Reducing Rates of Tooth Decay for Elementary School Students in Appalachia

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Mission Statement:
Our mission is to prevent and decrease tooth decay in elementary students in McDowell County, West Virginia. We will supply students with necessary dental screenings and resources to help students with limited access to these things. We will also work to educate the youth on the importance of proper dental hygiene so they can adopt new oral health habits and maintain them for the rest of their lives.

Goals & Objectives:

1. Recruit dental professionals from around West Virginia to volunteer their time for the program.
    a. Encourage dental offices to volunteer staff by using incentives.
    b. Get support from at least 4 different dental offices for staff.
    c. Get at least 4 dentists and 8 dental hygienists to volunteer.
2. Implement the program at Bradshaw Elementary School in McDowell County, West Virginia.
    a. Discuss the program goals with elementary school staff and gain their approval.
    b. Implement the plan by January 2026.
3. Improve the rates of tooth decay in elementary school kids in West Virginia.
    a. By the end of the program, 75% of the participants will have reports of brushing their teeth every morning and night
    b. By the end of the program, 75% of the participants will have reports of flossing their teeth once a day.
    c. By the end of the program, the amount of cavities in elementary school children will decrease by 30%.

Needs Assessment

<u>Health Issue</u>

Maintaining proper oral health is necessary to the overall health and well-being of a person because oral health issues can lead to other health issues in the body. Issues with oral health can lead to problems with speaking, eating, and socializing, as well as problems with infections. According to the Centers for Disease Control (CDC), by age nine, about half of the children in the United States have experienced a cavity in either their baby or permanent teeth. Also, the chances of a cavity being untreated is twice as likely in children from a lower income household (Centers for Disease Control, 2024). The United States has been following a trend of decreasing rates of tooth decay and missing teeth over the years; however, The Mississippi Delta and Appalachia regions of the US stand out for having significantly lower growth with this issue. Four out of the top five US states with the highest rate of people who are missing six or more teeth at age 65 are from these two regions. In fact, Appalachia is known for having the worst oral health in America in terms of tooth decay and tooth loss (Gorsuch et al., 2014). A study done by Polk et al. revealed that children in Appalachia have higher odds of having dental caries in both the primary and permanent teeth. Also, the study revealed that the children in Appalachia tend to have more severe cavities than children living in other regions of the US (Polk et al., 2015). Clearly, tooth decay is not only a large health issue in Appalachia, but specifically it impacts kids greatly.

Appalachia

Appalachia is a region of the US around the Appalachian Mountain range. Appalachia encompasses 423 counties across parts of thirteen states including: Alabama, Georgia, Kentucky, Maryland, Mississippi, New York, North Carolina, Ohio, Pennsylvania, South Carolina, Tennessee, Virginia, and West Virginia. According to the Appalachian Regional Commission (ARC), there are about 26.4 million residents in this region. This area tends to lag behind the rest of the US in many aspects including: per capita personal income, percent of population poverty, and percentage of people 25 and older with a bachelor's degree (Appalachian Regional Commission, n.d.-a). Appalachia also has higher rates of tooth decay and tooth loss than the rest of the country. The entirety of West Virginia is in Appalachia and the rate people missing six or more teeth is 65.6%, which exceeds the rates from the rest of the US. Also, West Virginia has the second highest rate of complete tooth loss for people ages 65 and older at 37.8% (Gorsuch et al., 2014).

Many studies suggest that socioeconomic status (SES) and lack of access to care are likely the main contributing factors to the disproportionate rates of oral health issues in Appalachia (Gorsuch et al., 2014; Zhou et al., 2020). A study by Zhou et al. found that when comparing urban parts of Appalachia to rural parts, the rural areas had significantly worse oral health than the former. The residents of rural West Virginia had fewer sound teeth, higher rates of edentulism, and more dental caries than the residents of urban Pennsylvania. Zhou et al. also recorded some of the barriers that could be preventing the people from seeking dental care. The rural population was less likely to have regular dental visits and were more likely to state high expenses as a barrier to not visiting the dentist (Zhou et al., 2020; Zou et al., 2023). Overall, the Appalachia region covers a vast amount of land, but the areas that are the most rural and low SES experience oral health issues even more (Krause et al., 2011; Zhou et al., 2020).

Since rurality and SES are major risk factors for poor oral health in Appalachia, this program aims to target a county in Appalachia that has a significantly higher percentage of people living in poverty compared to the rest of Appalachia and the US. From 2019-2023, McDowell County in West Virginia had about 30.9% of their population living in poverty while the percentage for all of Appalachia was 14.3% and the percentage for the US was 12.4%. McDowell County also reported having one of the lowest median household incomes in Appalachia at $29,980 per year, where the median household income for the US was $78,538 (Appalachian Regional

Commission, n.d.-b). Clearly, McDowell County struggles economically compared to other areas in Appalachia. Since SES and rurality are risk factors for poor oral health in the US (Zhou et al., 2020), and West Virginia is known for having the worst oral health outcomes in the US (Gorsuch et al., 2014), it is safe to assume that McDowell County also has significant oral health issues.

Target Population

This program is aimed to decrease rates of teeth decay for people living in McDowell County in West Virginia. Among this population, elementary aged children (five to eleven years old) specifically are in the target population. According to many studies, it is important to teach healthy hygiene to people while they are young, so they develop the habits of doing them every day (Jakobovich et al., 2023). Because of this, this program is for elementary aged children so they can learn proper oral hygiene from a young age. In McDowell County, the program will be introduced at Bradshaw Elementary school. This is the most populated elementary school in the county, so more students are going to benefit from the program compared to doing it at the other elementary schools (Public School Review, n.d.).

Previous Oral Health Promotion Programs

Since oral health is a big concern for this region, there have been many programs already implemented across Appalachia to attempt to decrease rates of tooth decay. In Kentucky, there was an oral health promotion program that was implemented that was called Health Colleges Advancing Team Skills (HCATS). The goal of this program was to bring together students from seven different health colleges (dentistry, nursing, pharmacy, social work, public health, physical therapy, and health communication) and professionals to provide necessary dental services and educate kids on oral hygiene. They implemented this program at rural schools in Eastern Kentucky by using mobile dental clinics. Overall, the students at these schools received preventative oral care like sealants, fluoride, and cleanings, which they had limited access to before because of their rural location and cost of services. They also were able to learn about oral hygiene and take-home materials so they could continue to take care of their teeth (Heath et al., 2019). The students in this area benefitted from this program, emphasizing the need to other oral health promotion programs in different parts of Appalachia. Although the oral health promotion programs that have been implemented in Appalachia have been beneficial, the Appalachian region is so large that many parts of Appalachia have not been reached by a program.

There have also been studies that show what influences oral health decision making within populations in Appalachia. One study by Nelson et al. uses the Andersen Behavioral Model of Healthcare Utilization to discover the predictors of dental care usage in north central Appalachian school children. The study showed that only 56% of the students (ages one to ten) had been to the dentist in the past year. Many of the reasonings for not going to the dentist were shown to be because of the child's dental fears, parental attitudes about oral health, and lack of dental coverage (Nelson et al., 2021). This is necessary to learn about because it shows what factors need to be included into a program for it to be helpful for the population. For example, since a child's fear of the dentist is a predictor for them not going to the dentist, the program can help children to work through their fears and learn that the dentist is not supposed to be a scary place. Another study by Islam et al. used the Multi-Theory Model of health behavior change to identify the psychological and environmental predictors flossing. This study revealed that behavioral confidence is the main predictor of initiation of flossing. This means that if a person believes they can floss daily, they are more likely to start flossing. The implications of this study are that public health promotion programs need to focus on boosting behavioral confidence through education and showing students how to do it (Islam et al., 2025). Overall, this study

shows what children need to begin to adapt new health oral hygiene habits, which will be necessary information for making an intervention to decrease tooth decay rates in Appalachia.

Logic Model

Inputs:	Activities:	Outputs:	Short-term Outcomes:	Mid-term Outcomes:	Long-term Outcomes:
People and partners: Bradshaw Elementary School principle staff, Dental hygienist and dental students from West Virginia University (WVU), Students in kindergarten-fifth grade, dentist volunteers Materials: fluoride varnish kids, sealant supplies, educational materials, tooth brushes, toothpaste, transportation for WVU students, PPE for dental professionals.	Services Offered: Cavity screenings, dental sealants, fluoride varnishes, supplies to take home. Education: Lessons about proper brushing and flossing techniques, tips on how to take care of your teeth after eating and drinks sweet things, lessons about importance of maintaining good oral health, connecting students with good dentists that are nearby if they do not already have one.	*Bradshaw Elementary School participating in the program. *students receive necessary screening. *Students receive fluoride varnishes and sealants. *Students are educated on proper oral health maintenance. *WVU Dental students volunteer to help provide the services. *Students get to take floss, toothbrush, and toothpaste home.	*The students have an increase in knowledge on how to take care of their teeth. *Students have a better oral health routine. *Students are better connected to dental professionals so they can have a designated dentist to go to.	*Students maintain a habit of brushing their teeth twice a day *Students brush their teeth every morning and at night before bed. *Decrease in intake of sweet foods and drinks. *Increase in number of students who have visited the dentist in the last year.	*Decrease in number of cavities in students at Bradshaw Elementary School. *Decrease in number of untreated cavities *Increase in number of students who report flossing and brushing everyday *Decrease in school absenteeism due to dental pain *Decrease in overall occurrence of tooth decay for elementary school students at the school.

Behavior Change Theory

This program utilizes the Health Belief Model (HBM) to facilitate behavior change. Created in the 1950s, the HBM is used to lay the framework for creating interventions that can change health behaviors by focusing on the population's beliefs of the health issue. This behavior change theory focuses on six constructs for why people have the health beliefs that they have. These constructs include perceived susceptibility, perceived severity, perceived benefits, perceived barriers, self-efficacy, and cues to action (Alyafei & Easton-Carr, 2024).

The first construct of the HBM is a person's perceived susceptibility of a health issue. This is determined by the population's probability of acquiring the health issues depending on their lived environments (Alyafei & Easton-Carr, 2024). If the person lives in an area where the rates of a certain disease are lower, they probably believe that they are less susceptible to getting the disease.

The second construct of the HBM is a person's perceived severity of the health issue. This refers to the population's beliefs on how serious the health problem is if they were to get it. Medical and social implications are important for examining perceived severity because it shows how population thinks the issue will effect their overall health and social capabilities (Alyafei & Easton-Carr, 2024). If a person does not believe the illness of condition is a serious condition, they are less likely to believe they need to make changes to prevent the health issue.

The third construct of the HBM is a person's perceived benefits of changing their behavior to prevent the health issue. This is determined by if the population believes that the pros of not developing the illness or condition outweigh the cons of having to change their current health behaviors. Also, this construct relies on the effectiveness or preventing the disease by changing the behavior (Alyafei & Easton-Carr, 2024). If a person does not believe changing their behavior will have a large outcome on preventing the health issue, they are less likely to change their behavior.

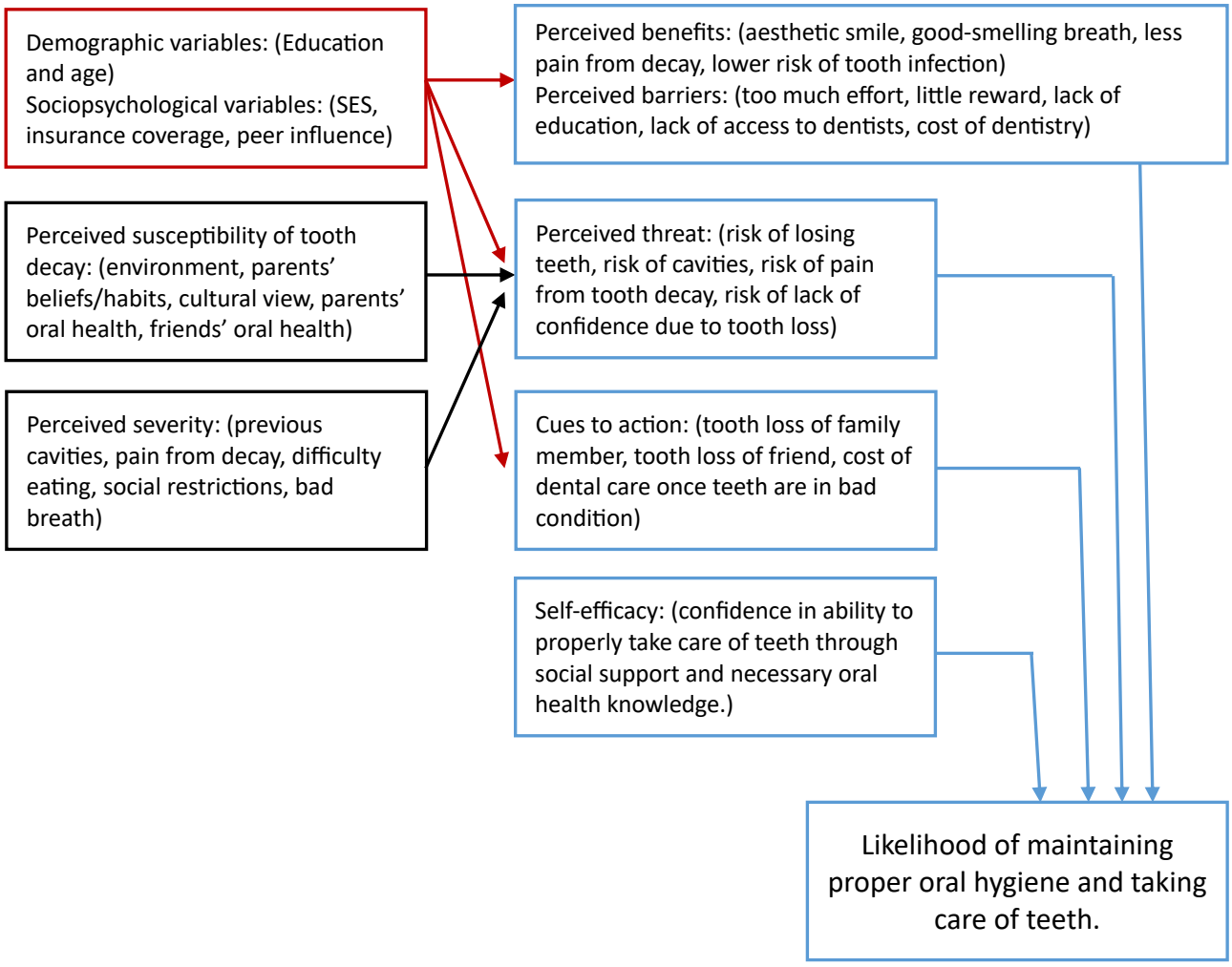
The fourth construct of the HBM is a person's perceived barriers to taking action to change a poor health behavior. These are obstacles that the person believes will be in the way for them to change their health behavior. Perceived barriers can range from availability of resources, transportation issues, cost of taking action, comfortability, etc. (Alyafei & Easton-Carr, 2024). If a person believes that there are too many deterrents to changing their health behavior, they are less likely to make a change.

The fifth construct of the HBM is a person's self-efficacy. This refers to a person's belief in themselves to perform an action or make a change in their current health behaviors (Alyafei & Easton-Carr, 2024). If a person believes that they have the capacity to maintain health routines and quit unhealthy habits, they are more likely to be able to change their behavior.

The sixth and final construct of the HBM is a person's cues to action. This construct relates to the stimuli that influence a person to make decisions. These are the habits a person has that make them participate in an action (Alyafei & Easton-Carr, 2024). For example, if someone is stressed, they smoke more cigarettes; the stress is a cue to smoke cigarettes because it can help relieve some stress.

Overall, the HBM operates to explain why people make the health decisions that they make. The six construct all display different things that create a person's health beliefs that lead to their health habits. By looking at each construct of the HBM and providing education and resources to get rid the barriers, a health behavior can be changed. This intervention utilizes the HBM to help facilitate behavior change so that elementary students at Bradshaw Elementary school can adopt better oral health habits, leading to reduction of tooth decay among students.

Health Belief Model in Practice



Description of Program

“Smile First” is a program that focuses on students at Bradshaw Elementary School in McDowell County, West Virginia in order to try and address the broad issue of poor oral health in Appalachia (Gorsuch et al., 2014). This program will be introduced to the students at the elementary school through the collaboration of school staff members, the program developer and leader, volunteer dentists, dental students from UWV, and dental hygiene students from UWV. Smile First works together with the dental college of UWV, so participation in this intervention is required from the dental and dental hygienist students of UWV. They will be transported via bus from UWV to Bradshaw Elementary School.

This group will come to the school twice a year for a week out of the month to visit the kids, since it is recommended by dental professionals to have cleanings done every six months (Premier Pediatric Dentistry, 2024). The kids will be able to learn about how to take care of their teeth through instructional videos and practice labs taught by the UWV students and volunteers. Here they will learn how to properly floss and brush their teeth, as well as take home their own toothbrush, toothpaste, and dental floss. Over the course of the week, the dental and dental hygienist students will be providing cleanings and screenings for cavities, as well as fluoride treatments and sealants to help prevent cavities. If and kids need treatment for a cavity, they will be referred to a dentist so they can get their cavities filled.

Smile First emphasizes the importance of taking care of your oral health by improving education around oral hygiene. If parents are do not teach kids how to prevent tooth decay, they may never learn. This program aims to enforce healthy habits around teeth brushing and flossing through increasing education on the subject and supplying students with the resources necessary to preform these tasks.

Curriculum Table

	Focus	Activities
Day 1	• Introduction of students with “Smile First” staff. • Build trust between staff and students. • Identify gaps in oral health knowledge.	• Greet class have everyone share their names. • Reassure students who have fears of the dentist. • Allow students to speak openly about their current oral health routines.
Day 2	• Inform students on importance of oral health to your overall health. • Inform students on what happens when you do not take care of your teeth. • Discuss how severe tooth decay pain can be.	• Show module about how poor oral health can lead to bigger issues. • Show picture of tooth decay. • Describe the pain from cavities and decay.
Day 3	• Discuss how cavities form. • Discuss how to prevent cavities. • Learn how to properly brush and floss teeth	• Show animation on how cavities form. • Practice brushing and flossing skills in class

Day 4	• Learn how diet and eating habits affect teeth. • Learn how sugar affects teeth	• Lesson on how to enjoy your favorite foods while still taking care of your teeth. • Lesson on sugar and how it breaks down teeth.
Day 5	• Encouraging students to continue to maintain and oral health routine. • Discuss what barriers there are for students to maintaining good oral health.	• Offer incentives to kids who do not have any cavities during the screening. • Offer solutions to the barriers.

Implementation Plan

This program will be implemented in person over a week twice a year. Every day of the week, students will have a lesson as outlined in the *Curriculum Table* above. In addition to the educational lesson provided in the curriculum, the students will each have a chance to meet with volunteer dentists, dental students, and dental hygienist students from UWV for cleanings, cavity screenings, fluoride varnish, and sealants as needed.

Bradshaw Elementary has a total of 256 students (Public School Review, n.d.), so about 52 students will have their dental visits a day. It will start with kindergarteners and gradually move up in grade level. There will be ten different groups of students mixed with some volunteer dentists, so each group will see about five kids per day. By the end of the week, all the students should have had a chance to meet with the dental professionals. To encourage the students to continue to take care of their teeth, they will get to take up an “oral hygiene tool kit” that will be equipped in a toothbrush, toothpaste, and dental floss. These students will then wait until the next visit through the Smile First program the next semester. This program will last two years, meaning there will be a total of four week-long sessions.

Budget Justification

PERSONNEL

Abigail McDonald, MPH Project Director – 2.4 calendar months (20% effort) in Years 1-2

Ms. McDonald is a highly skilled and certified health educator who has a master’s degree in public health. She has seven years of experience working specifically with elementary school kids in the Appalachian region to promote health. She has worked on several projects related to improving oral health, making her a highly qualified person to be educating the kids of Bradshaw Elementary school about the importance of taking care of your teeth.

Ms. McDonald will carry out the following duties for the proposed program.

- Year 1: Ms. McDonald will serve as the lead of the program. She will be present for any meetings regarding the program and will lead and plan the meetings. She will also oversee planning the program elements, such as lesson plans and demonstrations for the children. This will require a lot of research on oral hygiene, as well as the best methods for teaching a child new habits. Lastly, the is the person responsible of making

sure the program is running smoothly and if any of the dental students or school staff have an issue, they will report to her.

- Year 2: Ms. McDonald will continue to lead her team of dental students and staff to ensure the program is being implemented well. She will also maintain check in meetings with the program coordinator and data analyst to determine the effectiveness of the program. Ms. McDonald will also be responsible for keeping the lessons up to date on any new dental studies to ensure that the students are learning accurate information.

Chance Chung, MPH Project coordinator – 2.4 calendar months (20% effort) in Years 1-2

Mr. Chung is a highly trained and certified public health professional who has his master's degree in public health. He has 5 years of experience in public health communication and is great at coordinating events related to public health. Mr. Chung also has experience working in a school and is very knowledgeable about communicating with parents, teachers, and administration. All of Mr. Chung's experience has prepared him to be the project coordinator for the "Smile First" program.

Mr. Chung will carry out the following duties for the proposed program.

- Year 1: Mr. Chung will oversee all the communication and coordinating for this program. He will communicate with the University of West Virginia dental students/professors, Bradshaw Elementary teachers/administration, as well as parents of the elementary students. He oversees coordinating the timing and specifics of the program to every party involved.
- Year 2: Mr. Chung will continue to coordinate between the UWV dental school, Bradshaw elementary, staff from Smile First program, and the parents of the elementary children. He will ensure the weeks that the campaign will take place as well as making sure everyone knows exactly what to expect. His main responsibility is to make sure everyone is aware of the program and has agreed to it happening.

Greta Imhof, BSDA Data analyst – 1.2 calendar months (10% effort) in Years 1-2

Ms. Imhof is well qualified for this position and has her Bachelor of Science in data analytics degree. She has worked on projects in the past where she monitored data to see how if changed over the years. She also has two years of experience working as the lead data analyst on a project. This skill is important for the data analyst position to track the effectiveness of the program.

Ms. Imhof will carry out the following duties for the proposed program.

- Year 1: Ms. Imhof will be responsible for collecting the data from nearby dentists about prevalence of cavities in elementary school students in the area. She will also look specifically at how many cavities the kids at Bradshaw Elementary have had in the past, as well as how many students regularly visit the dentist. She will also collect data on oral hygiene habits like whether the child brushes their teeth twice a day. Within the first year, Ms. Imhof will monitor if these numbers to see if there is significant change by using statistics.

- Year 2: Ms. Imhof will continue to be responsible for collecting information about the population. She will use this information to compare the prevalence of tooth decay in Bradshaw Elementary students from before the program was implemented to the end of the program. She will determine if the program made a significant difference in the number of students who suffer from tooth decay. She will also be responsible in tracking if there was a significant change in oral hygiene habits throughout the course of the program. Ultimately, Ms. Imhof oversees tracking the progress of the program and checking if it is making an impact or not on the community.

TRAVEL

In-State Travel Between UWV and Bradshaw Elementary School ($17,500 each year, Years 1-2)

- In years 1 and 2, we are requesting funds to pay for gas mileage, bus rental costs, and bus driver costs. This bus is responsible for transporting the dental students from UWV to the elementary school and back, as well as to and from their hotel. The trip from UWV to the elementary school will take about 5 hours, while costs about $2,500. In one year the bus will drive them to Bradshaw Elementary and back twice, meaning it will cost $10,000 in total to travel between the cities. The remaining $7,500 that year is reserved for the fees of traveling to and from the elementary school and the hotel that the dental students are staying at.

EQUIPMENT & SUPPLIES

Laptops ($4,000, Year 1)

- We request funds to purchase three laptops ($1,333 per computer) in year 1. These computers are necessary for the personnel involved in the project to communicate amongst each other, the school leaders, and UWV dental school leaders. These computers will be used for this project 100%. These computers will also be needed to research content for the lessons and to create the lesson plans.

Lesson Making Supplies ($1000, Year 1)

- We request funds for any excess supplies that are needed to create lessons for the students. This will include subscriptions for a graphic design website to make the content appear more intriguing for the kids, paper and ink for print outs, and any costs related to retrieving research that is needed to create the curriculum.

Toothbrushes ($800, Years 1-2)

- We request funds to supply the students with toothbrushes that they can take home. Each student will receive two toothbrushes per session, and there are two separate sessions. So, each student will get four toothbrushes per year. This budget allows for the toothbrushes to cost about 78 cents apiece, which is about how much it would cost if the toothbrushes were ordered in bulk for the 256 students at Bradshaw Elementary.

Toothpastes ($800, Years 1-2)

- We request funds to supply each of the students with toothpaste to take home. Each student will take home two tubes of toothpaste per session, which means four toothpastes per year per student. This budget allows for the toothpaste to cost up to 78 cents per tube. When bought in bulk, the funds will be enough to buy every student 4 tubes of toothpaste per year.

Dental Floss ($300, Years 1-2)

- We request funds to supply each of the students with dental floss to take home. Each student will receive one roll of dental floss per session. Since there are two sessions per year, the program will give each student two rolls of dental floss a year. This budget allows for each roll of dental floss to cost up to 58 cents. When bought in bulk, the funds will be enough to supply each student with the necessary amount of dental floss.

OTHER EXPENSES

Hotel Stay ($12,000, Years 1-2)

- We request funds to ensure hotel stay and accommodations for the dental school students that are required to help with the program. This is where each of the dental students and program staff will be staying for a school week. The hotel room for a week that fits four people is about $400. There needs to be a place to stay for 54 people. Since there are two sessions per year, we need to budget for $12,000. This budget also allows for some extra money in case hotel prices vary.

Evaluation Plan

This program aims to lower prevalence of tooth decay for Bradshaw Elementary school children from McDowell County, West Virginia. This program utilizes a comprehensive five-day curriculum that the children take twice a year that uses the Health Belief Model to promote behavior change amongst the children. It is important that this program and its curriculum are evaluated via this evaluation plan to determine its efficacy. This evaluation plan outlines how the "Smile First" program will be assessed through formative, process, and summative evaluations. These evaluations align with the logic model and the overarching goal of the program: to reduce prevalence of tooth decay in Bradshaw Elementary school students, to improve oral hygiene routines and maintenance, and to connect the students with dentists to take care of their dental health needs.

Formative Evaluation

The formative evaluation will focus on gathering insight from parents and students on the current oral health status of the children. This will include questions regarding the perceived barriers that are believed to be in place that prevent the children from going to the dentist or properly taking care of their teeth. This will also include the perceived severity of tooth decay and will determine if the participants believe oral health is necessary to take care of. Overall, the formative evaluation will be used to discover the preconceived attitudes, beliefs, and knowledge of oral health importance that the population has prior to the program.

Methods:

- Conduct questionnaires that are designed to display a person's knowledge on how to properly maintain oral hygiene and understanding of how tooth decay happens.
- Send out a survey for parents of the children to fill out regarding the perceived barriers for going to the dentist or taking care of teeth.
- Gathering information on past instances of tooth decay within population.

- Gathering information about frequency of dentist visits and information on how far away the closest dental professionals are.
- Collect baseline information about the population.

Process Evaluation

The process evaluation will focus on monitoring the implementation of the program to ensure that all parts of the curriculum are given to the students. It will also assess how well the students respond to the program initially by tracking their engagement and interest with the content. This method of evaluation is important for determining the reach and reactions to the program.

Methods:

- Review of student attendance throughout the week of the program implementation.
- Review of budget reports to ensure that the program is remaining in the $200,000 budget.
- Implementing daily assignments or quizzes to test the student's retention of the content being taught in the lessons.
- Review of how students react to the content (are the bored or are they excited to learn?)

Summative Evaluation

The summative evaluation includes both impact and outcome factors which focus on the effectiveness of the program after it has been implemented. The impact evaluation will assess the immediate or short-term goals of the program. The short-term goals that relate to the logic model are student's knowledge of oral health has improvement, students develop better oral health care routines, and students are better connected to dental professionals that they can see for regular cleanings. The outcome evaluation will monitor the long-term goals that are associated with the program. The long-term goals that relate to the logic model are to decrease the prevalence of tooth decay for Bradshaw Elementary students, decrease the number of untreated cavities, and to decrease school absenteeism due to dental pain.

Methods:

- Analyze rates of tooth decay from McDowell County, West Virginia.
- Analyze how perceived severity of tooth decay has changed within population.
- Conduct post program surveys to obtain data about oral health routines after they have taken the lessons.
- Compare how the students have changed their oral health routines over the course of the program.
- Track improvements in student's self-efficacy for taking care of their teeth.
- Analyze how people feel about taking better care of their teeth.

TABLE 1: Evaluation Data Collection Overview		
Indicators/Variables	**Source**	**Collection Overview**

		Staff	Time Period	Methods
Process Evaluation				
Participant Attendance	Attendance Sheet	Project Coordinator and Health educator	October 2025 - March 2027	Staff personally roll call, coordinator tracking participation
Number of pre-test surveys	Paper surveys	Project Coordinator and Data Analyst	October 2025	Numbers and answers provided through the survey
Number of post-test surveys	Paper surveys	Project Coordinator and Data Analyst	March 2027	Numbers and answers provided through survey
Process surveys completed to ensure participant satisfaction	Paper surveys	Project Coordinator	October 2025 – March 2027	Qualitative data analyzed by data analyst
Time spent on duties by program staff	Staff timesheets and staff meetings	All staff	October 2025 – March 2027	Use of staff timesheets
Outcome Evaluation				
Knowledge of oral health and how tooth decay happens	Pre- and post-program survey	Project Coordinator and Data Analyst	October 2025 – March 2027	Paper survey
Decrease in prevalence of cavities in Bradshaw Elementary school students	Cavity occurrence self-reports and data from dental statistics	Data Analyst	October 2025 and March 2027	In-person interviews and online data bases.
Improvement in number of students who have a dentist to go to	Pre- and post-program survey	Project Coordinator and Data Analyst	October 2025 and March 2027	Paper survey
Reduction school absenteeism due to tooth pain	Pre- and post-program survey	Project Coordinator and Data Analyst	October 2025 and March 2027	Paper survey

Marketing Plan

Inclusion and Exclusion criteria

The “Smile First” program will be catered to elementary school students at Bradshaw Elementary School. Because this program will only be implemented at this school, the kids who do not attend Bradshaw Elementary will be excluded from the marketing plan. Also, the program

mainly focuses on students, so all the marketing will be primarily marketed towards elementary students and will exclude staff members. Ultimately, this program will be directed only at elementary aged kids at Bradshaw Elementary school.

Population Reach

To reach the students at Bradshaw Elementary school, it is important to speak will the school's staff members. Ultimately, they are the ones who will allow this program to take place at the school, so it is important to reach out to them first. We will let them know about the mission and the goals of the program via email, phone calls, and/or meetings. Once they agree to the program taking place, we will mail them several posters to display around the school. These posters will be designed to get the kids excited about the incoming lessons. They will feature different characters that the kids know from television shows performing different steps relating to oral hygiene. The use of these characters will spark their interest. From there, the poster will also give information about when the event is happening. All of this will be written out in very simple language with limited words to aid in comprehension of the posters. There will also be a printout sent to the school to send home with all the students to inform their parents about the program and a permission slip for the students to participate in the program. Overall, the primary communication will happen at the staff level, and they will then help to spread the message across the school until the event happens.

Population Retention

To retain the population, the content from the lessons must be engaging to all grade levels within the elementary school. This will be done by making different versions of the lessons. For example, the lesson for kindergarten students will be very colorful, contain different characters that someone from that age group would love, and have limited words since most kindergarteners cannot read. Whereas with the fifth graders, there can be more content that they can read, and the characters used in the units would align with what that age group likes. Another thing that can contribute to population retention is the engagement level of the lessons. Kids generally do not like to sit and listen to lessons all day, so it is important to make the lessons fun and a hands-on experience. This way having good oral hygiene is associated with a fun memory rather than a boring one, making them more likely to maintain the routines. Overall, if these lessons are catered towards the separate grade levels and contain fun activities, the kids will enjoy the program and want to join again the next time we come.

References

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