

BASIC SCREENING SURVEY

2023

Arkansas
Department of
Health
Office of Oral Health





INTRODUCTION

The Association of State and Territorial Dental Directors (ASTDD) developed the Basic Screening Survey (BSS) to provide a framework for public health agencies to collect and present consistent oral health data. The BSS has two basic components:

1. **Direct, noninvasive observation of a child's mouth**
2. **Collection of demographic information**

During observation of a child's mouth, BSS surveyors collect key indicators including decay experience, untreated tooth decay, dental sealants on permanent molars, and urgency of need for dental care.

During the 2019-2020 school year, the Arkansas Department of Health Office of Oral Health (ADH OOH) completed a BSS among third grade children from a representative sample of Arkansas' public schools. To determine if the COVID-19 pandemic impacted the oral health of Arkansas children, the ADH OOH returned to schools screened in 2019-2020 to observe and evaluate children's oral health.

DEFINITIONS

Untreated decay	Cavitated carious lesions, detected by a visual exam, that have not been treated by a dentist
Treated decay	Evidence of dental treatment provided as a result of cavities, e.g. fillings, crowns, etc.
Decay experience	A measure that indicates that untreated decay, treated decay, or both are present in the oral cavity
Dental sealants	Preventive coatings placed in the grooves of molar teeth; BSS records only those sealants placed on permanent molars [primary molars are excluded]
Early care	Indicates that dental treatment is needed within several weeks or before the next regularly scheduled dental appointment
Urgent care	Indicates that dental treatment is needed within the next week due to pain, infection or swelling

METHODS

Out of the 65 schools that took part in the 2019-2020 survey, 46 participated again in the 2022-2023 survey. Attempts were made to replace the 19 schools that were unable to participate in 2022-23 with a similar school from the same sampling interval. Five schools were replaced, resulting in a total of 51 participating schools in the 2022-2023 survey - a response rate of 78% of schools.

A team of eight registered dental hygienists (RDHs) and one licensed dentist surveyed each student's oral health status on-site at participating schools, gathering survey information through laptops with online access to a REDCap® data entry form. Oral health data was linked to student demographic data using the state student identification number (ID) of participating students. ID-linked student demographic data was obtained through a secure data-sharing agreement between ADH OOH and the Arkansas Department of Education (ADE). Screening data for each student was securely stored in the ADH REDCap® system.

Data were analyzed by ASTDD as part of a technical assistance agreement among ASTDD, the Centers for Disease Control and Prevention's Division of Oral Health, and ADH OOH. For the sake of direct comparison of oral health indicators pre-and post-pandemic, only data from those schools that participated in both the 2019 and 2023 BSS events are described in the body of this report. A description of the oral health indicators of all 51 schools surveyed in 2022-2023 is included in the Appendix of this report.

KEY FINDINGS

- Between 2019-2020 and 2022-2023, there was a significant decline in the percentage of children with protective dental sealants (see Figure 3).
- In 2022-2023, children living in the **Southwest region** had the highest prevalence of decay experience and untreated decay. Children in the **Northeast region** had the lowest prevalence of protective dental sealants (see Figures 4-8).
- Among children screened in 2022-2023, there were racial, socioeconomic, and geographic disparities (see Figures 9-12).



Hispanic children had the highest prevalence of decay experience.



Black/African American children had the lowest prevalence of protective dental sealants.



Children eligible for free or reduced-price meals through the National School Lunch Program (NSLP), compared to those not eligible, had a higher prevalence of decay experience and untreated decay and lower prevalence of protective dental sealants (see Figure 12).

Participation by Race & Ethnicity

FIGURE 1. Race and Ethnicity Percentage (%) of 3rd Grade Students in Arkansas who Participated in Basic Screening Survey, **2019-2020**.

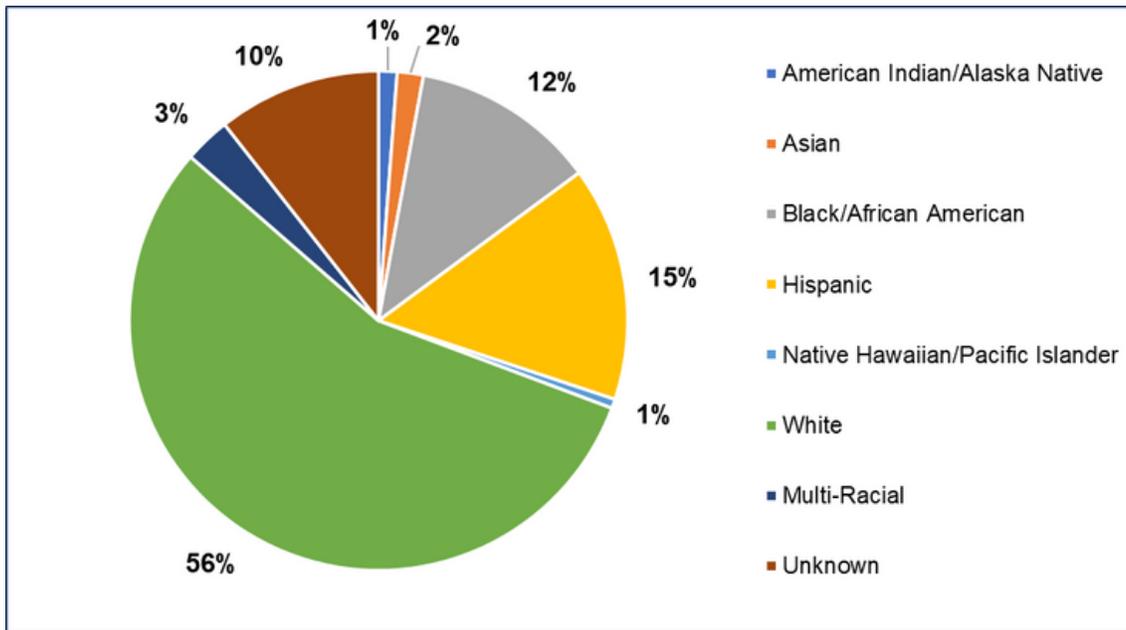
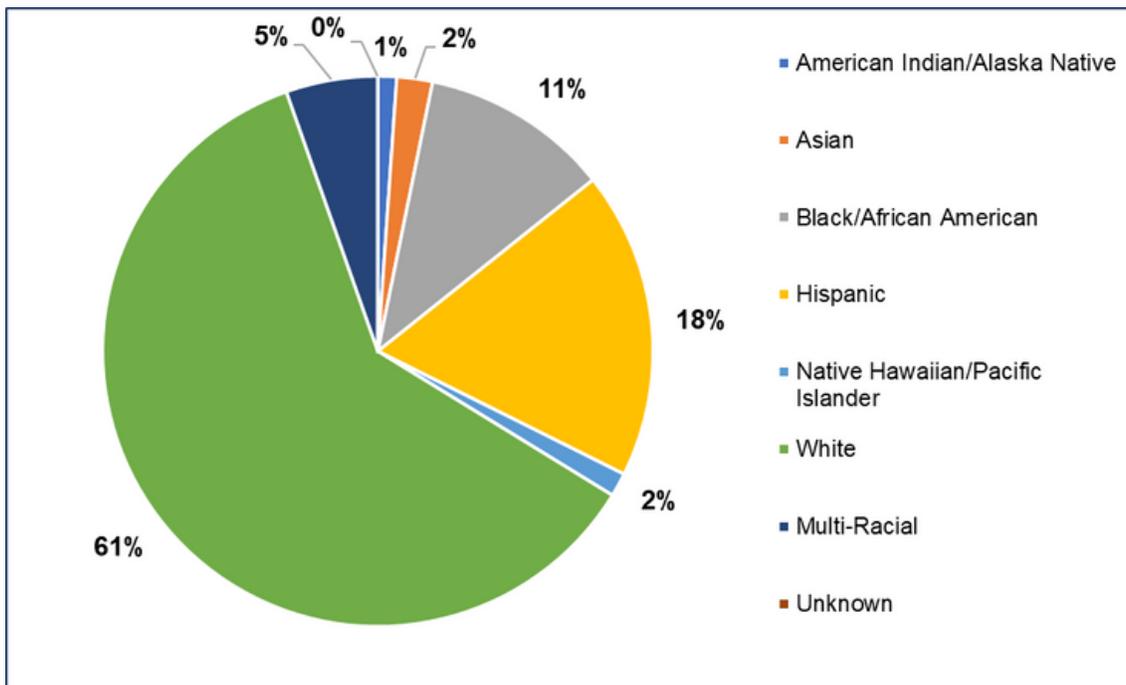
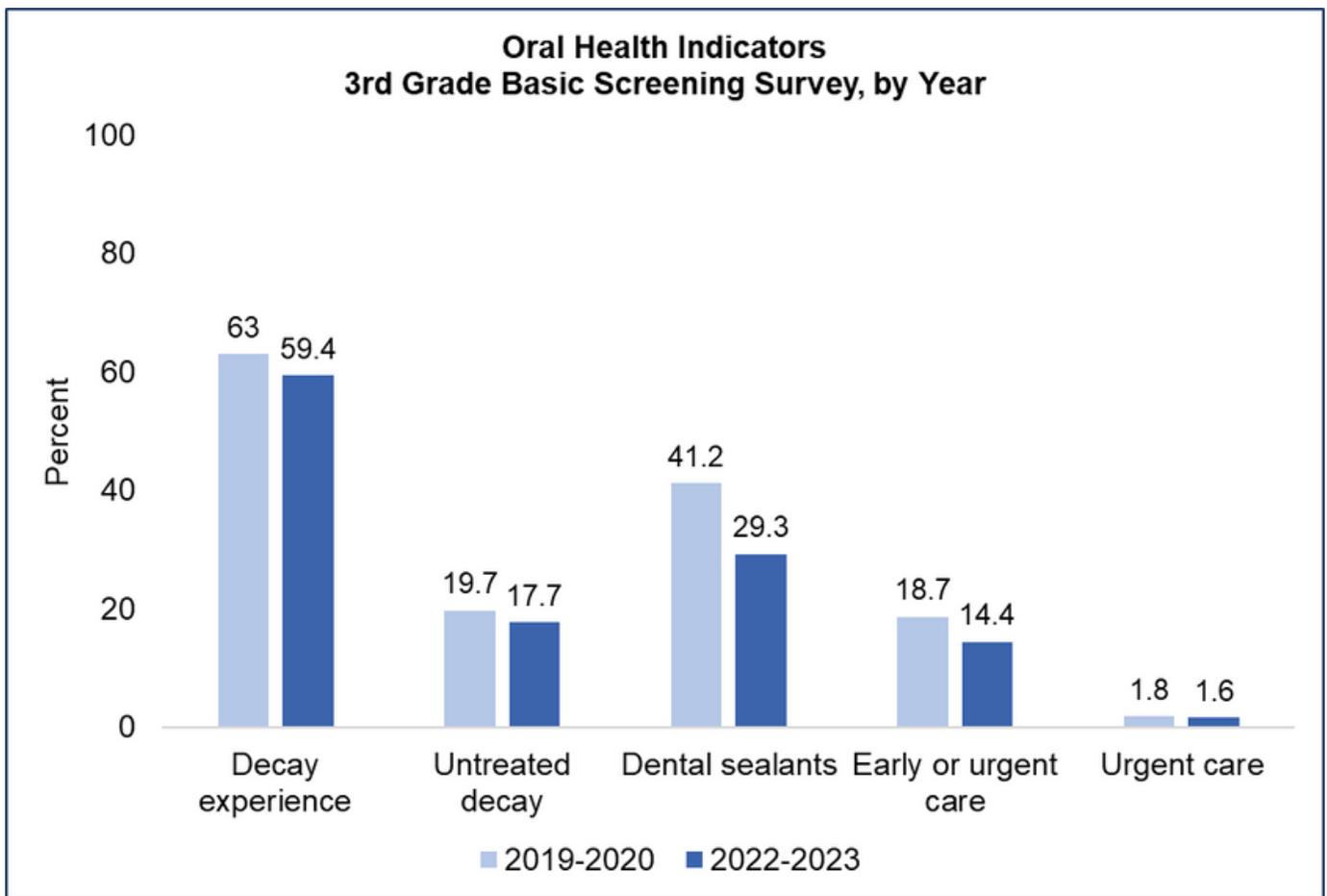


FIGURE 2. Race and Ethnicity Percentage (%) of 3rd Grade Students in Arkansas who Participated in Basic Screening Survey, **2022-2023**.



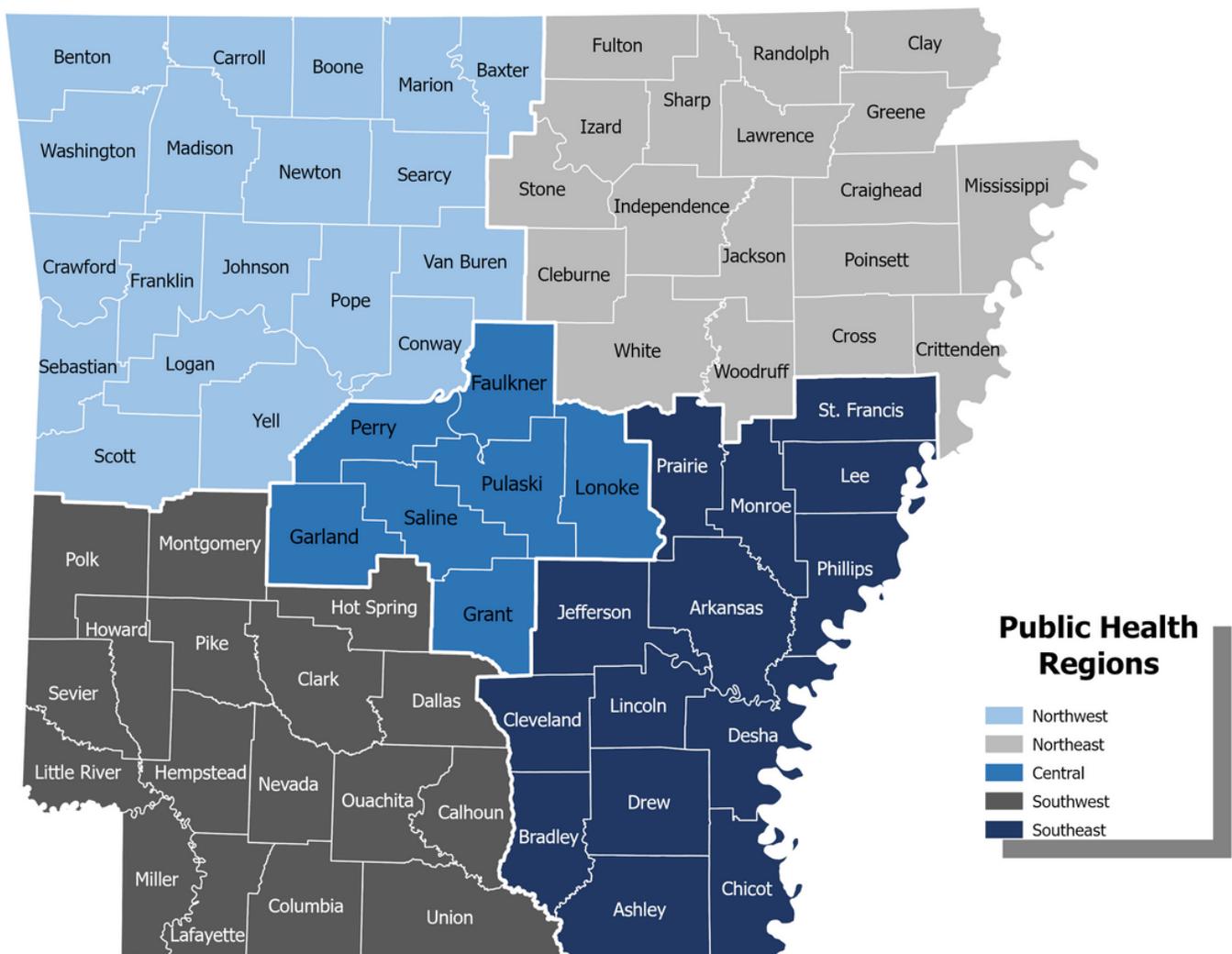
Overall Oral Health Indicators

FIGURE 3.



Oral Health Indicators by Geography

FIGURE 4.



Figures 5 through 8 show the variation of oral health indicators across Public Health Regions. Arkansas is divided into five public health regions that include the counties outlined in the image above (Figure 4).

FIGURE 5.

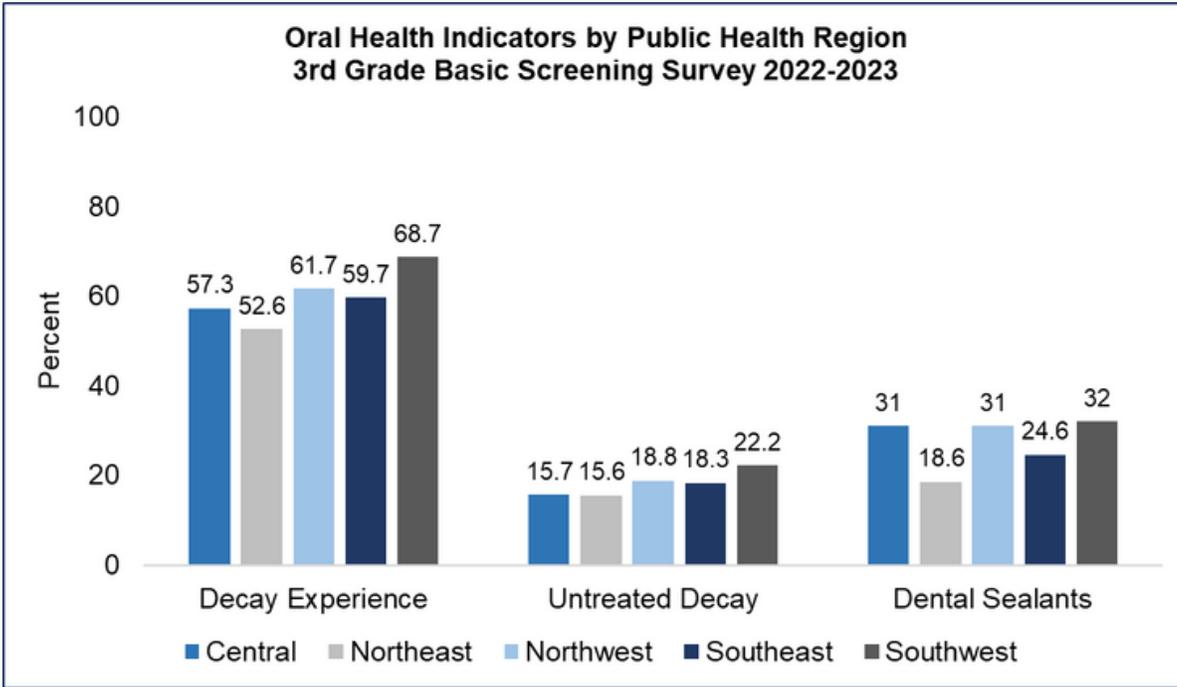


FIGURE 6.

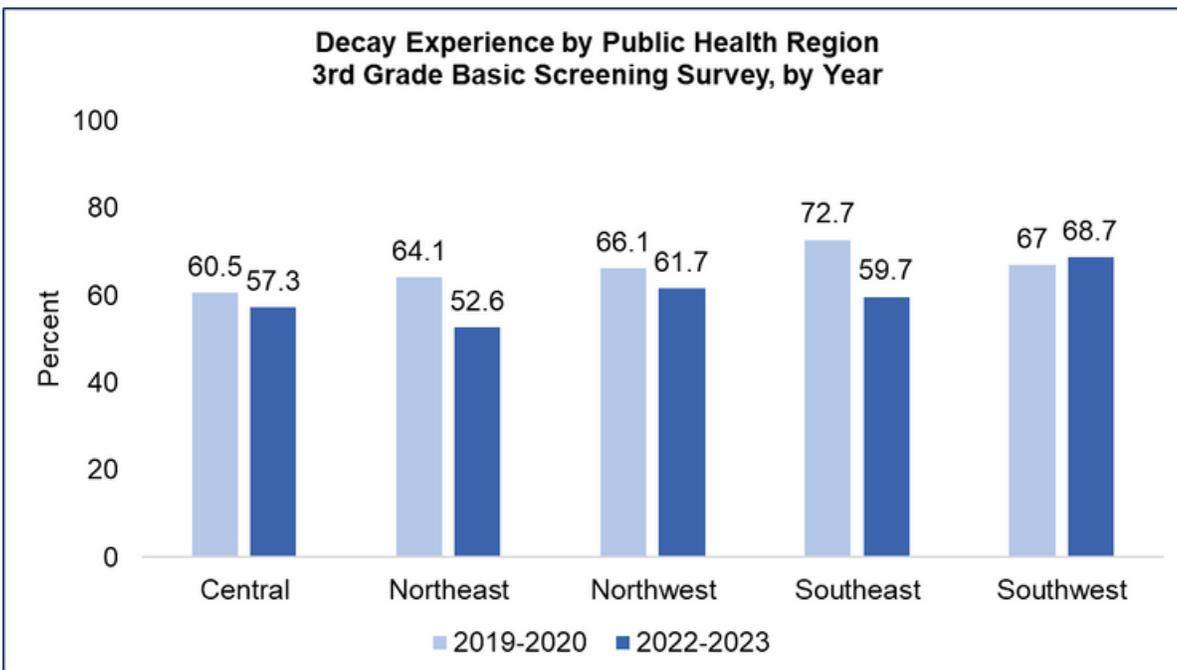


FIGURE 7.

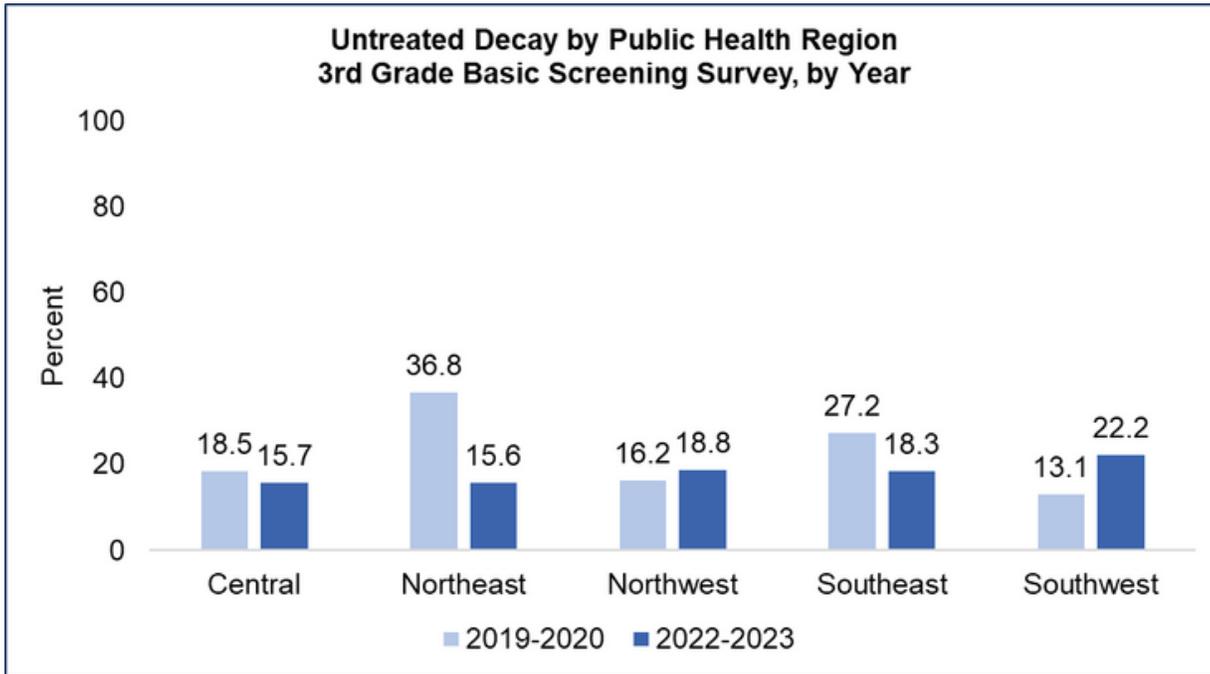
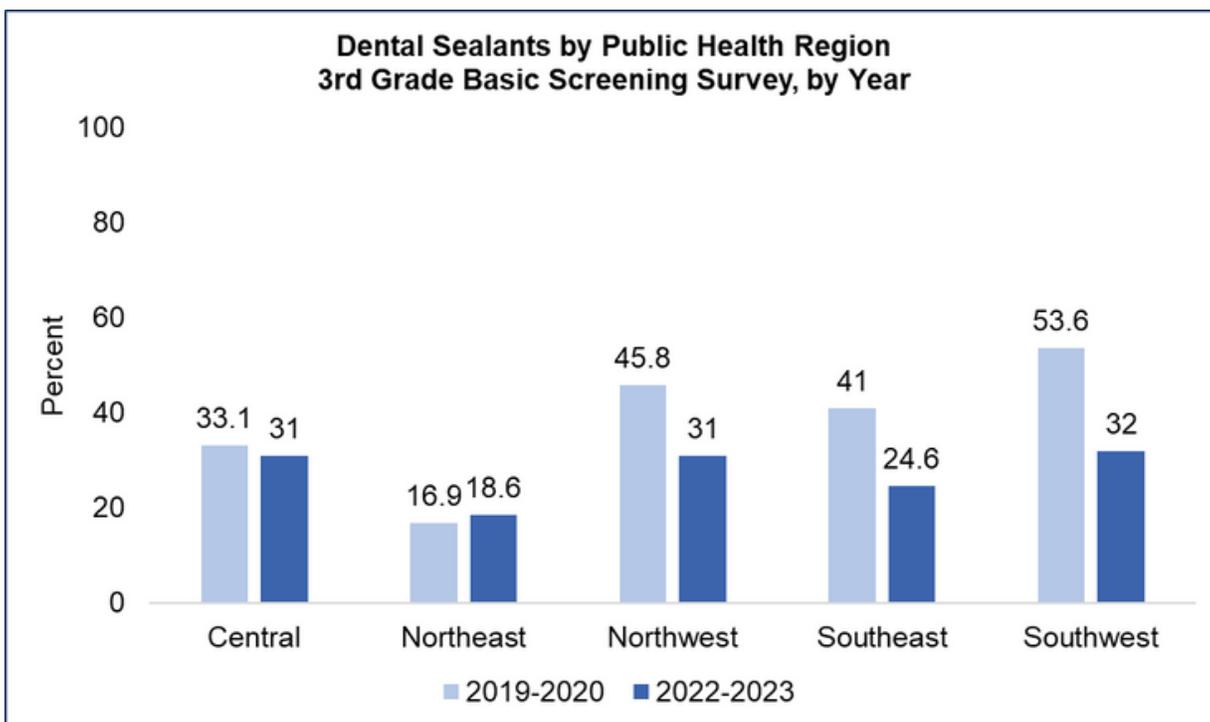


FIGURE 8.



Oral Health Indicators by Subpopulation

FIGURE 9.

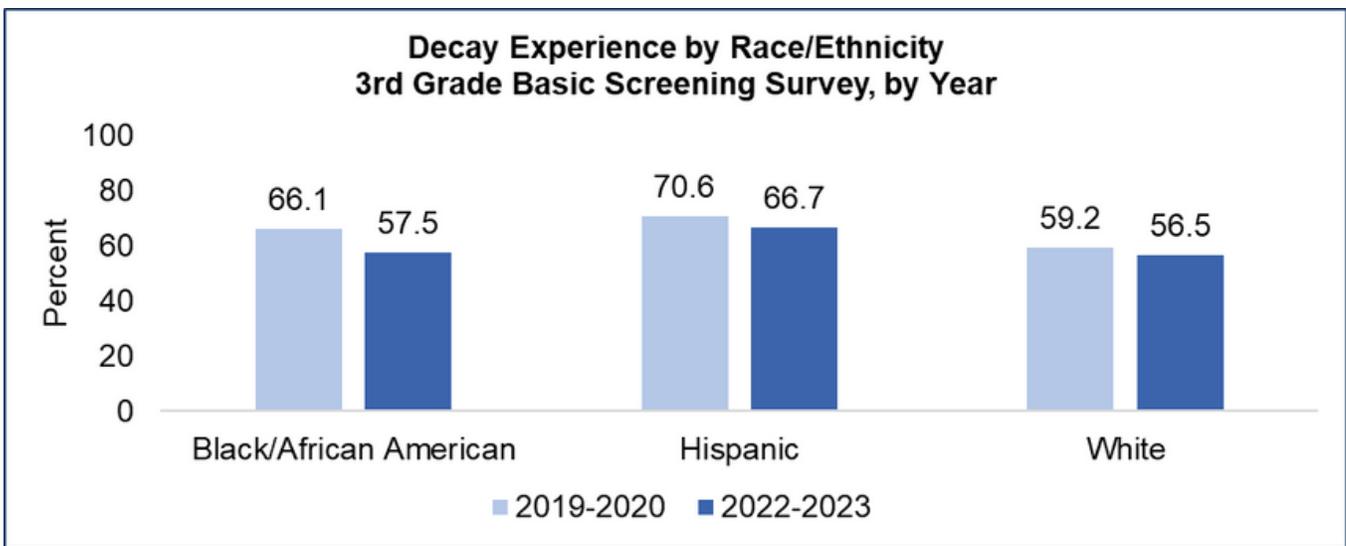


FIGURE 10.

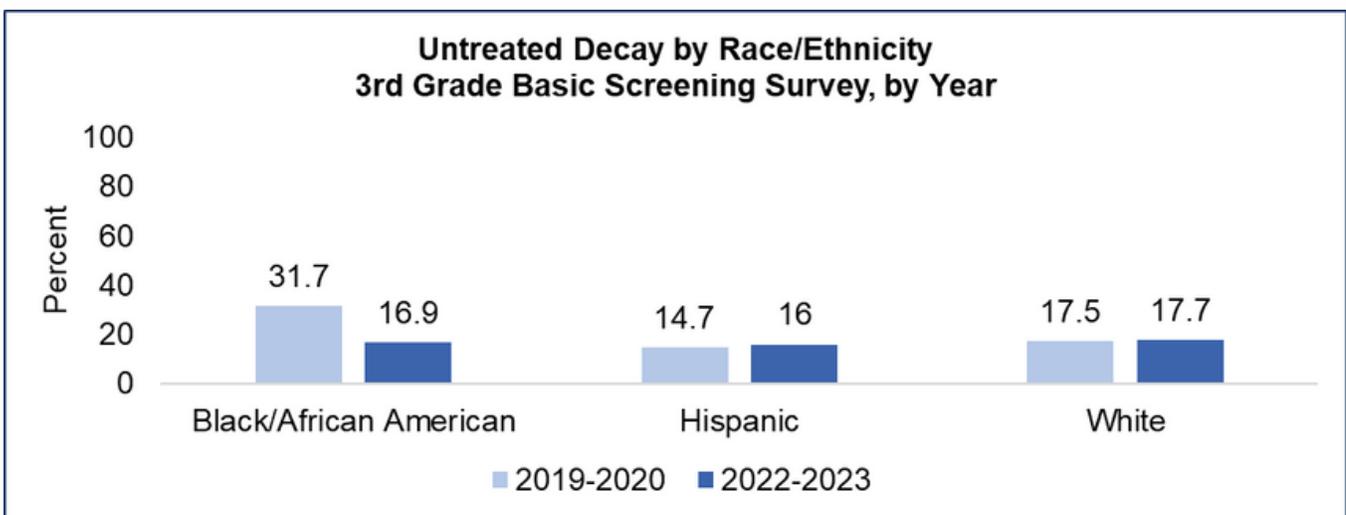


FIGURE 11.

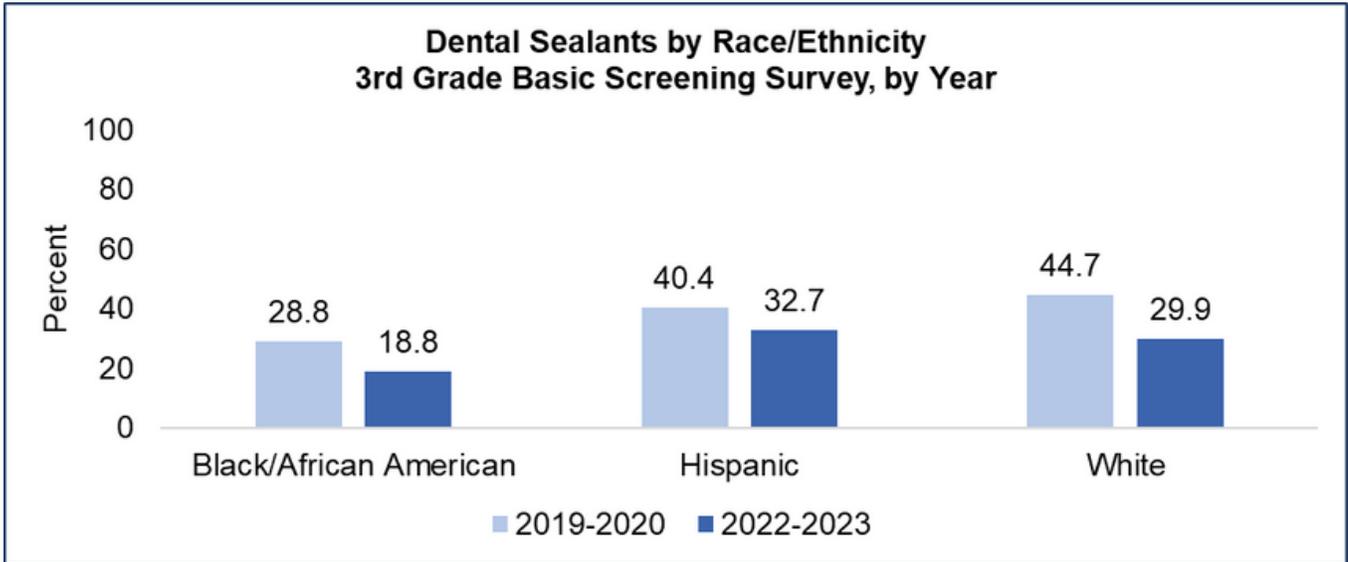
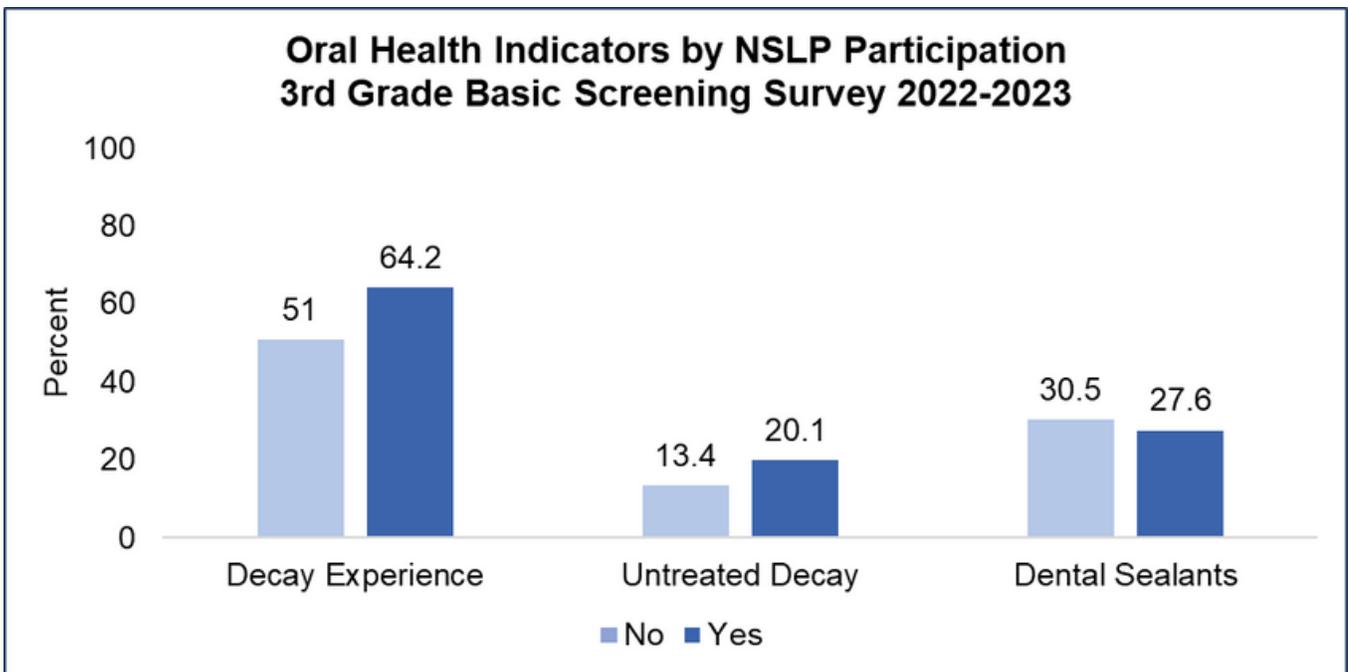


FIGURE 12.





LIMITATIONS

In both survey years, schools generally used passive (opt-out) consent to conduct screenings. However, one school required active (opt-in) consent for student participation in the 2023 BSS. As a result, 84% fewer students were screened in that school, which may bias changes observed in oral health indicators in the Northeast Public Health Region.

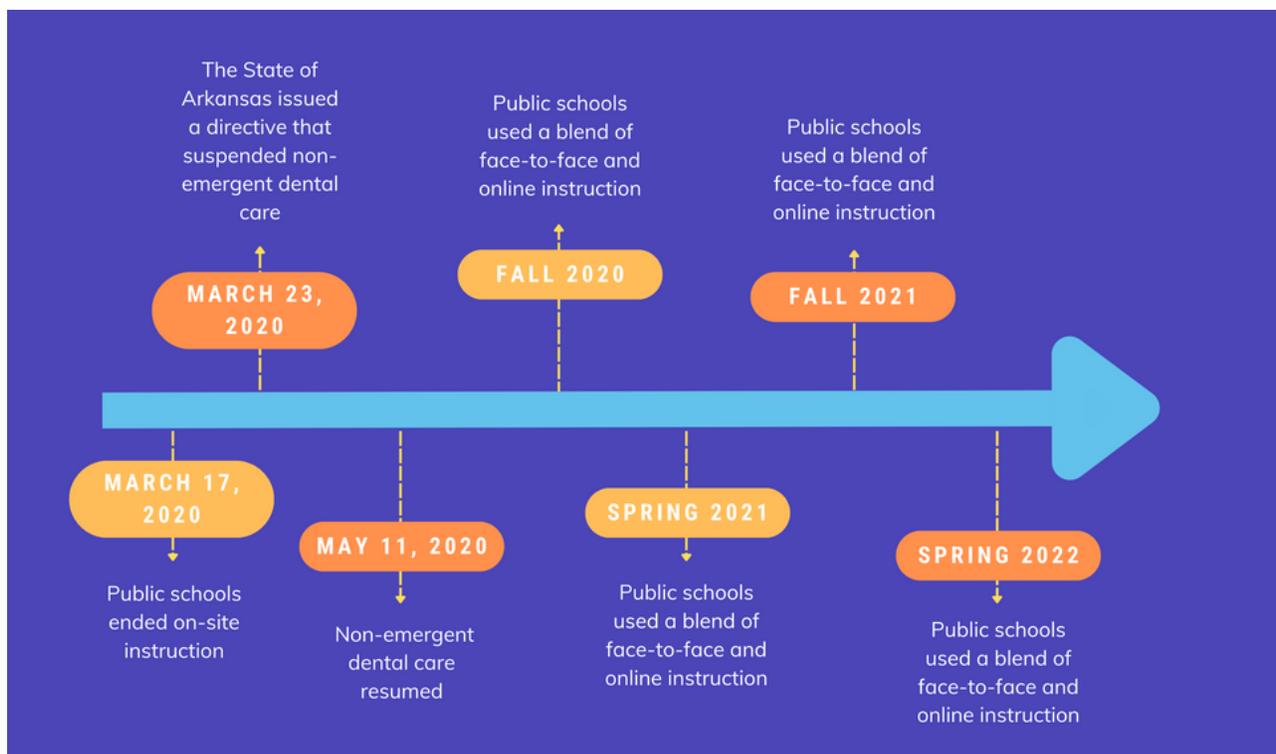
The 2019-2020 BSS did not collect student-level participation in NSLP, so changes in oral health indicators from 2019 to 2023 among students who participate in NSLP were not measured.

Of the 14 schools that did not participate in the 2023 BSS for whom replacement schools were not screened, 57% had student populations in which over 75% of students participated in the NSLP. Had these schools been surveyed, the results may have changed the overall measures observed in the 2023 BSS.

DISCUSSION

The COVID-19 pandemic made impacts on multiple facets of the lives of Arkansans. Citizens experienced changes in their financial status, travel patterns, physical activity, social interaction, food consumption, and access to in-person health services, including routine dental care.

Public schools ended on-site instruction on March 17, 2020, and did not resume until Fall 2020. The 2020-2021 and 2021-2022 public school years generally featured a blend of face-to-face and online instruction. On March 23, 2020, the State issued a directive that suspended non-emergent dental care that was in effect until May 11, 2020. Dentists who wished to resume elective dental services were required to follow COVID-19 infection prevention and control guidelines that included ample personal protective equipment, and social distancing protocols in patient waiting areas. All directives related to dentistry were transitioned to guidelines on February 26, 2021.



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Prior to the 2022-2023 BSS data collection and analysis, the assumption of the ADH OOH was that these changes were likely to have modified health behaviors that increased children's cavity risk. Following data analysis, however, the ADH OOH was pleased to find that this assumption was not validated. Contributing factors for this maintenance of oral health pre- and post-pandemic may include:

- Increased schedule flexibility promoting the performance of oral hygiene practices at home
- Minimal changes to children's dietary habits
- Increased caregiver supervision of children's oral hygiene practices due to remote or postponed work

Data analysis revealed that children's access to evidence-based preventive services like dental sealants was notably diminished by the pandemic. Contributing factors for this decrease in preventive services include:

- Diminished operations and/or closure of school-based services, such as ADH OOH-associated school-based sealant clinics
- Diminished patient flow in dental practices and less demand for preventive services¹
- Association of unmet child dental care with pandemic-related job or income loss²
- Avoidance of dental office settings due to perceived risk of COVID-19 exposure³

¹Choi SE, Mo E, Sima C, et al. Impact of COVID-19 on Dental Care Utilization and Oral Health Conditions in the United States. *JDR Clinical & Translational Research*. 2023;0(0). doi:10.1177/23800844231165016

²Burgette, J. M., Weyant, R. J., Ettinger, A. K., Miller, E., & Ray, K. N. (2021). What is the association between income loss during the COVID-19 pandemic and children's dental care?. *Journal of the American Dental Association* (1939), 152(5), 369-376. <https://doi.org/10.1016/j.adaj.2021.02.001>

³Nikolić, M., Mitić, A., Petrović, J., Dimitrijević, D., Popović, J., Barac, R., & Todorović, A. (2022). COVID-19: Another Cause of Dental Anxiety?. *Medical science monitor : international medical journal of experimental and clinical research*, 28, e936535. <https://doi.org/10.12659/MSM.936535>

APPENDIX

The figures included in this appendix display data that include the 51 schools that participated in the 2023 BSS (includes the five (5) schools that participated in the 2023 BSS but were not part of the 2019 BSS). The numbers 46 and 51 represent the total number of schools surveyed in 2019-2020 and in 2022-2023, respectively.

FIGURE 13.

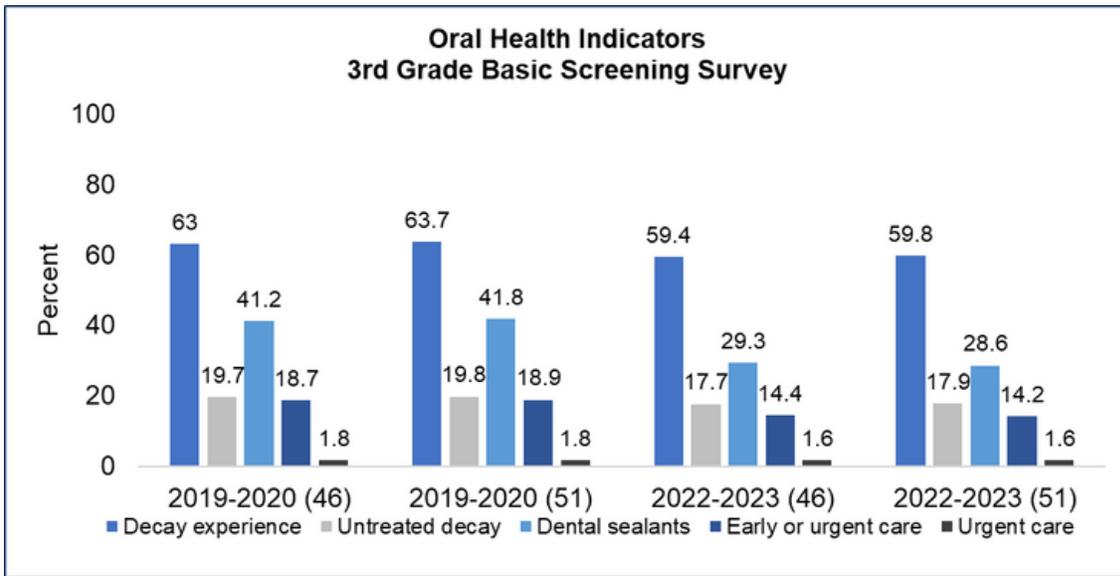
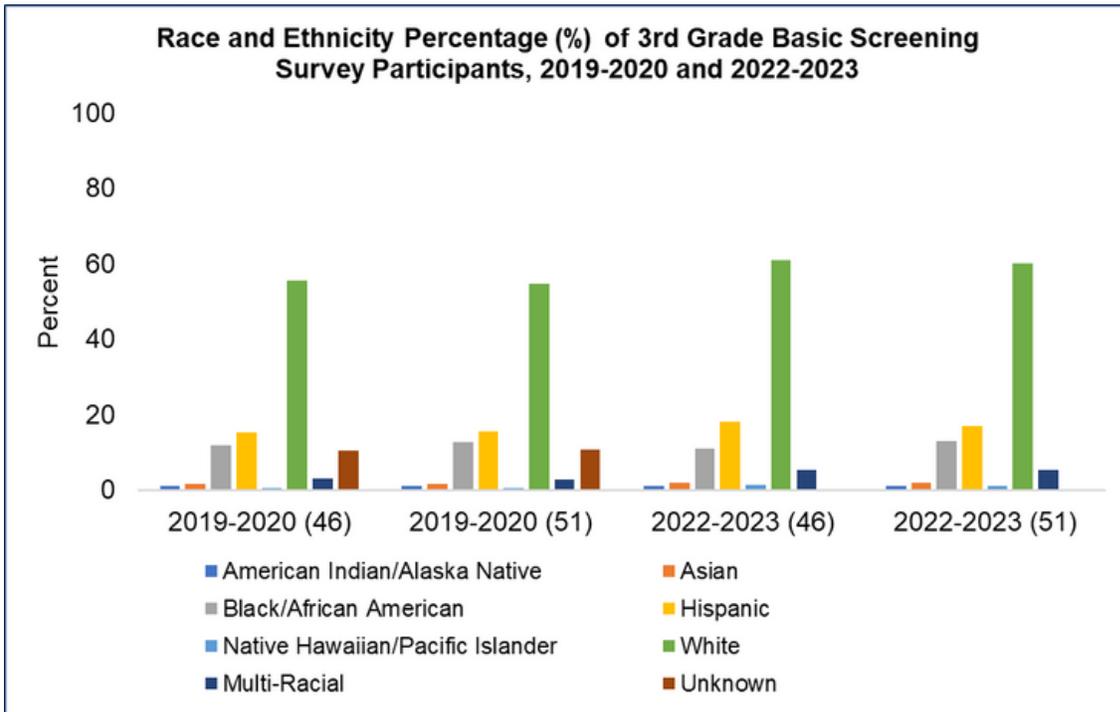


FIGURE 14.





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