



Final Report
2016 / 2017 School
Year

Adolescent Oral
Health Campaign

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Introduction

During the 2016 – 2017 school year, the Oral Health Program (OHP) launched an Adolescent Oral Health Campaign to educate middle school and high-school aged students about oral health care with the mission of encouraging positive oral health behaviors and increasing the participation and utilization of dental services. The campaign targeted middle school and high school health classes along the Wasatch Front. The educational intervention consisted of a presentation given by the OHP Oral Health Educator and volunteer dental hygiene students. Presentations were between 45 and 70 minutes in length, and varied by the school. Anonymous pre- and post-tests were administered to all students before and after the educational segment. These assessments asked knowledge-based questions about oral health topics that were addressed in the educational presentation. In addition, the assessments contained questions about students' demographics, such as age, Zip code, race and ethnicity, and questions about access to dental services, such as the last time the student saw a dentist or dental hygienist. Completed surveys were then entered into Survey Monkey in order to evaluate the effectiveness of this oral health intervention. In addition, educational brochures that included a list of local safety net dental clinics were made available to all students.

The OHP Oral Health Educator, provided 122 presentations at 19 schools for a total of 2,882 middle and high school students during the 2016 – 2017 school year. Through a partnership with the Utah Schools for the Deaf and the Blind, campaign material was modified and presentations were offered to 68 students in special needs classrooms who were either deaf or blind students.

Goals and Objectives

The primary goal of the Adolescent Oral Health Campaign was to increase the oral health knowledge and healthy behaviors among adolescents attending public and some charter schools in Utah, especially along the Wasatch Front. To meet this goal, the presentation focused on individual behaviors that adolescents could control in their lives, as home care is a major behavior students can control and improve. Another goal was to increase the number of students accessing dental services at least once a year by encouraging students to seek dental services and describing the benefits of such services. Low cost dental resources were made available to all students.

Methods

Intervention

A one-time oral health intervention was designed specifically for middle school students with a modified presentation designed for high school students. A pre-test was completed by the students and turned in prior to the beginning of the intervention. The oral health presentation covered a multitude of topics including proper brushing and flossing habits, healthy nutrition choices such as limiting sugary snacks and drinks, how a cavity is formed, how to prevent gum disease, how to properly clean braces and retainers, and the importance of regular dental care. The Health Belief Model, a psychological health behavior change model, was used to address perceived barriers to good oral hygiene habits. The effectiveness of the Adolescent Oral Health Campaign was measured through pre- and post-tests, completed by students in the classroom in paper format. Students receiving the modified presentation through the Utah Schools for the Deaf and the Blind were allowed extra time to complete the pre-test by taking it prior to the Oral Health Educator's arrival.

School Participation

Although public schools were the main focus for this campaign, some charter schools were also contacted and received the intervention. These schools included: The International Charter School, Polaris High School teen mom's program, and Teen Success through Planned Parenthood and the Utah School for the Deaf and the Blind. A special emphasis was placed on schools in Canyons, Granite, Ogden, Park City, and Tooele School Districts. Presentations were primarily scheduled by the Oral Health Educator contacting individual health teachers in schools along the Wasatch Front. Schools were selected to participate in the Oral Health Assessment based on the health teacher's response to our program. As a result, schools were not randomly selected for this campaign.

Analysis

Completed pre- and post-tests were entered into Survey Monkey by OHP's Oral Health Educator and by volunteer dental hygiene students. Complete response data was downloaded from Survey Monkey in a Microsoft Excel file, and uploaded into SAS 9.4 for analysis.

Students were allowed to select more than one race category. Responses were re-categorized to properly account for students who selected multiple races; students with more than one selection were re-categorized as "Mixed Race" to fit with US Census definitions. "Hispanic" was also listed as a racial category in the pre-test; this option was reclassified as a separate category, "Ethnicity." Any students who marked "Hispanic" on their pre-test was categorized as "Hispanic/Latino," while all students who did not mark this option were categorized as "Not Hispanic/Latino."

Average student age, distribution of student age, race, and ethnicity, and responses to all survey questions were analyzed. In addition, comparisons of pre- and post-test responses to all survey questions, as well as any stratified analyses of specific oral health knowledge questions were conducted in SAS 9.4.

Results

Demographics

Demographics of students at participating schools are presented in Table 1. Distribution of ages and student gender were calculated based on pre-test responses. More than 98% of students reported being between the ages of 11 and 17. Average student age was 13.6 years (SD±1.4 years). There was no significant difference in student participation by gender; however, 48.3% of students identified as female in pre-tests, compared with 51.7% of students who identified as male.

The majority of students (81.2%, $n = 2317$) identified as White, while the remainder of students identified as non-White: 5.1% identified as persons who are Black/African American ($n = 144$), 4.5% identified as persons who are Asian ($n = 127$), 2.2% as persons who are American Indian/Native American ($n = 64$), 1.6% as persons who are Native Hawaiian/Pacific Islander ($n = 45$), and 0.7% as “Other” ($n = 19$). Finally, 4.8% of students selected multiple races and were re-categorized as persons who are Mixed Race ($n = 137$).

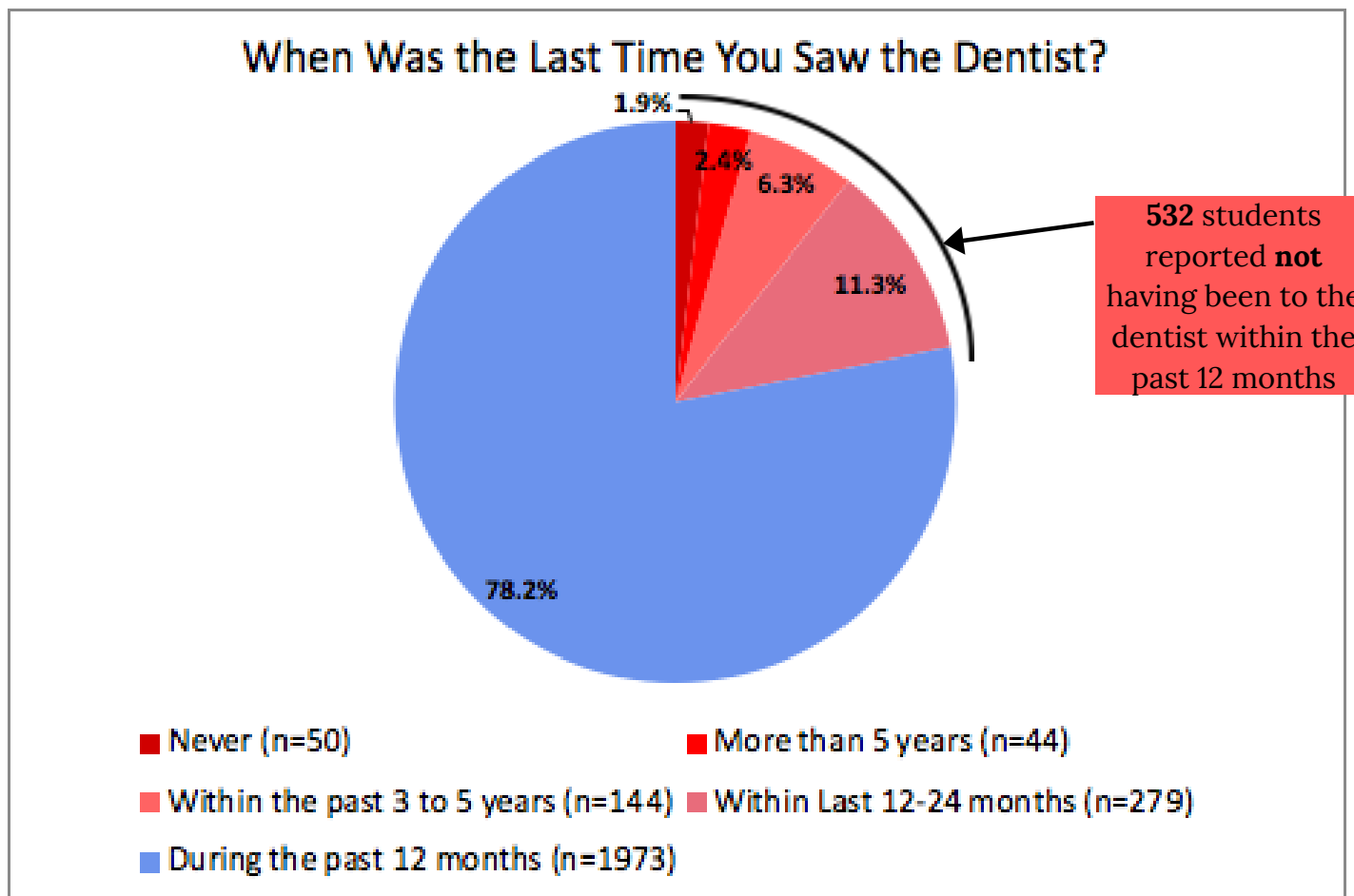
Nearly three-fourths of students were classified as persons who are non-Hispanic (70.9%, $n = 2039$), and just over one-fourth were classified as persons who are Hispanic (29.1%, $n = 837$).

Table 1: Student Demographics		
	Total No. Students (n = 2876)	Percentage (%)
Age		
11	146	5.3%
12	317	11.6%
13	989	36.2%
14	632	23.1%
15	316	11.6%
16	233	8.5%
17	55	2.0%
18	26	1.0%
Gender		
Female	1352	48.3%
Male	1448	51.7%
Race		
American Indian/Native American	64	2.2%
Asian	127	4.5%
Black/African American	144	5.1%
Native Hawaiian/Pacific Islander	45	1.6%
White	2317	81.2%
Other	19	0.7%
Mixed Race	137	4.8%
Ethnicity		
Hispanic/Latino	837	29.1%
Non-Hispanic/Latino	2039	70.9%

Oral Health Behavior Questions

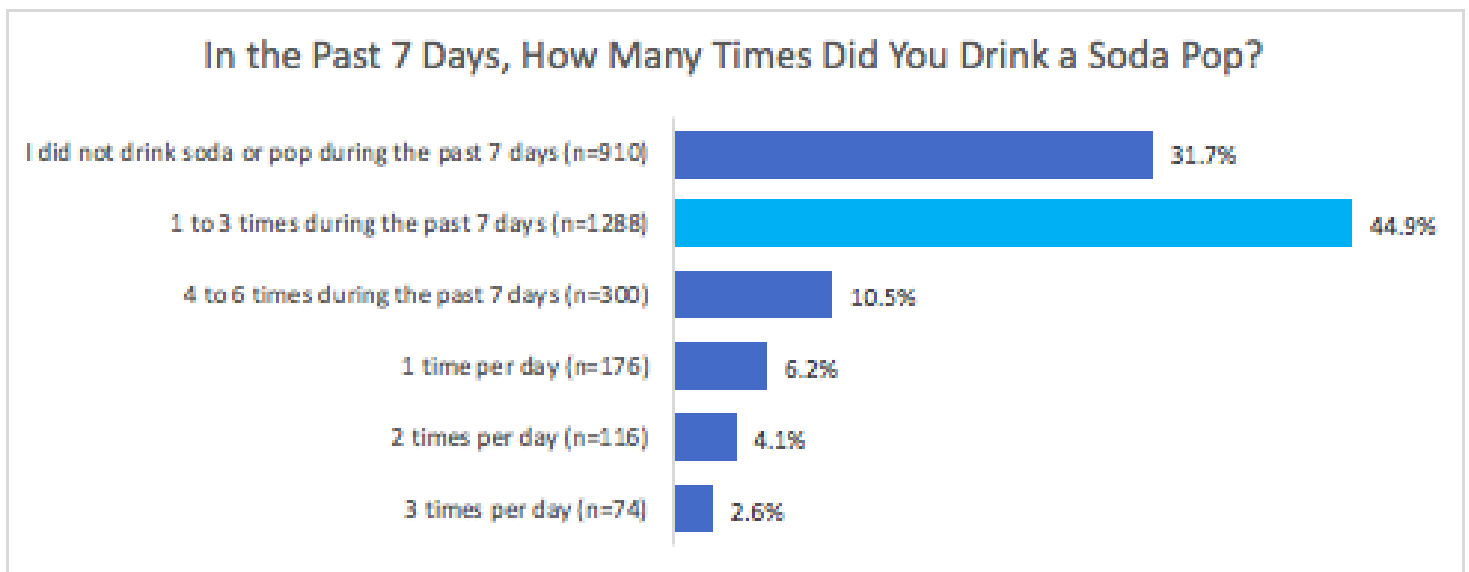
When was the last time you saw a dentist for a check-up, exam, teeth cleaning, or other dental work?

The majority of students reported having a dental visit within the last 12 months (78.2%, n = 2220). Just over ten percent of students reported visiting a dentist between 12-24 months ago (11.3%, n = 321), 6.3% of students reported having a dental visit within the last three to five years (n = 178), 2.4% of students reported that their last dental visit was more than five years ago (n = 69), and 1.9% of students reported that they had never been to the dentist (n = 59).



During the past seven days, how many times did you drink a can, bottle, or glass of soda pop, such as Coke, Pepsi, or Sprite? (Do not include diet soda or diet pop)

Just under half of the students reported consuming one to three sodas over the course of the previous week (44.9%, n = 1288), and nearly one-third of the students reported not consuming any soda during the previous week (31.7%, n = 910). Just over 10% of the students reported consuming soda at least one soda per day (12.9%, n = 369), or consuming soda four to six times a week (10.5%, n = 300).

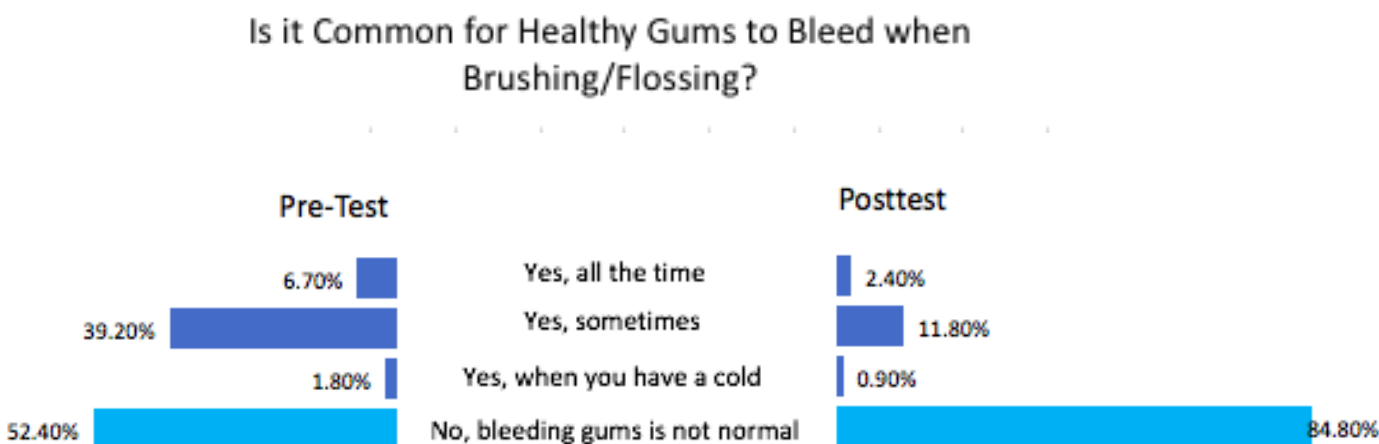


Oral Health Knowledge Questions

As noted previously, topics covered in the educational intervention included cavities, gum disease, nutrition with an emphasis on soda consumption, braces, and the importance of using mouth guards while engaging in athletic activities. Questions geared towards assessing students' understanding of specific topics were asked in both the pre- and post-tests. A comparison of pre- and post-test responses for each of these questions is presented below. A table of all questions asked and the number and frequency of responses given for each answer choice is presented at the end of this report.

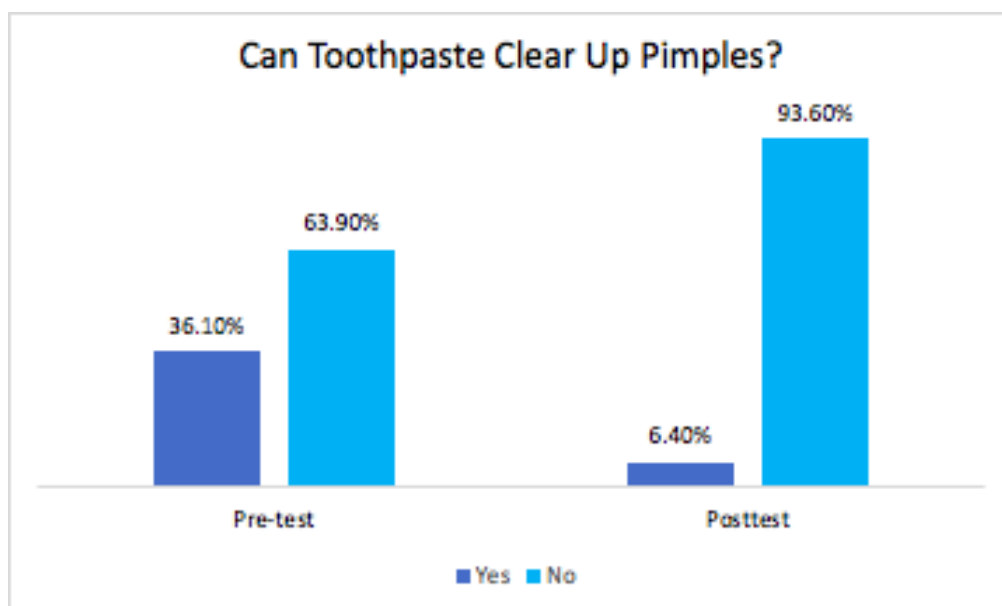
Is it common for healthy gums to bleed with brushing / flossing?

The correct response to this question is “No, bleeding gums are not normal.” Just over half of the students selected the correct response during the pre-test (52.3%, n = 1493), compared with 84.8% (n = 1916) selecting this response during the post-test.



Can toothpaste clear up pimples?

There is no scientific evidence that toothpaste helps with pimples. More than half of the students selected the correct answer in the pre-test (63.9%, n = 1790), while nearly all the students selected the correct response on the post-test (93.6%, n = 2092).

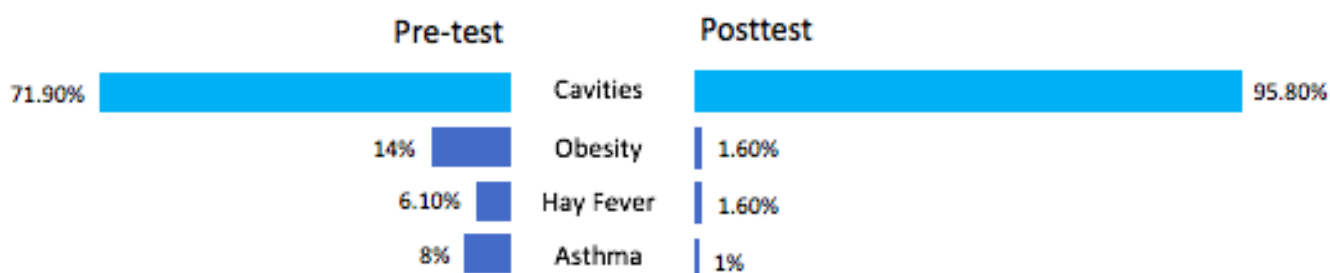


Which of the following chronic diseases is most common among children / teens?

This question sought to determine whether students understood the significant effect that poor oral health has on a population level, in addition to an individual level. The National Center of Health Statistics (2015) reported that in 2011-2012, 58% of youth between the ages of 12 and 19 has some form of decay in an adult tooth. Cavities are five times more common than asthma and seven times more common than hay fever.

Nearly three-fourths of the students, 71.94%, selected the correct response on the pre-test (n = 2036). Nearly all students, 95.8%, selected the correct response on the post-test (n = 2169).

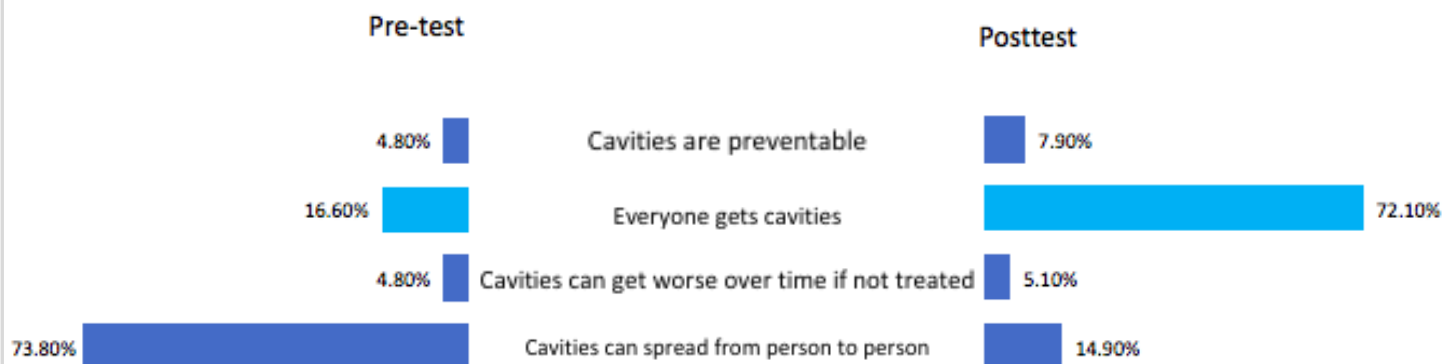
Most Common Chronic Disease Among Children/Teens



All of the following statements about cavities are true except for one. Mark the false statement.

The correct response to this question is that the statement “Everyone gets cavities” is false. A majority of students (73.8%, n = 2095) incorrectly chose “Cavities can spread from person to person” as the false statement on the pre-test. On the post-test, however, 72.1% of the students selected the correct false statement (n = 72.1%).

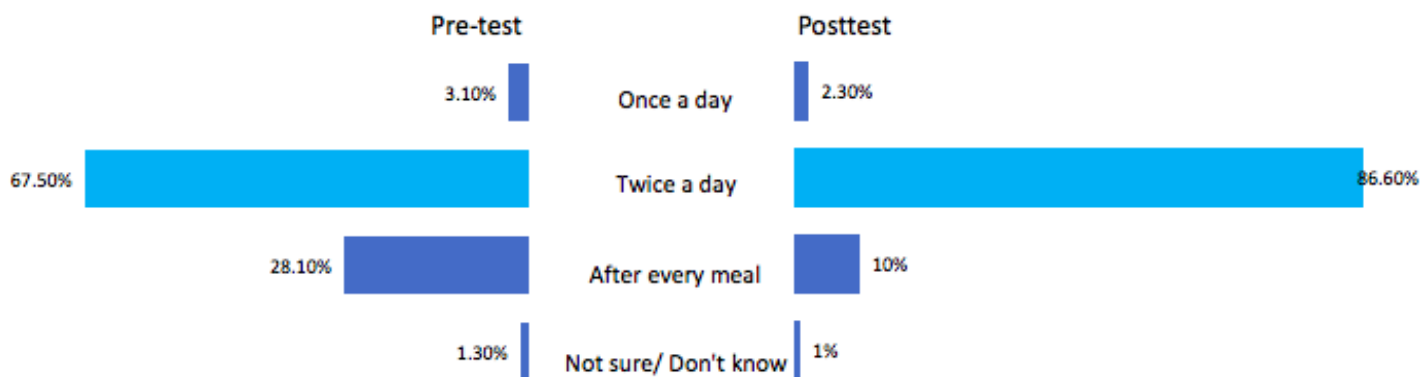
Choose the Single **False** Statement About Cavities



How often is it recommended that you brush your teeth?

This question sought to provoke students to think about the importance of home care in overall oral health. Pre-test results indicate that the majority of the students (67.5%, $n = 1924$) were already aware that brushing twice a day for two minutes is recommended by the American Dental Association (ADA). More than one-fourth of the students (28.1%, $n = 800$) students indicated on the pre-test that brushing after every meal was preferred – while the ADA recommends this frequency for certain cases, such as for individuals who wear orthodontic appliances, the recommendation for the general public is to brush teeth twice a day for two minutes. The post-test demonstrated a clear shift in students' knowledge, with 86.6% ($n = 1959$) of students marking the correct answer that brushing twice a day was preferred.

How Often is it Recommended You Brush Your Teeth?



Limitations

Some limitations should be noted. The first limitation relates to school selection; specific schools were contacted by OHP's Oral Health Educator, and if the school health teacher agreed to the presentation then OHP presented at that school. As a result, schools were not randomly selected to participate in the intervention, and the students who received the intervention program may not be representative of all of Utah's adolescents.

A second limitation relates to data collection and tracking. Pre-and post-tests were each assigned a unique identifier that indicated which school and during which semester the intervention was given; however, these identifiers did not provide any distinction between classrooms within a school. As a result, it was not possible to analyze survey results by school classroom. A third limitation exists due to the process of data entry, as many pre- and post-tests were entered into the data tracking system without the portion of their unique identifier indicating which school they represented. As a result, data could not be analyzed to look for differences in pre- and post-test results between schools. Finally, there was a significant difference between the number of completed pre-tests and completed post-tests that were returned to the Oral Health Educator: while 2,851 pre-tests were completed by students, only 2,259 completed post-tests were returned to the Oral Health Educator.

It should also be noted that bias due to self-reporting is always present – it is therefore possible that the results to health behavior questions, such as questions about soda consumption or last dental visit, are not entirely accurate.

Conclusions

The Adolescent Oral Health Campaign is an effective way to assess and to increase adolescents' knowledge of oral health topics. Offering this intervention on a yearly basis will allow OHP to track trends in changes in knowledge of oral health topics among Utah adolescents. These findings will be used to modify information presented in subsequent campaigns.

Table 2: Survey Question Responses (correct answer choice in bold)		
	Pre-Test	Post-Test
Survey Question	N (%)	N (%)
<i>Is it common for healthy gums to bleed when brushing/flossing?</i>		
No, bleeding gums is not normal	1493 (52.4%)	1916 (84.8%)
Yes, when you have a cold	50 (1.8%)	51 (0.9%)
Yes, sometimes	1118 (39.2%)	267 (11.8%)
Yes, all the time	190 (6.6%)	55 (2.4%)
<i>Can toothpaste clear up pimples?</i>		
Yes	1013 (36.1%)	143 (6.4%)
No	1790 (63.9%)	2092 (93.6%)
<i>Which of the following chronic diseases is most common among children/teens?</i>		
Asthma	225 (7.9%)	25 (1.1%)
Cavities	2036 (71.9%)	2169 (95.8%)
Hay fever	173 (6.1%)	35 (1.6%)
Obesity	397 (14.0%)	36 (1.6%)
<i>All of the following statements are true about cavities except for one. Mark the statement that is false.</i>		
Cavities can spread from person to person	2095 (73.8%)	336 (14.9%)
Cavities can get worse over time if not treated	137 (4.8%)	116 (5.1%)
Everyone gets cavities	471 (16.6%)	1627 (72.1%)
Cavities are preventable	137 (4.8%)	178 (7.9%)
<i>How often is it recommended that you brush your teeth?</i>		
Once a day	89 (3.1%)	53 (2.3%)
Twice a day	1924 (67.5%)	1959 (86.6%)
After every meal	800 (28.1%)	227 (10.0%)
Not sure/Don't know	38 (1.3%)	23 (1.0%)

Acknowledgements

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