

Healthy Smiles Healthy Bodies Survey 2015

The Oral Health of Arizona’s Kindergarten and Third Grade Children

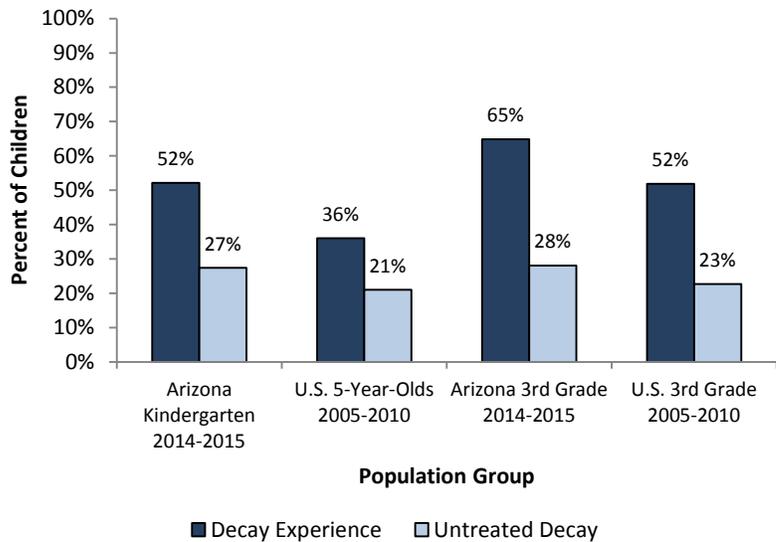
Data from the Arizona Healthy Smiles Healthy Bodies Survey

- More than half of Arizona’s kindergarten children (52%) have a history of tooth decay, higher than the national average for 5 year old children (36%).
- Almost two-of-three third grade children (64%) have a history of tooth decay, compared to 52% of third grade children in the general U.S. population.
- More than a quarter of Arizona’s kindergarten and third grade children (28%) have untreated tooth decay; slightly higher than the national average of 22%.
- About 44% of Arizona’s third grade children have at least one dental sealant on a permanent molar tooth; higher than the prevalence among the general U.S. third grade population (32%).
- Some oral health disparities still exist in Arizona with children attending lower-income schools and American Indian and Hispanic children having the highest prevalence of decay experience and untreated tooth decay.
- Arizona has been successful in efforts to address disparities in the prevalence of dental sealants.

Good oral health is important to a child’s social, physical and mental development. Even though tooth decay can be prevented, most children in Arizona still get cavities. To assess the current oral health status of Arizona’s elementary school children, the Arizona Department of Health Services, with support from First Things First, coordinated a statewide oral health survey of kindergarten and third grade children attending Arizona’s public schools. A total of 3,630 kindergarten and 2,373 third grade children received a dental screening at 84 schools during the 2014-2015 school year. This data brief presents information on the prevalence of tooth decay in the primary and permanent teeth of Arizona’s kindergarten and third grade children compared to the general U.S. population screened between 2005-2010 as part of the National Health and Nutrition Examination Survey (NHANES). It also describes the prevalence of dental sealants, a plastic-like coating applied to the chewing surfaces of children’s teeth to prevent tooth decay.

Prevalence of Decay Experience and Untreated Decay

Figure 1. Prevalence of decay experience and untreated tooth decay in the primary and permanent teeth of Arizona’s kindergarten and third grade children compared to children in the general U.S. population



Source: Arizona Healthy Smiles Healthy Bodies Survey, 2015

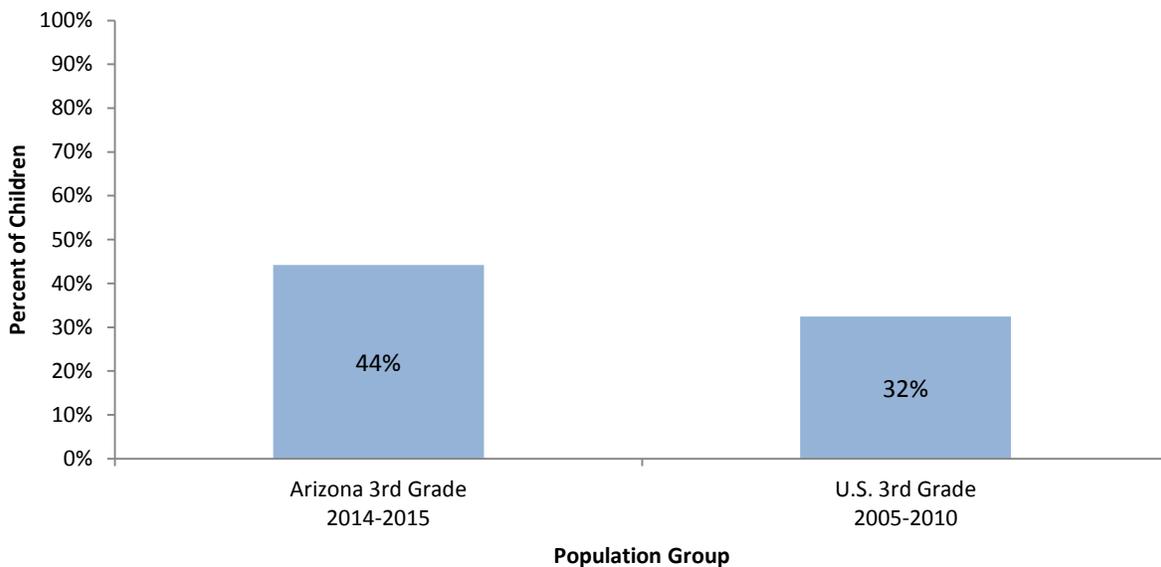
Decay experience means that a child has had tooth decay in the primary (baby) and/or permanent (adult) teeth in his or her lifetime. Decay experience can be past (fillings, crowns, or teeth that have been extracted because of decay) or present (untreated tooth decay or cavities). In 2014-2015, more than half of Arizona’s kindergarten children (52%) and almost two-of-three third grade children (64%) had decay experience; compared to 36% of five year olds and 52% of third grade children in the general U.S. population (NHANES, 2005-2010).

Left untreated, tooth decay can have serious consequences, including needless pain and suffering, difficulty chewing (which compromises children’s nutrition and can slow their development), difficulty speaking and lost days in school. More than a quarter of Arizona’s kindergarten and third grade children (28%) had untreated tooth decay. This compares to 22% of five year old and third grade children in the general U.S. population (NHANES, 2005-2010).

Prevalence of Dental Sealants

Dental sealants are thin plastic coatings that are applied to the grooves on the chewing surfaces of the back adult teeth to protect them from tooth decay. Most tooth decay in children occurs on these surfaces. Sealants protect the chewing surfaces from tooth decay by keeping germs and food particles out of these grooves. Less than half (44%) of Arizona’s third grade children had at least one dental sealant; compared to 32% of the general U.S. population in third grade (NHANES, 2005-2010). Most kindergarten children do not have adult molars so this information is reported only for third grade children – permanent molars generally erupt around 6 years of age.

Figure 2. Prevalence of dental sealants in the permanent molar teeth of Arizona’s third grade children compared to the general U.S. population in third grade



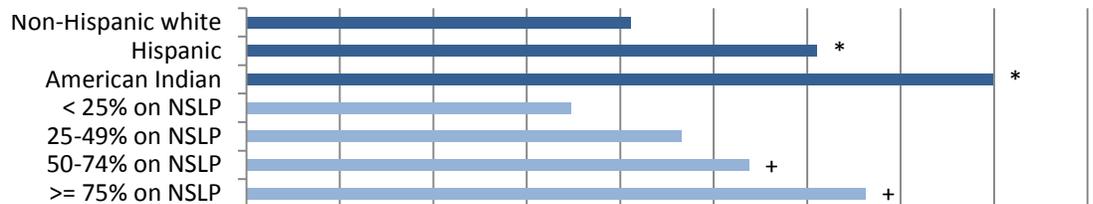
Source: Arizona Healthy Smiles Healthy Bodies Survey, 2015; National Health and Nutrition Examination Survey (NHANES), 2005-2010

Oral Health Disparities

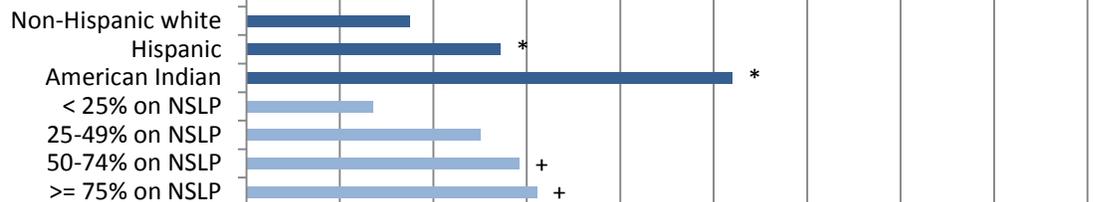
Influential socio-demographic indicators for oral health disparities in the United States include poverty status and race and ethnicity. In Arizona, lower income schools (schools with a high percentage of the students eligible for the national school lunch program)¹ have a significantly higher prevalence of decay experience and untreated decay compared to higher income schools with a low percent of students eligible for the national school lunch program. American Indian and Hispanic children have a significantly higher prevalence of decay experience and untreated decay compared to non-Hispanic white children. There is no significant difference in the prevalence of dental sealants among racial/ethnic groups or by socioeconomic status.

Figure 3. Prevalence of decay experience, untreated tooth decay and dental sealants among Arizona’s kindergarten and third grade children by race/ethnicity and percent of children in a school eligible for the national school lunch program (NSLP), 2014-2015

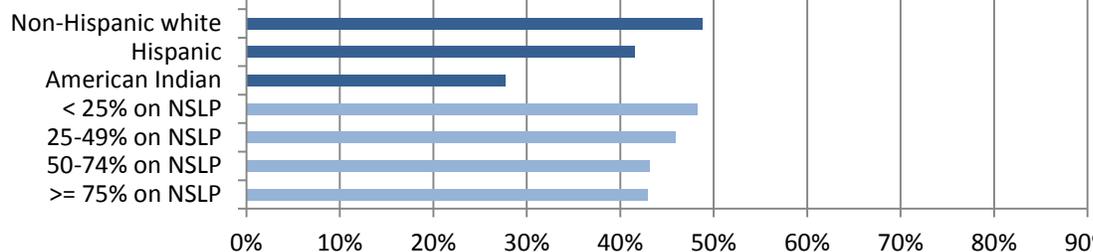
Decay experience



Untreated decay



Dental sealants (3rd grade only)



* Significantly different than non-Hispanic whites (p<0.05), + significantly different than < 25% on NSLP p<0.05)

¹ To be eligible for the NSLP, the child must be from a household whose income is below 185% of the federal poverty level.

Data Source and Methods

This data brief is based on data from the Arizona Health Smiles Healthy Bodies Survey which was conducted during the 2014-2015 school year. The Arizona survey screened children in kindergarten and third grade from a representative sample of public elementary schools in non-reservation communities in Arizona. The sampling frame consisted of all non-reservation public and charter schools with 20 or more children in kindergarten and/or third grade. The sampling frame was stratified by county and percent of the school's students eligible for the national school lunch program. A systematic probability proportional to size sampling scheme was used to select 104 schools of which 84 agreed to participate.

Trained dental professionals completed oral health screenings at the participating schools. The following information was collected for each child: grade, presence of untreated decay in the primary (baby) or permanent (adult) teeth, presence of treated decay in the primary or permanent teeth, urgency of need for dental care, and for third graders only presence of dental sealants in the permanent first molar teeth. Parents were asked to provide information on a child's race and ethnicity on an optional questionnaire. Self-reported race/ethnicity was only available for 30% of the children screened. *Basic Screening Survey* clinical indicator definitions and data collection protocols were used.²

All statistical analyses were performed using the complex survey procedures within SAS (Version 9.3; SAS Institute Inc., Cary, NC). Sample weights were used to produce population estimates based on selection probabilities. It should be noted that the National Health and Nutrition Examination Survey (NHANES) data for five year old and third grade children is from 2005-2010.

Definitions

Untreated decay: Describes dental cavities or tooth decay that have not received appropriate treatment.

Decay experience: Refers to having untreated decay or a dental filling, crown, or other type of restorative dental material. Also includes teeth that were extracted because of tooth decay.

Dental sealants: Describes plastic-like coatings applied to the chewing surfaces of back teeth. The applied sealant resin bonds into the grooves of teeth to form a protective physical barrier.

² Association of State and Territorial Dental Directors. Basic screening surveys: an approach to monitoring community oral health. (WWW document). URL: <http://www.astdd.org/basic-screening-survey-tool>.

Data Tables

Table 1. Prevalence of decay experience and untreated tooth decay in the primary and permanent teeth among Arizona’s *kindergarten* children by selected characteristics, 2015

Characteristic	Decay Experience			Untreated Decay		
	Percent	Lower CL	Upper CL	Percent	Lower CL	Upper CL
All kindergarten children (n=3,630)	52.1	47.7	56.5	27.4	23.6	31.3
Race/ethnicity						
White non-Hispanic (n=436)	34.0	27.5	40.5	14.8	8.3	21.3
Hispanic (n=800)	56.2	49.9	62.6	28.3	23.0	33.7
American Indian (n=117)	75.5	49.9	100.0	48.4	28.8	68.0
Percent eligible for NSLP						
< 25% eligible (n=150)	29.3	22.1	36.5	10.7	5.5	15.8
25-49% eligible (n=787)	40.6	32.6	48.5	24.2	13.3	35.1
50-74% eligible (n=839)	48.3	44.6	51.9	29.1	25.8	32.4
≥ 75% eligible (n=1,854)	62.4	58.3	66.6	31.5	27.1	35.9

NSLP: National school lunch program; Lower CL: Lower 95% confidence limit; Upper CL: Upper 95% confidence limit

Table 2. Prevalence of decay experience and untreated tooth decay in the primary and permanent teeth and prevalence of dental sealants on permanent molar teeth among Arizona’s *third grade* children by selected characteristics, 2015

Characteristic	Decay Experience			Untreated Decay			Dental Sealants		
	Percent	Lower CL	Upper CL	Percent	Lower CL	Upper CL	Percent	Lower CL	Upper CL
All 3 rd grade children (n=2,373)	64.0	59.3	68.7	28.0	23.5	32.5	44.2	39.8	48.5
Race/ethnicity									
White non-Hispanic (n=260)	54.3	42.5	66.2	22.5	16.5	28.5	48.8	38.4	59.1
Hispanic (n=504)	68.5	62.6	74.4	25.6	18.8	32.4	41.6	34.5	48.7
American Indian (n=85)	86.4	72.0	100.0	57.2	34.0	80.4	27.7	7.7	47.8
Percent eligible for NSLP									
< 25% eligible (n=121)	41.8	38.4	45.2	17.2	10.4	24.1	48.3	26.7	70.0
25-49% eligible (n=412)	57.5	48.8	66.1	26.7	10.6	42.8	45.9	38.8	53.1
50-74% eligible (n=616)	61.9	56.8	67.1	29.3	23.0	35.5	43.2	35.8	50.6
≥ 75% eligible (n=1,224)	72.1	67.3	76.9	30.6	24.7	36.5	42.9	37.1	48.8

NSLP: National school lunch program; Lower CL: Lower 95% confidence limit; Upper CL: Upper 95% confidence limit

Table 3. Prevalence of decay experience and untreated tooth decay in the primary and permanent teeth among Arizona’s *kindergarten and third grade* children by selected characteristics, 2015

Characteristic	Decay Experience			Untreated Decay		
	Percent	Lower CL	Upper CL	Percent	Lower CL	Upper CL
All children (n=6,003)	56.8	52.4	61.2	27.7	23.8	31.5
Grade						
Kindergarten (n=3,630)	52.1	47.7	56.5	27.4	23.6	31.3
Third (n=2,373)	64.0	59.3	68.7	28.0	23.5	32.5
Race/ethnicity						
White non-Hispanic (n=696)	41.1	35.4	46.7	17.5	12.2	22.7
Hispanic (n=1,304)	61.1	56.1	66.1	27.2	21.9	32.6
American Indian (n=202)	79.9	64.4	95.5	52.0	36.5	67.4
Percent eligible for NSLP						
< 25% eligible (n=271)	34.8	30.2	39.5	13.6	7.9	19.3
25-49% eligible (n=1,199)	46.5	37.4	55.5	25.1	12.6	37.6
50-74% eligible (n=1,455)	53.8	50.5	57.0	29.2	25.5	32.9
≥ 75% eligible (n=3,078)	66.3	62.2	70.4	31.1	26.6	35.7

NSLP: National school lunch program; Lower CL: Lower 95% confidence limit; Upper CL: Upper 95% confidence limit

