Analyzing Patient Odds of Receiving Dental Care Based on Demographics

Hope Everingham – Department of Biology, East Carolina University

Greenville, North Carolina, United States

everinghamh19@students.ecu.edu

Abstract

• Lack of adequate access to dental care across varying populations is evident. People with certain backgrounds face challenges when seeking out dental care that those of another background may not. Poor oral hygiene influences overall systemic health and is an issue that should be addressed with public health efforts.
• To determine the characteristics that correlate with lower odds of receiving dental care, dental visit data collected by the Center for Disease Control over the span of 23 years was analyzed.
• It was found that one’s race/ethnic background, poverty level, and geographic region have a significant impact on the likelihood of having a dental visit each year.
• Results demonstrate the importance of public health work to create equitable situations for all people regarding oral healthcare. The gap in care between different demographic or geographic groups can be narrowed with oral health education promotion and reduction of financial strain.

Introduction

• Oral health education is not promoted to a level that conveys the importance of preventative care.
• Previous research by Vujicic et al. found that regardless of age, income, and insurance coverage, more people had financial barriers for dental care than any other type of healthcare [1].
• Studies researching racial and ethnic characteristics’ relationship with dental visits have found that promotion of primary care can help decrease disparities in access to healthcare across groups [2].
• Rural areas and areas with low funding are historically also impacted by disparities in healthcare access and are therefore likely to be receiving less dental care.

Methods

1. The National Center for Health Statistics in conjunction with the CDC collects health statistics data in a yearly report called Health, United States.
2. The data that provided insight to the barriers patients faced regarding receiving dental care was pulled from the Centers for Disease Control and Prevention website at https://www.cdc.gov/nchs/data/dhus/2020-2021/DentAd.pdf.
3. Analysis of Variation (ANOVA) tests were used to compare each sub characteristic to each other to determine if there was a significant difference in number of visits between patients of different race/ethnicity, poverty level, and geographic region.

Results

Figure 1. Percent of Respondents Who Had Dental Visits Within a Year by Race/Ethnicity

<table>
<thead>
<tr>
<th>Race/Ethnicity</th>
<th>Percentage of Respondents Who Had Dental Visits Within a Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hispanic</td>
<td>50.5%</td>
</tr>
<tr>
<td>Black</td>
<td>56.9%</td>
</tr>
<tr>
<td>White</td>
<td>64.7%</td>
</tr>
</tbody>
</table>

Table 1. Percent of Respondents with a Dental Visit in the Past Year Based on Poverty Level

<table>
<thead>
<tr>
<th>Poverty Level</th>
<th>Percentage of Respondents</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below</td>
<td>45</td>
<td>2.86</td>
</tr>
<tr>
<td>Slightly Above</td>
<td>47</td>
<td>2.26</td>
</tr>
<tr>
<td>Above</td>
<td>61.1</td>
<td>1.69</td>
</tr>
<tr>
<td>Well Above</td>
<td>77.8</td>
<td>0.99</td>
</tr>
</tbody>
</table>

Discussion

• People are most likely to have a dental visit yearly if they are white, well above the poverty level, and live in the Northeast.
• By comparing groups with significant reported differences, like those from the South and those in the Northeast on further levels such as insurance status and type of employment; groups can be targeted for aid and the disparity gap can be narrowed.
• These findings highlight the importance of increasing efforts to help all populations receive adequate oral health care and prove that racial/ethnic and financial demographics can significantly decrease one’s odds of receiving important dental care. This pertains to one’s health overall and quality of life as populations with statistically lower odds of visiting a dentist within a year are at higher risks for other harmful health outcomes. These at-risk populations would greatly benefit from further efforts to understand why disparities occur and public health programming to close the gap between those who receive more care and those who receive less. Changes are attainable through education about oral health care and promotion of dental benefits and access.

References


Acknowledgements

• Thank you to Dr. Heather Vance-Chalcraft for data analysis support and continuous mentorship and feedback.
• Thank you to Ms. Cheryl Goodwin for her encouragement and financial support.