

## ORIGINAL ARTICLE

# Addressing social determinants of oral health, structural racism and discrimination and intersectionality among immigrant and non-English speaking Hispanics in the United States

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## Abstract

**Background:** The Hispanic population is the largest (18.5%) and fastest growing non-majority ethnic group in the United States (US), about half of whom are non-US born, and bears one of the highest oral disease burdens. Most current knowledge around oral health disparities in Hispanic populations examine the individual factors of culture, acculturation, and socioeconomic status. However, the root causes of this inequity; oral health literacy (OHL), social determinants of health (SDOH), structural racism and discrimination (SRD) and the intersectionality among the three, have not been well-studied. Addressing this critical gap will be central to advancing health equity and reducing oral health-related disparities in the Hispanic population, especially among immigrant and non-English speaking Hispanics.

**Results:** Recommendations for future OHL/SDOH/SRD-related research in oral health targeting Hispanic populations should include: (1) examining the direct and indirect effects of OHL/SDOH/SRD-related factors and intersectionality, (2) assessing the impact of SRD on oral health using zip-code level measures, (3) examining the role of OHL and SDOH as potential effect modifiers on the relationship between SRD and oral health outcomes, (4) conducting secondary data analysis to identify demographic, social and structural-level variables and correlations between and among variables to predict oral health outcomes, and (5) obtaining a deeper understanding of how OHL/SDOH and SRD factors are experienced among Hispanic immigrant and migrant populations.

**Conclusion:** It is hoped these recommendations will lead to a better understanding of the mechanisms through which OHL, SDOH and SRD impact oral health outcomes among the largest minority population in the US so they can be addressed.

## KEYWORDS

Hispanic immigrants, intersectionality, non-English speaking Hispanics, oral health, oral health literacy, social determinants of health, structural racism and discrimination

## OVERVIEW OF ORAL HEALTH DISPARITIES IN THE HISPANIC POPULATION

The Hispanic population is the largest (18.5%) and fastest growing non-majority ethnic group in the United States (US); about half of whom are non-US born, and bears one of the highest oral disease burdens [1,2]. Approximately

40% of Hispanic adults in the US live in states where dental care, including emergency care, is not covered by Medicaid's adult dental benefits [3]. Hispanic adults have a higher prevalence of oral disease than non-Hispanic Whites [4]. For example, National Health Survey data shows that Mexican American adults 30 years of age or older had the highest prevalence of periodontal disease among all racial or ethnic groups [4]. Hispanic children in the US also face

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significant oral health disparities. The prevalence of dental caries is highest among Hispanic youth aged 2–19 years (52%) compared to non-Hispanic Black (44.3%), Asian (42.6%), and White (39%) youth [4,5]. In 2017, 7.2% of Hispanic children's (1–17 years of age) teeth were characterized as “fair or poor” compared with 4.2% among non-Hispanic Whites [4]. Research with Hispanics often explores differences between U.S.-born and foreign-born populations, including how various factors such as duration of residence in the US, level of acculturation, and language preferences may influence health status and health behaviors. Acculturation has been shown to play a key role in access to dental services for Hispanics [4]. For example, studies show that English speakers are more likely to report a dental visit in the past year than Spanish speakers [4]; and non-English speaking Hispanic children are less likely to receive sealants, a non-invasive caries prevention measure, than English speaking Hispanic children [6]. Additionally, Hispanic children who belong to less acculturated families (i.e., first generation immigrants or recent immigrants, with shorter US residency periods) are less likely to be insured or have visited a dentist in the past 12 months [7]. While socioeconomic status inequity is strongly linked to oral health disparities, Hispanics also face some unique barriers beyond socioeconomic status. For example, Hispanic immigrants and individuals with Limited English Proficiency (LEP) face linguistic and cultural barriers to navigating the US health insurance and health care systems [8].

According to the Hispanic Dental Association [9], a shortage of Hispanic dentists also contributes to oral health disparities in Hispanic communities [10]. Research has shown concordance between provider and patient enhances patient satisfaction and quality of care [4]. While Hispanics might feel more comfortable going to a dentist who speaks Spanish and can communicate with them in a culturally and linguistically appropriate manner [11], Hispanic dentists make up only 5.6% of active dentists in the US, thus making access to a Hispanic dentist challenging [12]. In comparison, Whites make up 71.9% of active dentists, Asians make up 17.1% of active dentists and Blacks/African-Americans make up 3.7% of active dentists [12]. As of 2018, dental hygienists were 83% non-Hispanic White, 7.5% Hispanic, 4% Asian, and 3% Black/African-American [4]. Increasing the Hispanic dental workforce through preprofessional and professional education is key to addressing the oral health care needs in the Hispanic population [4,13]. Additionally, opening the US dental profession to more foreign-trained Hispanic dentists could provide several advantages, including increasing the diversity of dentists in the US and expanding access to minority and under-represented communities. However, many states have phased out licensure pathways for foreign trained dentists [13]. Establishing a Statewide or National foreign trained dental association that would provide strategies and grants for mentorship as well as universal

recognition of all licensure pathways for foreign-trained dentists are needed [4].

## CHARACTERISTICS OF THE HISPANIC POPULATION IN THE UNITED STATES

Hispanics are a genetically and culturally diverse population comprised of multiple subgroups [14,15], which includes people of Mexican, Cuban, Puerto Rican, South or Central American, or other Spanish culture or origin [16]. “Hispanic origin” is defined by the Census Bureau as “the heritage, nationality, lineage, or country of birth of the person or the person's parents or ancestors before arriving in the United States.” [4] The term “Hispanic” is used in the US to refer to people who are Hispanic, Latino, Chicano, Latinx, etc., and appears to be the preferred pan-ethnic term among those who expressed a preference [15]. Among Hispanic subgroups, Mexicans ranked as the largest at 61.4% followed by Puerto Ricans (9.6%), Central Americans (9.8%), South Americans (6.4%), and Cubans (3.9%) [16].

In the 2019 census, states with the largest Hispanic populations were California, Texas, Florida, New York, Arizona, Illinois, New Jersey, Colorado, Georgia and New Mexico [16]. Los Angeles County in California currently has the largest Hispanic population in the US [17]. There are more than 4.8 million Hispanics in Los Angeles County, which accounts for greater than half of the county's population [18]. Los Angeles County, together with Riverside and Imperial counties, cover a very large geographic area of California, including numerous pockets of rural areas, and have one of the largest populations of Hispanics/Latinos in California (49%, 50%, and 85% respectively) [19]. Many children in these counties do not receive dental care due to issues with transportation, co-payments or deductibles, trust, and language barriers. [20]. A 2019 study showed that 20.7% of 3rd grade students in Los Angeles County had untreated dental decay and only 30.5% had dental sealants [21]. Finally, only 58% of Los Angeles County residents have access to optimally fluoridated water, and those without it typically live in underserved neighborhoods, only exacerbating the oral health equity issue [11].

The median age for Hispanics in the US is 29.8, which is approximately 9 years lower than the median age of 38.5 for the entire US population. Almost one third (31%) of Hispanics in the US are under the age of 18 compared to 22% for the US as a whole [22]. Language fluency varies among Hispanic subgroups in the US. Census data from 2019 showed that 71.1% of Hispanics spoke a language other than English at home: 70.4% of Mexicans, 58.9% of Puerto Ricans, 77.7% of Cubans, and 86.2% of Central Americans. Additionally, 28.4% of Hispanics stated that they were not fluent in English [16]. Finally, one fifth (20%) of Hispanics in the US are non-citizens [22].

## INTERSECTIONALITY AND ORAL HEALTH DISPARITIES

Most of the current knowledge around oral health inequities and disparities in Hispanic populations examine the individual factors of culture, acculturation, and socioeconomic status, but little is known about how these factors influence oral health differentially among the various Hispanic subgroups [10]. Additionally, research regarding the root causes of these inequities; oral health literacy (OHL), social determinants of health (SDOH), structural racism and discrimination (SRD) and the intersectionality among the three as they relate to oral health treatment options and outcomes, have not been well-studied [23]. Intersectionality, a term which emerged from critical race theory, refers to the interconnected nature of social categorizations such as race, class, and gender as they apply to a given individual or group and is regarded as creating overlapping and interdependent systems of discrimination or disadvantage [24]. Addressing this critical gap in oral health research and clinical care is central to advancing health equity and reducing oral health-related disparities and will contribute to our understanding of the mechanisms through which OHL/SDOH/SRD impacts oral health outcomes and experiences of the largest minority population in the US [25].

Below, we discuss the following: key roles OHL and SDOH play in oral health inequities and disparities among the Hispanic population, specifically focusing on Hispanic immigrant and non-English speaking Hispanics; the impact of SRD on oral health outcomes among immigrant and non-English speaking Hispanics; and key recommendations for addressing the gap in OHL, SDOH and SRD-related research in oral health among this vulnerable and underserved Hispanic population.

## UNDERSTANDING THE RELATIONSHIP BETWEEN HISPANICS WITH LIMITED ENGLISH PROFICIENCY, ORAL HEALTH LITERACY AND ORAL HEALTH DISPARITIES

OHL refers to:

The motivation and ability of individuals to gain access to, understand and use information in ways which promote and maintain good health. [26]

Based on the above definition, OHL is the extent to which a patient is motivated and able to gain, understand and use basic oral health knowledge, the services available to them, and the behaviors required of them to make healthy decisions. Additionally, information must be presented to patients at a level and in a format and language they can understand. If a patient cannot understand the

information that is being shared with them, it is impossible for that individual to benefit from it [27]. Language plays a critical role in oral health disparities for Hispanics with LEP [4]. A research study showed that in households where Spanish was the primary language, the likelihood of tooth decay was 70% compared to 47% in primarily English-speaking households [28]. Recent research has found correlations between oral health disparities and oral health literacy levels, highlighting the necessity for oral health care providers to educate patients and families at an appropriate literacy level [29]. For example, researchers found that at the school level, California children who spoke a language other than English at home were less likely to have dental sealants compared to children who spoke English at home. Additionally, children whose parents had lower levels of health literacy were less likely to receive dental sealants than children whose parents had higher levels of health literacy [30].

## SOCIAL DETERMINANTS OF HEALTH PLAY A SIGNIFICANT ROLE IN ORAL HEALTH DISPARITIES AMONG HISPANIC IMMIGRANT AND NON-ENGLISH SPEAKING POPULATIONS

The World Health Organization defines SDOH as follows:

The non-medical factors that influence health outcomes. They are the conditions in which people are born, grow, live, work, and age. These circumstances are shaped by the distribution of money, power, and resources at global, national, and local levels. The social determinants of health are mostly responsible for health inequities—the unfair and avoidable differences in health status seen within and between social groups. [31,32]

SDOH has been a focus and priority in the field of public health for decades [31]. However, oral health professionals, such as dentists and dental allied professionals, are only just beginning to embrace the importance of SDOH in influencing oral health outcomes. For example, a recent study examining current pre-doctoral curricula found that SDOH training was fragmented and isolated to courses on dental public health, cultural competency, and community engagement.

While dental schools are now emphasizing the need to include SDOH training and have provided examples of didactic and clinical courses, workshops, and other innovative methodologies used to train dental students in understanding the importance of health inequities as they relate to oral health care, the authors of the study could not find a single example of seamless inclusion of SDOH across the learning continuum within the predoctoral

dental curriculum [33,34]. Some SDOH, including English language proficiency and acculturation, greatly affect the oral health of Hispanics. Qualitative focus group analyses exploring barriers to dental care identified Mexican migrant families being discriminated against in dental offices based on their race, socioeconomic status, not speaking English, and insurance status [35]. Another qualitative study on Hispanic parents discussed them being left out of treatment decision making for their children due to language barriers [36]. Other studies have shown children of Hispanic parents who do not speak English at home and face linguistic challenges while attending dental visits have poorer oral health outcomes, including higher dental caries, fewer preventive visits, and fewer dental sealants than the general U.S. population [37,38]. Hispanic parents of young children reported more instances of child restraint, incomplete communication, and negative dental experiences than White and Vietnamese counterparts [37], and in some cases affecting their willingness to return for dental care. Conversely, Hispanic mothers reporting positive communication experiences during dental visits were more likely to return to follow up care [38].

## THE IMPACT OF STRUCTURAL RACISM AND DISCRIMINATION ON ORAL HEALTH OUTCOMES AMONG HISPANIC IMMIGRANT AND NON-ENGLISH SPEAKING POPULATIONS

SRD can be defined as follows:

Policies, laws and regulations that systematically result in differential access to services and opportunities in society based on race and affects health outcomes regardless of any individuals' actions or intentions. [39]

### OR

Macrolevel conditions (e.g., residential segregation and institutional policies) that limit opportunities, resources, power and well-being of individuals and populations based on race/ethnicity or other statuses. [40]

While Hispanic communities struggle with inequity across many daily life components and health outcomes, studies on the direct association of SRD with oral health treatments and outcomes are lacking [23,25]. Some community-level factors associated with poor oral health could be suggestive of effects of structural racism. For example, studies have shown that living in a monolingual community and a school district with a high proportion of LEP (a form of residential segregation) heightens the impact on access to and utilization of care for Hispanic families [30,41].

**TABLE 1** Summary of research recommendations to address the gap in oral health literacy, social determinants of health, structural racism and discrimination and intersectionality in oral health among immigrant and non-English-speaking Hispanics

### Summary of research recommendations

- 1-Develop an intersectionality framework to examine the direct and indirect effects of oral health literacy, social determinants of health and structural racism and discrimination-related factors to identify the specific variables that have the greatest impact on oral health outcomes among Hispanic populations.
- 2-Assess the impact of residential segregation on oral health outcomes among Hispanic populations using zip code level data.
- 3- Examine the role of oral health literacy and social determinants of health as potential effect modifiers on the relationship between structural racism and discrimination and oral health outcomes among immigrant and non-English speaking Hispanics.
- 4-Conduct secondary data analysis using multi-state longitudinal datasets and data mining techniques to identify demographic, social and structural-level variables of interest and patterns and correlations between and among variables within large datasets to predict oral health outcomes among Hispanic populations.
- 5-Utilize both quantitative and qualitative research methods to obtain a deeper understanding of how oral health literacy, social determinants of health and structural racism and discrimination factors are experienced among Hispanic immigrant and migrant adults and their children, especially relating to access to dental care, treatment options, and oral health outcomes.

Structural racism exists in overall health care where Hispanics have the highest uninsured rates. Hispanic parents in rural communities in California face underinsurance leading to less-than-ideal dental treatment [41,42]. Hispanic immigrants and individuals with LEP also face linguistic and cultural barriers when navigating the US health insurance and health care systems, further exacerbating health inequities in their communities [43]. While OHL and SDOH are the critical underlying factors that contribute to oral health-related inequities and disparities [31], they also potentially mediate and/or modify the effects of SRD on overall health outcomes. Below are recommendations for future research to help fill in the gap of delineating how OHL, SDOH and SRD directly and indirectly affect oral health outcomes in immigrant and non-English speaking Hispanic populations.

## RESEARCH RECOMMENDATIONS FOR ADDRESSING THE GAP IN ORAL HEALTH LITERACY, SOCIAL DETERMINANTS OF HEALTH, STRUCTURAL RACISM AND DISCRIMINATION AND INTERSECTIONALITY AMONG IMMIGRANT AND NON-ENGLISH-SPEAKING HISPANICS

Below are five recommendations for how to address the gap in OHL, SDOH, SRD and intersectionality among immigrant and non-English-speaking Hispanic populations. Table 1 summarizes the recommendations.



1. Researchers should consider examining the direct and indirect effects of OHL/SDOH/SRD-related factors to identify the specific variables that have the greatest impact on oral health outcomes among Hispanic populations. For example, creating an intersectionality framework for oral health that can identify the independent and joint/intersectional effects of OHL, SDOH and SRD-related measures of racism can provide a multidimensional view of the upstream causes of oral health inequity. Additionally, this type of research will provide a unique opportunity to address intersectionality issues, and how they create overlapping and amplifying systems of disadvantage. Understanding how these systems operate to affect individual's resources and opportunities for oral health equity will be crucial for developing interventions, programs, and policies to reduce disparities and improve oral health among Hispanic communities [44].
2. Researchers should make use of zip code level data to assess the impact of racial/ethnic residential segregation on oral health outcomes. This type of research could assess if area-level measures, such as differences in dental treatment options (e.g., restoration, sedation, and extraction) between non-Hispanic Whites and Hispanics are related to oral health disparities. Racial/ethnic residential segregation has been considered a root cause of SRD that "functions not only to perpetuate and sustain racial inequality, but as a widespread and surprisingly commonplace global driver of inter-group inequality." [45,46]
3. Studies should also be developed to examine the role of OHL and SDOH variables as potential effect modifiers on the relationship between SRD-level oral health treatment variables and oral health outcomes among immigrant and non-English speaking Hispanics. OHL and SDOH variables could include primary language spoken, immigration status, citizenship status, number of years living in the US as well other cultural, behavioral, and socio-economic measures. Additionally, these studies could assess the effect of the providers' primary speaking language, race/ethnicity and citizenship status as potential moderators or mediators on the relationship between SRD-level oral health treatments and oral health outcomes among this population.
4. Large multistate longitudinal datasets can be an invaluable resource for conducting secondary data analyses. For example, the IBM Watson MarketScan dataset provides treatment data from millions of Medicaid enrolled individuals in 13 US states. Another large dataset called BigMouth provides diagnosis, prognosis, and treatment data in nine large and diverse US states with varying demographics, policies, histories, and cultures. Both datasets contain detailed dental procedure data as well as demographics and other important health and social-related data. Using a data mining research technique can provide crucial information for developing oral health programs, guiding clinical practice behaviors, and strengthening the case for making changes in oral health-related policies that affect the way oral health care is accessed by patients and delivered by providers. Data mining is the process of identifying variables and patterns and correlations between and among variables within large datasets to predict outcomes. Prior research on large datasets was instrumental in leading to the inclusion of International Classification of Diseases-10 (ICD-10) codes into provider networks reimbursement policy to identify SDOH [47]. The ICD-10 codes included in categories Z55-Z-65 and Z75 ("Z codes") identify non-medical factors that may influence a patient's health status, including socioeconomic status, education and literacy, employment, housing and lack of adequate food or water. Not only will these codes incentivize a provider to incorporate discussions of SDOH-related topics into their preventive visits, as they will now be reimbursed for providing these services, these codes are also a key step towards reducing oral health disparities and health inequity [47].
5. Researchers should consider using both quantitative and qualitative research methods to obtain a deeper understanding of how OHL, SDOH and SRD factors are experienced among Hispanic immigrant and migrant adults and their children, especially relating to access to dental care, treatment options, and oral health outcomes. SRD-related factors that Hispanic immigrant and migrant workers face might include hazardous work environments, inadequate or unsafe housing and food insecurities, limited availability of clean water and septic systems, inadequate healthcare access, lack of insurance and fear of undocumented status. To obtain first-hand perspectives from this population, researchers might consider using in-depth interviews and/or focus groups to gain a deeper understanding of how access to and utilization of oral health treatment options and care are experienced in non-English speaking Hispanics, especially among those who are undocumented. Additionally, research examining which protective factors might help people overcome SRD barriers to help optimize their oral health would also be very informative. Protective factors might include family, cultural, organizational, community or neighborhood level variables.

## CONCLUSION

The Hispanic population continues to bear one of the highest oral disease burdens. This is especially the case among immigrant and non-English speaking Hispanics [1,2]. Previous research on oral health inequities among Hispanics has focused on socioeconomic status, culture,

acculturation and individual level factors [35–37]. Intervention strategies to address these factors should include programs aimed at providing oral health professionals with the knowledge, skills and cultural competency to better serve Hispanic populations, and educating Hispanic communities through oral health-related outreach programs using bi-lingual community oral health care workers (often referred to as “Promotoras”) and promoting oral health literacy [48–50]. To help mitigate financial barriers, dental professionals might consider adopting a private-public health model that focuses on providing quality dental care services at reduced costs to those who are unable to obtain dental care due to financial reasons [48]. However, to address the root causes of oral health inequity, research should focus on the role of SRDs and the intersectionality among OHL, SDOH and SRD. Research in this area is currently lacking [23–25]. We hope the recommendations in this paper will help spur interest in developing innovative OHL, SDOH and SRD-related research interventions, programs and policies addressing immigration status and English as a second language among Hispanic immigrant and non-English speaking populations to help eliminate disparities, overcome health inequalities, improve oral health, and ultimately, bring justice and human rights for this vulnerable and underserved population [51].

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