the disparities to cultural impacts and fear. When talking about nonwhite people, he says "some cultures, they don't see value [in dental care]." In his personal experiences he has observed that his patients of color including Black, Latinx, Asian, and Middle Eastern seem to not value dentistry and oral health from a cultural aspect. He speaks about it in a way that parents pass these values down to their kids, but it has to start from somewhere. "So, if the parents have a lot of cavities, like current active cavities, yeah. There's a high likelihood that kids are gonna have, their children are gonna have high active cavities." Here Dr. Franklin speaks on a familial cycle that shows why historical trends are still relevant today. Negative familial trends can be passed down in any race, but it is important to recognize that some races have been facing significant disparities and lack of dental education for decades. Dr. Franklin also addresses the idea of fear by saying, "fear could be also one. Like they just had bad dentistry done. I've had a lot of Middle Easterners who've had dental work done back home, including Asians and they're all falling apart, you know." Dr. Franklin recognizes the experiences of immigrants and how it may impact their outlook on dentistry. This fear from a bad experience can also turn into generational fear, when combined with the idea of familial trends as mentioned earlier. This suggests that there is more to disparities than just culture. Instead, historical dental treatment of nonwhite people gives context into today's "cultural" effects on oral health disparities.

### *Racial Inequalities: Inadequate Dental Coverage*

At the core of racial disparities in oral health, there seems to be systematic disparities, especially as it pertains to dental coverage. In the interviews about racial disparities, insurance was discussed in all but one interview, indicating inadequate dental coverage was an important part of the dentist and patient experience. Access to dental insurance increases access to care, and lack of dental insurance can act as an active barrier to care, which is divided across racial lines as noted by the dentist I interviewed. In Dr. Bernard's experience, he noted that, "Caucasians have access to better insurance that covers more dental benefits." Dr. Hayes had a similar experience saying, "definitely concerned that 60% of the Caucasian population, um, they adhere to, you know, getting insurance." Whether it is through their job, family, or out of pocket, White people seem to have access to better private insurance than POC. Dr. Irvin would likely agree that insurance is crucial to access when she says, "so the patients that have insurance, tend to come in more frequently for preventative care than patients that are without." Without comprehensive insurance, dental care can get too expensive to pursue, or the affordable options are not good enough for the situation.

Medicaid has been a great tool to gaining dental care, especially for patients of color. It gives an opportunity to those without the means to pursue dentistry. Every dentist who shared

their experiences working in a Medicaid office talked about patients of color being the majority at those clinics. This is where the intersection between race, class, and insurance comes into play. However, Medicaid does not solve every problem. As Dr. Jones said in the interview, insurance access is a good start, but not the full solution. “Of course, having the access, like the funds and the insurance, but is that a fair playing field for everybody? I still don't think we're there. I think things have gotten a lot better, but I would say truthfully that People of Color probably do not have the same playing field as far as getting the same access, getting the same education.” In her interview, Dr. Evans shared about how Medicaid makes dentistry and oral care more accessible for the parents, “if parents would just show up and bring their kid, everything was covered.” But sometimes it is not as easy as showing up. Dr. Bernard touched on this issue when he said, “I noticed that Hispanic and African Americans sometimes use, uh, Medicaid or state funded insurances, and it's hard to access facilities that take those insurance.” The insurance system itself has made it difficult for dental offices to be of service to those who need government subsidized dental care. Furthermore, the dental system discourages dentists from accepting government insurance plans by narrowing reimbursement according to Dr. Bernard, who accepts Medicaid at his office.

Both Dr. Franklin and Dr. Jones talks about how the system can do a better job educating those who traditionally do not have a full understanding of proper oral health care. Earlier I shared Dr. Bernard’s view on education and misinformation a reason for racial disparities in oral health, but it also has a systematic aspect. Dr. Jones summed this idea up “Like are we teaching the same things we’re teaching in cities that we’re teaching in certain affluent suburbs. Are we talking about preventive care? The elementaries in my area, dentists and pediatric dentists are constantly going there to talk to young kids as early as five talking about preventive care giving them toothbrushes telling them to go to the dentist.” She is aware that more can and should be done from a systematic level to educate communities of color about oral care, but access and insurance also need to be addressed, because as found in these interviews, racial disparities in oral health do still exist.

### *Equality or Erasure of Race?*

Dr. Irvin is a 51-year-old White dentist who serves a very diverse population. In her experience, she has not noticed any racial disparities in oral health care. Instead, she attributes disparities among her patients to socioeconomic roots. The repeating reason for this is that she sees people of all races with all conditions of oral health. She often says phrases like “I just don't think it's race at all based on race, because I see patients that are of various different backgrounds that have beautiful oral hygiene. And then I'll see some that have neglected their teeth” to back up her claims that there are no racial disparities at her office. Dr. Carter, a 53-year-old white dentist, also states that he does not observe any racial disparities at his office. The strong majority of his patients are white. He made it clear that his observations only apply to his office, and he still thinks racial disparities exist in the broader community. But why are these dentists not seeing racial disparities among their patients? Is it because their offices are truly equal, or because they have erased the racial association to disparities?

During the other interviews, some dentists spoke about race, but not as explicitly. Their responses can be examined to delve into this idea of the “erasure of race.” It was common for dentists to answer questions about race, but to replace race with location or class. For example,

Dr. Evans recognizes that “area goes hand in hand with social economics and it goes hand-in-hand with race as well.” Meanwhile, when I asked her questions about racial disparities or POC, she often described her patients while she worked at Stop 6, which is not a race, but a location. However, given the context of the conversation and reputation of Stop 6 there was a mutual assumption that she was referring to POC. Another example of why race may be erased arises with Dr. Franklin, when he says “I think Middle Easterners, we’re the worst. I mean, I'm Middle Eastern, so I can say that.” This shows that he may feel uncomfortable answering a question about racial disparities when it has to do with other races, but as I probed him more and more, he became more comfortable answering the racial questions head on. Therefore, in his earlier answers where race was erased for class, it can be assumed he was subconsciously referring to race as well, like “people, unfortunately, with the lower income brackets are gonna have more issues. Either they don't know exactly what to eat, because they probably are eating fast food, or their diet is not great and they don't have access or to dental care.” Like Dr. Irvin and Dr. Carter, Dr. Gordon also initially said “I think at this office it's pretty, um, equal among all of them” when talking about oral health among races. However, in this interview it became clear that she was subconsciously erasing race and replacing it fully with class, when instead she was referring to the intersection. This first became clear when I asked her what race most of the lower income people she was referring to and she answered, “I think I would say mostly Hispanic or Black.” By connecting the manner in which different dentists answer questions about race, it brings up the possibility that the two dentists who say they did not observe racial disparities just observed them in a different way that served to erase race from their discussion.

## CONCLUSION

Through the qualitative analysis done through interviewing eight dentists, there is evidence that oral health disparities exist in the DFW area. These racial disparities were seen both on a systematic level and social level. The biggest source of systematic inequalities of oral health was found to be due to insurance policies, likely because of the high costs of regular dental care. In general, the insurance system in America is not easily accessible, and by the findings of this research, it is POC who often do not have access. In some cases, insurance is available, but full dental coverage is not. The nature of the insurance system makes it difficult for for-profit dental practices to accommodate patients who do not have insurance, or good dental coverage. POC were found to be most disadvantaged by this system. The implementation of Medicaid has helped ease some of these disparities for POC who are also low income. However, it has not been an all-encompassing solution. Medicaid dental offices are not easy to find, and for some, there are other barriers to access such as transportation and work lifestyle. In addition, factors such as lack of dental education among communities of color, and cultural trends were found to serve as sources of racial oral health disparities. If a group of people faced explicit discrimination and lack of education for generations, then it cannot be expected to change without intervention, as many dentists described that oral health is heavily influenced by family practices.

I was surprised to hear some dentists shy away from using explicitly racial descriptions. Rather they answered the questions about race using identifiers such as class. However, given the context it was clear they were referring to the intersections between race and class that they have personally observed in their office, and how that contributes to oral health. As a result of this observation, I learned it is likely that many dental and even medical professionals may not

necessarily be color blind but are not racially conscious. They seem to look past race to explain why disparities exist, where approaching the issue honestly and directly could serve to be more effective. This would require a socio-historical understanding on why racial disparities in oral health exist, and why these cycles are still prevalent. The two dentists who denied racial disparities in their office were both white. Although the third white dentist was very conscious of the prevalence of racial oral health disparities, this leads to another question of racial sensitivity and awareness by dentists of different races. This is something that might deserve further research to advance the topic of racial disparities in oral health. Overall, I learned about the state of racial oral health disparities in DFW from the perspective of eight local dentists. This knowledge can be used in my future career as a dentist, and by other practicing dentists interested in addressing these disparities head on.

One solution I would propose to improve the state of racial disparities in oral health would be to improve dental education in both directions - for communities and dentists. Most of the dentists talked about the racial gap in dental awareness and education. Whether it is due to culture, family, fear, location, or misinformation it could that POC in general do not have the same dental awareness compared to white people. It is crucial to take a proactive intervention approach to end longstanding cycles that perpetuate racial disparities in oral health.

A manner in which to do this would be for dentists to start going to schools in inner cities and communities of color to educate the children on proper dental hygiene, upkeep, and diet. Then this information can be passed up to their parents and down to their future children. Dr. Bernard proposed this as a potential solution to the language barrier seen in Hispanic, African, Asian, and Middle Eastern communities. Kids can be the link to pass on the essential dental information to their parents in their native language. Educational intervention can be a tool to disrupt generational cycles of historical and familial trends in oral health. An active effort needs to be made to educate about oral hygiene and upkeep, the effects of a bad diet, and to gain trust in communities where fear of dentists is more common.

Educations for dentists, particularly about the communities they serve, will also be crucial towards this learning process. Understanding things like food deserts, residential segregation histories and lack of access will allow them to appreciate why some of their patients have poorer oral health and create appropriate solutions to aid in patients' health. Also, being able to communicate with non-English patients will also be crucial in teaching communities about the importance of oral health. Being able to communicate with all patients will help ensure that dentists understand the issues in the community and work with dentists to more effectively serve their patients.

Additionally, structural solutions are also needed to address to issues that arise from these disparities. Low income and flexible dental clinics that take Medicaid or have a sliding scale model are instrumental in reducing the effects of racial oral health disparities. There is still a need for more of these clinics and to provide more access. Some of the dentists told stories of patients who drove almost an hour to go to the free clinic at their dental school, but not everyone can make that trip due to transportation or work barriers. Although these offices do exist, they should cover more locations so that they can be more accessible by those who need it. Access and education both need to be actively improved in order to eliminate longstanding racial disparities in oral health. One without the other will not provide a comprehensive solution to the issues at hand. Without access to insurance and dentists, the benefits of education are lost. Without proper education, access to insurance and dentists will not have its full intended effects, as we have seen in the example of Medicaid utilization and oral health care will remain unequal.

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