Parental Opinions of Anti-Tobacco Messages within a Pediatric Dental Clinic

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Abstract

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Purpose: To investigate parents' opinions about anti-tobacco messages given in a pediatric dental clinic.

Methods: A survey was developed and administered to parents and caregivers at the University of Washington pediatric dental clinic soliciting their opinions about dentists, medical doctors, and parents giving anti-tobacco messages, and at what age these messages were appropriate. Descriptive analysis was completed for all variables. Fisher's exact and Chi-square tests were utilized to test for association between parental opinions of anti-tobacco messages given by a dentist and both parental tobacco use status and the age of the oldest child in the household.

Results: A total of 286 surveys were utilized in data analysis. Of those surveyed, the majority were female (75.1%), white (63.5%), parents (91.3%), and had an average age of 42.1 years. Almost half had a college degree or higher (48.9%). Only 18.1% reported using tobacco products in the past 30 days. Two-thirds (65.0%) of the accompanied children were covered by public dental insurance.

The majority indicated that it was appropriate for parents (96.5%), medical doctors (90.9%), and dentists (90.9%) to give children and adolescents anti-tobacco messages. When asked when a child should first receive anti-tobacco messages from a dentist, the majority indicated that 8-12 years was the most appropriate age (56.4%). Opinions of anti-tobacco messages given to

children by the child's dentist did not differ based on parental tobacco use status, although parents who reported current tobacco use status were significantly more likely to indicate being upset if their child's dentist asked them about their own tobacco use ($p = 0.032$). Parents of older children are more likely to feel it is appropriate for a dentist to talk to their child about tobacco use, while parents of younger children are more likely to be unsure of the appropriateness of this practice ($p= 0.004$).

Conclusions: Most parents indicated that dentists are an appropriate source of anti-tobacco messages and believed that ages 8-12 was the youngest age at which a dentist should be giving anti-tobacco messages. This study provides important reassurance that medical doctors and dentists share equal acceptability as sources of preventive messages in regard to tobacco use. The results of this study should encourage dentists to feel more confident in approaching this topic with patients and their families.

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DEDICATION

To my parents, whose unconditional support and love, as well as their emphasis on the importance of education from an early age, have molded me into the person I am today.

&

To Nima, my best friend, for your inspiration, support and patience through this journey.

Thank you for always being the rock that I need and for helping me realize my potential.

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INTRODUCTION:

Tobacco: A Public Health Concern in the United States

Tobacco use is the number one cause of preventable death in the United States. Approximately 1 in every 5 deaths is tobacco related[1]. Smoking leads to increased risk for different types of cancer, cardiovascular disease, lung disease, diabetes, and pregnancy complications[1]. It affects acute and chronic oral health by increasing the risk of oral cancer, periodontal disease, stained teeth and bad breath[2,3].

Following the Tobacco Master Settlement Agreement of 1998 there were many years of steady decline in youth smoking tobacco use. Recently, the decline in youth smoking rates has slowed and youth smokeless tobacco use has plateaued[1]. Youth and young adults in the United States continue to begin regular tobacco use at a young age. One-fifth of middle school students (grades 6-8) have smoked a cigarette at least once. One-quarter of high school seniors and one-third of young adults under the age of 26 smoke regularly. It is estimated that every day in the U.S., 4,000 adolescents (aged 12-17 years old) will try their first cigarette, and 1,200 will become daily smokers[4]. Of these children, one-in-three is predicted to die an early death due to smoking[5].

More than 80% of adult smokers began before the age of 18 years old and 99% started before the age of 26 years old[1]. If a person has not started using tobacco by the age of 26 year of age it is unlikely that they will ever become smokers[1].

The increased use of non-cigarette sources of nicotine in adolescents is also very concerning. The use of smokeless tobacco products by adolescent populations, including conventional chewing tobacco and novel dissolvable tobacco products, has increased. Findings from the 2011 National Youth Tobacco Survey found that 5.6% of U.S. middle and high school students

use some form of smokeless tobacco[6]. There has also been evidence of a significant increase in e-cigarettes use by adolescents in recent years. Findings from the same National Youth Tobacco Survey show that between 2011 and 2012 e-cigarette experimentation doubled among U.S. children in middle school and high school[7]. In high school aged children, e-cigarette use rose from 4.7% in 2011 to 10% in 2012[7]. The increased use of both smokeless tobacco and e-cigarettes by children is a significant concern due to the fact that users of these non-cigarette forms of tobacco are more likely to report conventional cigarette use as well[1, 7, 8]. Of current smokeless tobacco users, 72% report also using a combustible form of tobacco product and of current e-cigarette users, 80.5% report conventional cigarette use[6,7].

Youth and Adolescents as a Vulnerable Population:

The earlier a person begins using tobacco, the more profound the negative impacts of tobacco use can be. People who begin smoking at an early age are more likely to develop more severe levels of nicotine addiction than people who start later in life, are more likely to have alcohol abuse problems, and are more likely to experiment with illicit drugs[1]. Adolescents who use tobacco are more likely to have significant health problems that include chronic cough, an increased incidence and severity of respiratory illnesses, decreased physical fitness, an unfavorable lipid profile, and an inhibition in the rate of lung growth and the level of maximum lung function[1].

Biologically, adolescence is a critical time period for brain development and the use of nicotine can hinder its proper development[9]. By adolescence, the areas of the brain responsible for emotional drive are already well developed, but the areas of the brain involved in cognitive self-control and adult decision making strategies are still developing[9]. This imbalance in emotion and cognitive brain maturity can lead to increased risk-taking behavior and thus increased drive

to use tobacco products. Nicotine exposure at this stage of brain development has been associated with long lasting impairments on the individual's cognitive ability and mental health[9].

The 2012 U.S. Surgeon General's Report:

Health care providers have been identified within the U.S. Surgeon General's 2012 report on "Preventing Tobacco Use among Youth and Young Adults" as primary sources of health information and as suitable agents to address the prevention of tobacco use among youth. This report emphasizes that although there is insufficient empirical evidence to recommend regular screening for tobacco use or interventions for tobacco use among young people, clinical interventions can still assist in limiting tobacco use initiation. The clinical environment can potentially be an effective source of support and anti-tobacco messages to help with the prevention of tobacco use among children and adolescents. Of note, the American Medical Association (AMA), the US Department of Health and Human Services (DHHS), the U.S. Preventive Services Task Force (USPSTF), and the World Health Organization (WHO) have all issued guidelines for the provision of preventive services by healthcare providers and have recognized the influential role these services can have in preventing tobacco use among adolescents[1, 10, 11].

United States Preventive Service Task Force (USPSTF):

The USPSTF is an agency that makes recommendations about the effectiveness of specific preventive care services in clinical practice using the evidence present in scientific literature. In August 2013, the USPSTF updated its recommendation on tobacco counseling by primary care providers. The prior recommendation set forth in 2003 indicated that there was not an adequate amount of information to justify a recommendation for primary care tobacco interventions with adolescents. In the past decade there has been enough supportive evidence released, that the

USPSTF has upgraded its recommendation to a "B" grade recommendation. It currently recommends that primary care clinicians provide interventions, including education or brief counseling, to prevent initiation of tobacco use in school-aged children and adolescents[12, 13].

American Academy of Pediatric Dentistry (AAPD) Tobacco Guidelines:

The American Academy of Pediatric Dentistry has had guidelines in place since 2000 that recommend pediatric dental providers determine and document tobacco use by patients and smoking status of their parents, guardians, and caregivers. These guidelines also recommend that providers should educate patients, parents, and guardians on the serious health consequences of tobacco use and exposure to environmental tobacco smoke in the home[14].

Anti-Tobacco Messages Provided in Dental Offices:

The provision of tobacco preventive messages to youth and adolescents within health care settings is low, especially in dental offices. Analysis of the 2000 National Youth Tobacco Survey by Shelley et al. found that 33% of 6th-12th grade students surveyed reported that a physician counseled them in the past year about tobacco use while only 20% of them reported their dentist counseling them on tobacco use[15]. Among students who reported smoking in the past year, 16.4% received advice to quit from a physician and only 11.6% received advice to quit from a dentist[15]. Finally, this study concluded that physician or dentist advice to quit was correlated with 1 or more quit attempts in the past 12 months by these surveyed youth.

Dentists are uniquely suited to provide anti-tobacco messages. Tobacco-use causes direct oral health consequences not only in the long-term (i.e. oral cancer and periodontal disease), but also with more obvious short-term effects (i.e. yellowing teeth, bad breath, stained teeth)[2]. Compared to other healthcare providers, dentists have been found to more accurately identify tobacco using patients[2]. Also, because dentists recommend 6 month oral examinations, there is

a potential for more frequent interactions with youth and adolescents than pediatricians or primary care physicians may have. Furthermore, smoking-cessation interventions by more than one type of health professional (including dentists) has been shown to have the potential to substantially increase the cessation rate and promote the readiness to quit in the general population[16].

Multiple studies reveal that the majority of the dental care team, including dentists, dental specialists, dental hygienists, and dental students, recognize that it is their responsibility to advise patients about tobacco use[17, 18]. Despite this, the American Dental Association's 1997 survey of "Tobacco Use Cessation Efforts among Dentists" reported that nearly half of dentists do not routinely ask about tobacco use and 60% do not routinely advise tobacco users to quit[19]. Numerous barriers have been reported by pediatric dentists and include lack of tobacco prevention/cessation training, uncertainty of where to refer their patients for help, a feeling of being ineffective in counseling their patients, lack of time and confidence, lack of reimbursement, and resistance from patients or parents[18, 20-23].

At the initiation of this research project there had not yet been any published evaluation of parental opinions of dentists discussing tobacco use with young patients or their parents despite it being a commonly cited barrier. Evaluating parental perceptions about the appropriateness of a dentist discussing tobacco exposure, initiation, and use with their children is a critical step in the advancement of in-office tobacco use messages at a dental office. Whether parents oppose it, or embrace it, there is much to be learned about this topic. Any measures that can decrease the barriers dentists face when confronted with the task of assessing their young patient's global tobacco exposure would be of value.

SPECIFIC AIMS/RESEARCH QUESTION

Anti-tobacco messages have been found to be more effective when given by multiple health care providers. Despite this, numerous barriers to providing effective anti-tobacco messages within a dental clinic have been reported. One of the perceived barriers reported is the fear of resistance from patients or parents, and this study aimed to investigate parental opinions of anti-tobacco messages within a university based pediatric dental office.

The primary aims of this study are:

1) To determine how parents perceive anti-tobacco messages given to their children by a pediatric dentist.

2) To investigate how parents perceive anti-tobacco messages given to them by their child's pediatric dentist.

3) To evaluate if parents feel differently about anti-tobacco messages given by a pediatric dentist depending on their own smoking status.

4) To evaluate if parents feel differently about anti-tobacco messages depending on the age of their child or children.

METHODS

This study was a cross sectional, pen and paper survey of parents accompanying their child to a pediatric dental appointment at a university pediatric dental clinic. The 32 question survey asked parents about their opinions of anti-tobacco messages as well as demographic and tobacco-use questions (See Appendix C).

The research protocol was reviewed by the Institutional Review Board at the University of Washington Human Subjects Division and determined to be of exempt status (HSD study #46263). Participation in the study was voluntary and the confidentiality of the participant's responses was assured.

Study Setting:

The setting for this investigation was at The Center for Pediatric Dentistry (CPD). The CPD is an educational pediatric dental clinic, located in Seattle, Washington, that is a partnership between the University of Washington (UW) and Seattle Children's Hospital. It is a training site for UW pediatric dental residents and a rotation site for the UW pre-doctoral dental students. It is also a practice site for UW pediatric dental, oral surgery, and endodontic faculty. Comprehensive dental care, including dental preventive and restorative care, is provided to children 18 years and younger.

Study Subjects:

The population of interest for this study were the adults accompanying a child or children to a dental appointment at the CPD. Eligible participants had to be a parent or caregiver that was 18 years or older, that was responsible for the health of a child/or children between 8-18 years old. The participants also had to be able to understand, read, and write in English as the survey was only available in English. Only one survey per household was administered.

Survey Development:

The survey was designed by the primary investigator along with input from her co-investigators. Guidance from expert advisors was helpful in assuring that the survey gathered the appropriate information to answer the questions of interest.

Participant privacy was preserved by not asking any identifying questions. The surveys were given a numerical ID number that was not linked to the patient or participant.

Except for the initial introduction of the study and survey by the primary investigator, study participants were required to navigate the survey instrument without guidance from the investigator. Therefore care to assure the survey was developed within standard language limitations was taken.

An initial piloting of the survey was conducted to assure the survey's usability and understandability as a self-administered survey.

Data Collection:

A convenience sample of adults accompanying children to a dental appointment were approached by the primary investigator between November 1, 2013 and January 31, 2014. Study eligibility was assessed using a check-list that was reviewed with each potential participant (See Appendix A). Upon completion of the eligibility form, all those adults who qualified were asked if they were interested in completing the survey.

Demographic information collected included participants' age, ethnicity/race, age, education level, and relationship to the child. The number of children living in the household, ages of all children living in the household, child's insurance coverage, and household member working in the healthcare field was also collected. Parental and household tobacco use questions were also asked. Independent variables of interest included an "age of oldest child in the household"

and parental smoking status. The “age of oldest child in the household” variable was created as a categorical variable from the reported ages in years of all children 18 years or younger living in the participant’s household. Dependent variables of interest included parental opinion about anti-tobacco messages given by their child’s dentist to both their children and to themselves.

Some variables were re-categorized due to small number of responses in some categories. Re-categorized variables include frequency of tobacco use, participant relationship to child, race, and insurance type. Frequency of tobacco use was collapsed into “Daily” and “Less than Daily” from an original three categories, “Daily”, “Weekly, but not every day” and “Less than weekly”. Participant relationship was recorded using 7 different categorical choices including an “other” response that could be written in by the participant. Using this data, it was possible to collapse the categories into a “Male” and “Female” gender variable. Race was collapsed into “White”, “Black”, “Asian/Pacific Islander” and “Multiple/Other” categories. Finally, only 7 people reported “self-pay” and therefore these were grouped together with “Other”.

For those who agreed to participate in the survey, a study “Information Sheet” was administered (See Appendix B) along with the survey (See Appendix C). Although the initial plan was to provide an informational handout to all participants, this could have biased participant’s answers and was not utilized. Participants were instructed to complete the survey in the remaining appointment time and return the survey to the investigator or a member of the dental staff, upon its completion.

All collected surveys were retained in the care of the primary investigator in a secure file cabinet.

Data Analysis:

Data entry was completed using REDCap™ (Vanderbuilt University, Tennessee, USA), an electronic data capture tool hosted at the University of Washington[24]. Data analysis was completed using Stata/IC 12.1 (StataCorp, College Station, Texas, USA) statistical software package.

Descriptive statistics, including percentages, means, and standard deviations, were used to describe the participants' demographic information. Percentages were used to describe how parents perceive anti-tobacco messages given by a pediatric dentist to themselves and to their children. Fisher's exact tests and Chi-squared tests of association were utilized to examine the relationship between parental perceptions of anti-tobacco messages given by a pediatric dentist and their own tobacco use status, and on the age of their children.

RESULTS

Survey Response:

A total of 468 caregivers were approached during the study period (See Figure 1). Of those approached, 323 participants were eligible and 287 surveys were administered with a calculated response rate of 88.9%. One of the 287 surveys was incomplete and discarded, leaving a total of 286 surveys for data analysis. The others who were not eligible (N=145) were not eligible for a number of different reasons including having a language barrier, not having children between 8-18 years old, and having already taken the survey.

Demographics and Tobacco Use Characteristics:

Of those surveyed, the majority were parents (91.3%) while others caregivers included grandparents (3.5%), aunts (1.4%) or mom's significant other (1.0%) (Table 1). Henceforth, all participants will be referred to as "parents". The majority of the parents were non-Hispanic (85.4%), white (63.5%) females (75.1%) with a mean age of 42.1 years. Almost half (48.9%) reported having at least a college degree, and 78.0% had at least some college education. Almost 19% reported that someone in their household works in a health profession.

The mean number of children per household was 2.3 children with over 49.1% of parents reporting that the oldest child in the household was between 13-17 years old. The majority of children (65.0%) were covered by Medicaid, while only 23.8% had private insurance.

When evaluating parental tobacco use, 26.2% of parents reported that someone in the household used tobacco products, but only 18.1% of the surveyed parents reported current tobacco use (defined as "used tobacco product within the past 30 days") (Table 2). Of those that reported tobacco use in the past 30 days, 72.7% reported that they used tobacco on a daily basis and the majority (82.2%) indicated that cigarettes were their tobacco product of choice.

While the majority of parents did not believe that a child of theirs had used tobacco, 15.0% believed that a child of theirs had experimented with tobacco products, and 8.1% believed a child was currently using tobacco products. When stratified based on the age of the oldest child in the household, there was a statistically significant difference found when parents were asked if they believe a child may have experimented with tobacco ($p<0.001$) (Table 3). Of parents with an oldest child between 13-17 years old, 23.8% believed that a child had experimented with tobacco, and 17.6% of parents with an oldest child 18 years or older believed the same. When parents were asked if they think a child currently uses tobacco, most parents did not believe that one of their children currently used tobacco (90.9% with oldest child between 8-12 years; 85.0% with oldest child between 13-17 years, and 100.0% with oldest child 18 years or older) . Of all participants, parents with an oldest child between 13-17 years of age were more likely to report that they believe a child has used or is currently using tobacco compared to parents with an oldest child in a different age category.

Parental Perceptions of Pediatric Tobacco Use and Sources of Anti-Tobacco Messages:

Parents were asked about their opinions of pediatric tobacco use and sources of anti-tobacco messages. The majority of parents (76.4%) believe that most people begin using tobacco between 13-17 years old (Table 4). Most parents (46.8%) believe that the first general anti-tobacco message should be given when children are 7 years old or less, or between 8-12 years old (41.9%). Fewer parents (24.5%) reported that the first anti-tobacco message given by a *dentist* should be given when children are 7 years old or less. Most (56.4%) believe that it should be within the older age range of 8-12 years old.

The most commonly reported acceptable anti-tobacco source was “parents” (96.5%). An equal number of people stated that both “medical doctors” and “dentists” are an appropriate source of anti-tobacco messages (90.9% each). “Teachers” had a parental acceptance rate of 81.8%.

Some of the “other” acceptable sources specified by respondents were other family members, clergy, coaches, and celebrities.

When asked about dentists speaking to children about tobacco use, the majority of parents surveyed reported that their child had not received an anti-tobacco message from their dentist (71.3%). Most (65.8%) felt it was appropriate for a dentist to talk to their child about tobacco use. While only 24.1% of parents provided a response to the question regarding whether they wished a dentist would talk to their child about tobacco use, of those who did answer, 76.8% answered “yes” that they wished their child’s dentist would talk to their child about tobacco use.

Parental Perceptions of Dentists Discussing Parental Tobacco Use:

While half (50.7%) of parents reported that a dentist had asked them about their own tobacco use, only 5.3% of parents reported that their own tobacco use status had been discussed with them by their child’s dentist (Table 5). Many (66.7%) parents felt it was appropriate for their child’s dentist to ask about parent’s personal tobacco use, yet almost 71% of participants did not answer this particular question. When asked if they would be upset if their child’s dentist asked them about their own tobacco use, only 9.6% reported that they would be upset.

Tobacco Use and Anti-Tobacco Messages Based on Own Tobacco Use Status:

For all questions associated with parental opinions about anti-tobacco messages given to children by the child’s dentist, there was no statistical difference associated with the parent’s reported current tobacco use (Table 6). In particular, parental smoking status was not associated with a belief that their own child had experimented with, or currently uses, tobacco products. However, parents who reported a current tobacco use status were significantly more likely to indicate being upset if their child’s dentist asked them about their own tobacco use ($p = 0.032$).

Parental Perception of Tobacco Use Messages Based on Age of Oldest Child:

The age of the oldest child was significantly associated with parent report of a dentist asking their child about tobacco use (p=0.003) (Table 7). Parents of older children were more likely to report that a dentist had asked their child about tobacco use. The age of the oldest child was also significantly associated with parents reporting that they feel it is appropriate for a dentist to talk to their child about tobacco use (p=0.004). Parents of older children are more likely to feel it is appropriate for a dentist to talk to their child about tobacco use with 85% of parents whose oldest child was between 13-17 years old, and 100% of parents whose oldest child was 18 years or older reporting that it was appropriate. Only half (47.4%) of parents whose oldest child was between 8-12 years of age reported that it was appropriate for a dentist to talk to their child about tobacco use, with a larger portion of these parents (36.8%) reported being unsure about the appropriateness compared to parents of older children. No other variables were associated with the age of the oldest child in the household.

DISCUSSION:

The concern of patient and parental resistance to anti-tobacco messages has been reported as a barrier in general dentistry, pediatric dentistry, and pediatric medicine[25-27]. The majority of participants of this study indicated that it was appropriate for parents, medical doctors, and dentists to give children and adolescents anti-tobacco messages. In this study, it was found that the majority of parents wish their child's dentist would discuss tobacco use with their child (76.8%), most feel it is appropriate for a dentist to ask their child about tobacco use (65.8%) and 90.9% think dentists are an appropriate source of anti-tobacco messages for children and adolescents. These findings are consistent with other findings in the literature. For instance, Moss et. al. found that 89% of parents believe that tobacco counseling with parents is an important part of a pediatrician's job[25]. Also, in a survey of adult patients presenting to a university dental clinic, the majority of tobacco users were positive in their attitudes towards delivery of tobacco cessation counseling and services in the dental clinic [26]. Finally, a recent survey of parents accompanying children to 1 of 5 different private practice pediatric dental offices around Chicago, IL found that 90% of parents were accepting of dentists giving their children tobacco-use education and cessation education[27].

Tobacco Use

In this study, current tobacco use by the participating parent was 18.1%. According the Center for Disease Control and Prevention in 2012 an estimated 18.1% US adults are current smokers which is in exact agreement with the current tobacco use reported by participants in the current study[28]. Of those who report daily use of tobacco, this national survey closely reflects the findings in the current study in terms of percent of daily users (78.4% vs. 72.7%) and in terms of percent of less than daily users (21.6% vs. 27.3%) [28].

Over one quarter of parents in this study indicated that an adult in their household currently uses tobacco. This is comparable to the reported 24.9% of U.S. children aged 3-11 years old that were currently living with one or more smokers in the household according to the 1999-2000 National Health and Nutrition Examination Survey (NHANES)[29].

In this study, only 15.0% of parents thought that one of their children had ever experimented with tobacco products and 8.1% of parents reported that they thought one of their children was currently using tobacco. When stratified by age of the oldest child, parents were more likely to report that one of their children had experimented with tobacco if the oldest child was 13-17 years old (23.8%) or 18 years or older (17.6%). Parents who think that one of their children had used tobacco in the past 30 days were more likely to have an oldest child between 13-17 years of age although the majority of parents of all children did not believe that one of their children had used tobacco in the past 30 days (90.9% of 8-12 years, 85% of 13-17 years, and 100.0% of 18 years or older). National data shows that an estimated 20% of 6-8th grade children have ever used tobacco and about 25% of 12th grade children currently use tobacco[1]. The discrepancy between this study and national data cannot be absolutely ascertained as actual child tobacco use data was not gathered. Previous literature has indicated that there can be an underestimation in children's risk taking behaviors, including tobacco use, when parents are asked to report on their own children's risk taking behaviors[30, 31].

This study found parental opinions of anti-tobacco messages given to children by the child's dentist did not differ based on parental tobacco use status, although parents who reported current tobacco use status were significantly more likely to indicate being upset if their child's dentist asked them about their own tobacco use. Pediatricians have a long history with inquiring about parental and household tobacco-use[25, 32] and Moss et. al. concluded that there is strong support to addressing parental smoking at pediatric office visits, yet they did note that parents

who smoke were less likely to have positive attitudes about being asked about their own tobacco use [25]. This if further supported in pediatric dental offices by Davidson et. al. whose study found that tobacco using parents were significantly less approving than nonusers of pediatric dentists speaking to parents about either the effect of parental tobacco use on their children or providing cessation education to parents[27].

Earliest Age for Anti-Tobacco Messages

Parents of older children are more likely to feel it is appropriate for a dentist to talk to their child about tobacco use, while parents of younger children are more likely to be unsure of the appropriateness of this practice. To date, there have not been any formal guidelines on the age in which pediatric dentists should begin talking to pediatric patients about tobacco use. The American Academy of Pediatrics has recommended that pediatricians begin providing anticipatory guidance about tobacco use to children by 5 years of age[32]. The American Academy of Pediatric Dentistry does not currently have an age recommendation for beginning a discussion about tobacco use with pediatric patients in its official guidelines. Despite this, in the pediatric dental literature, Albert et. al. recommend that children should be screened for smoking risk factors starting at age 10 years[3].

Child's Insurance Coverage

In 2012, it is estimated that about 31.7% of King County children 18 years and younger were enrolled in Medicaid insurance [33, 34]. The number of children covered by Medicaid at the CPD, per parental report, is over two-times greater than the county average (65.0%). Although insurance provider is not an exact correlate for socio-economic status, it does indicate that the CPD is likely serving more children from low-income families. This is relevant because low

socio-economic status has been associated with a high prevalence of smoking in population-based studies across the world[1].

Limitations:

This was a cross-sectional study conducted via a convenience sample of parents who participated in a self-report survey. This type of study design could lead to many levels of associated limitations/biases and would prohibit any causal associations be drawn.

Selection bias and exclusion bias would affect the generalizability of the study results to a population beyond that of the sample included. Because this study asked parents to report on their children's experiences, there is risk of misclassification of the data. Retrospective questions may be misclassified due to recall bias.

Discussion of the Survey Instrument:

This survey was developed by the primary investigator and was not validated. Any survey is subject to participant misunderstanding the questions which could lead to misclassification of the data. Some trends of incorrect use and possible participant confusion with this survey were discovered upon entry of survey data.

For example, the survey instrument utilized some questions with skip patterns which directed the participant to different questions based on a previous answer. In piloting the survey, no concerns or misuse of the skip patterns were identified. Therefore the question pattern was thought to be an understandable sequencing of questions. Early in data entry, it was identified that many completed surveys failed to show the correct use of the skip patterns. Due to this, the decision was made to uniformly complete the data entry for each survey utilizing as much information as was provided by the survey participant, whether or not they had followed the correct skip pattern. It is thought that some questions, including "Do you wish your child's

dentist would discuss tobacco use with your child" and "Did you feel it was appropriate for your child's dentist to ask you about your tobacco use", had very low response rates in part due to a misuse of the skip patterns.

In terms of another possible misunderstanding of survey questions, there were a few notable examples. In questions 2 and 3 of the survey (See Appendix C; Q2 & Q3), parents are first asked to identify when a person should first receive anti-tobacco messages, and then subsequently asked to identify when a person should first receive anti-tobacco messages from a dentist. In this wording, it was anticipated that the age category identified in Question 2 should be younger or the same as the age category identified in Question 3. Although, most surveys indicated this pattern, 19 people (6.6% of participants) indicated a younger age group in Question 3 than Question 2. As this was not the way the questions were meant to be answered, it may indicate misunderstanding of the questions. This misunderstanding may lead to an overestimation of the age at which parent's thought the first anti-tobacco message should be given.

Discussion of Survey Participants:

Because the survey was only available in English, there was selection bias in the survey findings since non-English speaking families were not included. Based on review of those who didn't participate, 44 parent's primary reason for not qualifying was due to a lack of English proficiently (See Figure 1). This clinic has a large number of non-native English speakers with many caregivers whose primary languages include Spanish, Russian, Arabic, Somali, Chinese and Vietnamese. These populations would have differing cultural and lifestyle norms that could vary from the responses of the population included in this survey. Religious faith was a variable that was not controlled for in this study although it likely should have been. Many religious faiths

constrain smoking behavior[1] and the literature has indicated that parents who participate in religious services are more likely to underestimate adolescents' substance use[30].

Sensitive Nature of Questions/Anonymity:

Because tobacco use among children and a child's tobacco exposure at home are both socially construed as un-healthy, it would be important for a parent to feel comfortable with answering sensitive questions while taking the survey. Many measures, such as providing a written survey (vs. verbal) and by not gathering any identifying information, were implemented in the methods of this study to preserve anonymity of the participants. Despite all the measures taken, there is still the possibility of social desirability bias that could have led some participants to selectively exclude certain questions, over-report healthy behaviors, and underreport unhealthy behaviors.

Generalizability:

This survey was only administered at only one pediatric dental clinic that happened to also be a University dental clinic in Seattle, Washington. Therefore, the results may not be representative of other non-university based pediatric dental clinics, or general dental clinics. However, the percentage of participants taking this survey that were White (63.5%) and Black/African Americans (8.7%) is comparable to the demographics reported for King County (63.8% White and 6.5% Black)[35]. The number of Hispanic parents that took this survey (14.6%) is greater than the number that would be expected by the King County Census data (9.2%)[35]. This is an expected finding considering that the CPD draws families from surrounding counties that are more rural and have larger Hispanic populations.

This study and the recent study involving 5 private practice suburban pediatric dental clinics had similar findings despite largely different demographics[27]. This study was conducted in a University pediatric clinic in Seattle, WA where the majority of the children were insured by Medicaid (65.0%) and 18.1% of parents were current smokers. The population in the private

practice pediatric dental clinics showed that only 15% of children were covered by Medicaid and only 7% of parents currently used tobacco[27]. This is encouraging that despite geographic location, socioeconomic status, or parental smoking status that the majority of parents are encouraging of dentists providing anti-tobacco messages to their children.

CONCLUSIONS:

The majority of parents indicated that dentists are an appropriate source for anti-tobacco messages to children and that the youngest appropriate age to give such messages is between 8-12 years old. Because dentists interact with youth and adolescents at more frequent intervals than other healthcare providers, they play an important role in providing anti-tobacco messages to children and families as part of overall health counseling. Among several perceived barriers to providing tobacco counselling, dentists frequently cite patient and parent resistance. This study provides important reassurance that medical doctors and dentists share equal acceptability as sources of preventive messages in regard to tobacco use. The results of this study should encourage dentists to feel more confident in approaching this topic with patients and their families. Additional studies to address or better understand the specific barriers cited by dentists in other studies could be useful in developing more effective anti-tobacco programs in a dental setting. Exploring and identifying appropriate training strategies for dentists, dental students, and dental teams on this topic is necessary to promote universal and sustainable anti-tobacco programs in dental clinics.

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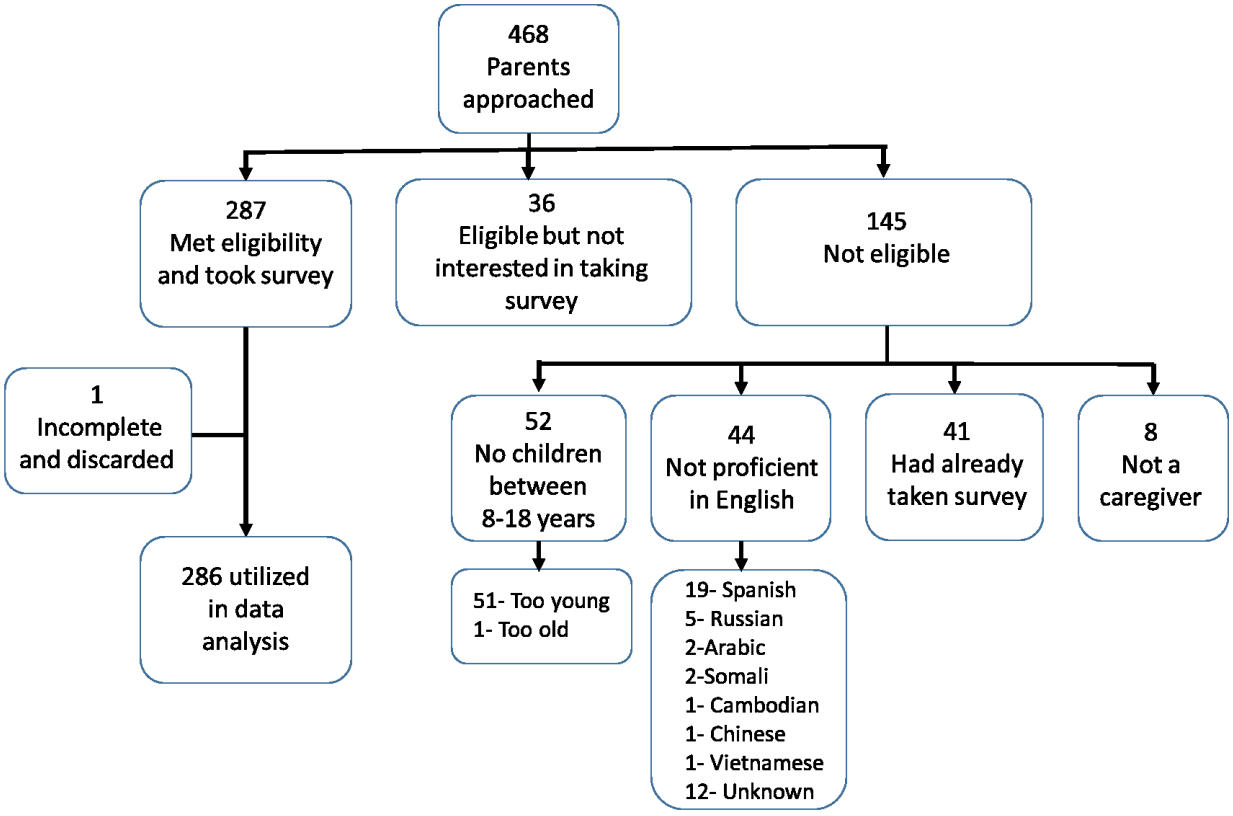

Figure 1: Flow diagram of people approached via a convenience sample for this study

Table 1: Summary of Parental and Child Demographics

Parent Demographics	**Mean (SD)**
Parent age (years):	42.1 (8.4)
	N (%)
Parent gender:	
Male	70 (24.9)
Female	211 (75.1)
Parent race:	
White	172 (63.5)
Black	25 (9.2)
Asian/Pacific Islander	29 (10.7)
Other/Multiple	45 (16.6)
Parent ethnicity:	
Hispanic	33 (14.6)
Non-Hispanic	193 (85.4)
Parental highest education completed:	
Less than high school	14 (5.0)
High School Degree/GED	48 (17.0)
Some College	82 (29.1)
College Degree	86 (30.5)
Professional or Graduate Degree	52 (18.4)
Family member works in healthcare field:	
Yes	54 (19.1)
No	228 (80.9)
Children Demographics	**Mean (SD)**
How many children in the household:	2.3 (1.3)
	N (%)
Age of oldest child in household:	
< = 7 years old	2 (0.7)
8-12 years	121 (43.4)
13-17 years	137 (49.1)
18+ years old	19 (6.8)
Child dental insurance coverage:	
DSHS/Medicaid/Coupons	186 (65.0)
Private Insurance	68 (23.8)
Other/Multiple	32 (11.2)

(SD)= Standard deviation

Table 2: Parental report of personal, child, and household tobacco use

Household and Personal Tobacco Use	**N (%)**
Any adult in the household currently uses tobacco:	
Yes	73 (26.2)
No	206 (73.8)
Surveyed parent ever used tobacco:	
Yes	128 (45.6)
No	153 (54.4)
Surveyed parent used tobacco in last 30 days:	
Yes	45 (18.1)
No	204 (81.9)
Frequency of parental tobacco use, if currently use: (n=45)	
Daily	32 (72.7)
Less than daily	12 (27.3)
Parent preferred tobacco product used, if currently use: (n=45)	
Cigarettes	37 (82.2)
Cigar	2 (4.4)
Chew (Smokeless tobacco)	1 (2.2)
E-Cigarette	2 (4.4)
Multiple	1 (2.2)
None	2 (4.4)
Children's Tobacco Use	**N (%)**
Parent thinks that child has experimented with tobacco products:	
Yes	38 (15.0)
No	196 (77.2)
Don't know	8 (3.1)
Believe children are too young	12 (4.7)
Parent thinks that child is currently using tobacco products:	
Yes	21 (8.1)
No	220 (84.6)
Don't know	9 (3.5)
Believe child is too young	10 (3.8)

Table 3: Parents belief a child has used or currently uses tobacco products based on age of the oldest child in the household

	Age of oldest child:			
	8-12 years	13-17 years	18+ years	
	N (%)	N (%)	N (%)	p-value*
Does parent think children have experimented with tobacco				
Yes	2 (2.1)	30 (23.8)	3 (17.6)	p< 0.001
No	84 (88.4)	93 (73.8)	14 (82.4)	
Don't know	9 (9.5)	3 (2.4)	0 (0.0)	
Does parent think children currently use tobacco (within past 30 days)				
Yes	2 (2.0)	17 (13.4)	0 (0.0)	p= 0.003
No	90 (90.9)	108 (85.0)	16 (100.0)	
Don't know	7 (7.1)	2 (1.6)	0 (0.0)	

* Calculated using Fisher's exact test of association

Table 4: Parental report of their perceptions on pediatric tobacco use and sources of anti-tobacco messages

Tobacco use/Source of anti-tobacco messages	N (%)
Youngest age parent thinks that most people start using tobacco products:	
<= 7 years old	3 (1.1)
8-12 years old	42 (14.8)
13-17 years old	217 (76.4)
18+ years	22 (7.7)
When should a person be given 1st anti-tobacco message (General):	
<=7 years old	133 (46.8)
8-12 years old	119 (41.9)
13-17 years old	18 (6.4)
18+ years	14 (4.9)
When should a person be given 1st anti-tobacco message by a Dentist:	
<=7 years old	67 (24.5)
8-12 years old	154 (56.4)
13-17 years old	48 (17.6)
18+ years	4 (1.5)
Who do you think should be giving children and adolescents anti-tobacco messages*:	
Parent	276 (96.5)
Medical Doctor	260 (90.9)
Dentist	260 (90.9)
Teacher	234 (81.8)
Other (Including friends, other family, clergy, media and celebrities)	64 (22.4)
Who has given your children anti-tobacco messages*:	
Medical Doctor	44 (15.4)
Dentist	11 (3.9)
Parent	140 (49.0)
Teacher	61 (21.3)
Other (Including TV, advertisements, media, family, and friends)	31 (10.8)
Anti-tobacco messages given to children by their child's dentist	**N (%)**
Has your child's dentist spoken to your child about his/her tobacco use:	
Yes	16 (5.7)
No	201 (71.3)
Don't know	65 (23.0)
Do you wish your child's dentist would discuss tobacco use with your child:	
Yes	53 (76.8)
No	8 (11.6)
Don't know	8 (11.6)
Do you feel it was/or would be appropriate for a dentist to ask your child about tobacco use:	
Yes	156 (65.8)
No	44 (18.6)
Don't know	37 (15.6)

*Answer percentages sum to >100% as participants were asked to "Check all that apply"

Table 5: Parental perceptions of a dentist discussing tobacco use with them

	N (%)
Has a dentist ever asked you if you use tobacco products:	
Yes	121 (42.6)
No	144 (50.7)
Don't know	19 (6.7)
Has your child's dentist ever asked you about your own tobacco use:	
Yes	15 (5.3)
No	258 (90.5)
Don't know	12 (4.2)
Did you feel it was appropriate for your child's dentist to ask you about your tobacco use:	
Yes	56 (66.7)
No	18 (21.4)
Don't know	10 (11.9)
Would you be upset if your child's dentist asked you about your tobacco use:	
Yes	24 (9.6)
No	206 (82.4)
Don't know	20 (8.0)

Table 6: Parental perceptions about anti-tobacco messages given to them or their children by a dentist depending on their own tobacco use status

	Parent currently uses tobacco:		
	Yes	No	
	N (%)	N (%)	p- value *
Youngest age parent thinks that most people start using tobacco products:			
<= 7 years old	1 (2.3)	2 (1.0)	0.285
8-12 years old	6 (13.6)	33 (16.2)	
13-17 years old	36 (81.8)	149 (73.4)	
18+ years	1 (2.3)	19 (9.4)	
When should a person be given 1st anti-tobacco message (General):			
<=7 years old	20 (44.4)	91 (45.0)	0.969
8-12 years old	21 (46.7)	87 (43.1)	
13-17 years old	3 (6.7)	15 (7.4)	
18+ years	1 (2.2)	9 (4.5)	
When should a person be given 1st anti-tobacco message by a DENTIST:			
<=7 years old	14 (31.8)	45 (23.4)	0.598
8-12 years old	24 (54.6)	107 (55.7)	
13-17 years old	6 (13.6)	36 (18.8)	
18+ years	0 (0.0)	4 (2.1)	
Has your child's dentist spoken to your child about his/her tobacco use:			
Yes	4 (8.9)	10 (5.0)	0.307
No	34 (75.6)	141 (70.5)	
Don't know	7 (15.5)	49 (24.5)	
Do you feel it was/or would be appropriate for a dentist to ask your child about tobacco use:			
Yes	10 (76.9)	38 (76.0)	0.167
No	3 (23.1)	5 (10.0)	
Don't know	0 (0.0)	7 (14.0)	
Do you wish your child's dentist would discuss tobacco use with your child:			
Yes	26 (68.4)	110 (65.1)	0.102 **
No	10 (26.3)	29 (17.2)	
Don't know	2 (5.3)	30 (17.7)	
Has your child's dentist ever asked you about your own tobacco use:			
Yes	4 (8.9)	10 (4.9)	0.546
No	39 (86.7)	183 (90.2)	
Don't know	2 (4.4)	10 (4.9)	
Did you feel it was appropriate for your child's dentist to ask you about your tobacco use:			
Yes	11 (68.8)	40 (64.5)	1.000
No	3 (18.7)	14 (22.6)	
Don't know	2 (12.5)	8 (12.9)	
Would you be upset if your child's dentist asked you about your tobacco use:			
Yes	8 (21.1)	14 (7.9)	0.032
No	29 (76.3)	146 (82.0)	
Don't know	1 (2.6)	18 (10.1)	

* Calculated using Fisher's exact test of association

** Calculated using Chi-square test of association

Table 7: Parental perceptions about anti-tobacco messages given to them and their children by a dentist depending on the age of their oldest child

	Age of oldest child:			
	8-12 years	13-17 years	18+ years	
	N (%)	N (%)	N (%)	p-value*
Youngest age parent thinks that most people start using tobacco products:				
<= 7 years old	0 (0.0)	3 (2.2)	0 (0.0)	0.180
8-12 years old	12 (10.1)	23 (16.8)	4 (21.0)	
13-17 years old	99 (83.2)	98 (71.5)	15 (79.0)	
18+ years	8 (6.7)	13 (9.5)	0 (0.0)	
When should a person be given 1st anti-tobacco message (General):				
<=7 years old	54 (45.0)	66 (48.5)	10 (52.6)	0.680
8-12 years old	56 (46.6)	51 (37.5)	7 (36.8)	
13-17 years old	5 (4.2)	11 (8.1)	1 (5.3)	
18+ years	5 (4.2)	8 (5.9)	1 (5.3)	
When should a person be given 1st anti-tobacco message by a DENTIST:				
<=7 years old	26 (22.4)	36 (27.5)	4 (23.5)	0.477
8-12 years old	68 (58.6)	68 (51.9)	11 (64.7)	
13-17 years old	21 (18.1)	25 (19.1)	1 (5.9)	
18+ years	1 (0.9)	2 (1.5)	1 (5.9)	
Has your child's dentist ever asked your child about tobacco use:				
Yes	1 (0.9)	11 (8.2)	3 (15.8)	0.003
No	95 (79.8)	91 (67.4)	10 (52.6)	
Don't know	23 (19.3)	33 (24.4)	6 (31.6)	
Do you feel it was/or would be appropriate for a dentist to ask your child about tobacco use:				
Yes	9 (47.4)	34 (85.0)	5 (100.0)	0.004
No	3 (15.8)	5 (12.5)	0 (0.0)	
Don't know	7 (36.8)	1 (2.5)	0 (0.0)	
Do you wish your child's dentist would discuss tobacco use with your child:				
Yes	62 (57.9)	82 (73.9)	7 (58.3)	0.096
No	26 (24.3)	15 (13.5)	2 (16.7)	
Don't know	19 (17.8)	14 (12.6)	3 (25.0)	
Has your child's dentist ever asked you about your own tobacco use:				
Yes	7 (5.9)	6 (4.4)	1 (5.3)	0.795
No	109 (90.8)	123 (89.8)	18 (94.7)	
Don't know	4 (3.3)	8 (5.8)	0 (0.0)	
Did you feel it was appropriate for your child's dentist to ask you about your tobacco use:				
Yes	18 (62.1)	30 (69.8)	4 (57.1)	0.141
No	5 (17.2)	11 (25.6)	1 (14.3)	
Don't know	6 (20.7)	2 (4.6)	2 (28.6)	
Would you be upset if your child's dentist asked you about your tobacco use?				
Yes	10 (9.5)	13 (10.6)	1 (7.1)	0.942
No	85 (81.0)	101 (82.8)	12 (85.8)	
Don't know	10 (9.5)	8 (6.6)	1 (7.1)	

* Calculated using Fisher's exact test of association

Appendix A: Study Eligibility Checklist

Study eligibility:
To determine the eligibility of the study subjects approached

1. **Are you responsible for the health of any children between 8 and 18 years old?**

☐ Yes → Continue to #2.
☐ No → STOP. You are not eligible to participate in this study. Thank you for your time.

2. **Are you able to read, speak, and write in English?**

☐ Yes → Continue to #3.
☐ No → STOP. You are not eligible to participate in this study. Thank you for your time.

3. **Are <u>you</u> 18 years or older?**

☐ Yes → Continue to #4.
☐ No → STOP. You are not eligible to participate in this study. Thank you for your time.

4. **Have you participated in this study yet?**

☐ Yes → STOP. You are not eligible to participate in this study.
☐ No → STOP. Congratulations! You are eligible to participate in our study.

Appendix B: Study Information Sheet for Participants

UNIVERSITY OF WASHINGTON
Information Sheet

Parental opinions of anti-tobacco messages within a pediatric dental office

Researchers:

- Kari Sims, DDS, Primary Investigator, (206) 543-5800 or e-mail at kasims@uw.edu
  Resident, Pediatric Dentistry, University of Washington and Seattle Children's Hospital
  MSD and MPH Candidate, University of Washington Schools of Dentistry and Public Health
- Penelope Leggott, BDS, MS, Committee Chair, (206) 543-1975
  Professor of Pediatric Dentistry, University of Washington School of Dentistry
- Melissa Schiff, MD, MPH, (206) 744-9436
  Professor of Epidemiology, University of Washington School of Public Health
- JoAnna Scott, PhD, (206) 543-2973
  Acting Assistant Professor of Pediatric Dentistry, University of Washington School of Dentistry

Researchers' statement

We are asking you to be in a research study. When we have answered all of your questions, you can decide if you want to be in the study or not. Your answers will be anonymous, meaning there will be no identifying information linked to your survey. Your decision to participate will not affect the care you or your child will receive.

Purpose of the Study

Tobacco use is the number one cause of preventable death in the United States. Unfortunately, children in the United States are still starting to use tobacco regularly at a young age. Anti-tobacco messages have been found to be more effective when given by multiple health care providers. Despite this, numerous barriers to providing effective anti-tobacco messages within dental clinics have been reported. A better understanding of parental opinions on the appropriateness of anti-tobacco messages given to children by dentists will provide valuable information to the dentists providing these messages.

Other Information

If you have questions later about the research, you can contact one of the researchers listed above. If you have questions about your rights as a research subject, you can call the University of Washington Human Subjects Division at (206) 543-0098.

Appendix C: Survey instrument (4 pages)

Date: _____

Part 1:

Parental opinions of anti-tobacco messages within a pediatric dental office

Tobacco products are considered to be cigarettes, cigars, smokeless tobacco (chew), or e-cigarettes.

Q1. How old do you think most people are when they first start using tobacco products?	☐ 7 years or younger ☐ 8-12 years ☐ 13-17 years ☐ 18 years or older
Q2. How old do you think a person should be when given their **first** anti-tobacco message?	☐ 7 years or younger ☐ 8-12 years ☐ 13-17 years ☐ 18 years or older
Q3. How old do you think a person should be when given their **first** anti-tobacco message by a **dentist**?	☐ 7 years or younger ☐ 8-12 years ☐ 13-17 years ☐ 18 years or older ☐ A dentist shouldn't give anti-tobacco messages
Q4. Who do you think should be giving anti-tobacco messages? (Check all that apply)	☐ A medical doctor ☐ A dentist ☐ A parent ☐ A teacher ☐ Other (please specify): _____
Q5. Who do you think should be giving **children and adolescents** anti-tobacco messages? (Check all that apply)	☐ A medical doctor ☐ A dentist ☐ A parent ☐ A teacher ☐ Other (please specify): _____
Q6. How often should a dentist give a child or adolescent anti-tobacco messages?	☐ Every visit ☐ Every cleaning/exam visit ☐ 1 time per year ☐ Less than 1 time per year ☐ Only if the dentist sees signs of tobacco use ☐ A dentist shouldn't give anti-tobacco messages ☐ Other (please specify): _____

Q7. As far as you know, has your child's dentist ever asked your child about tobacco use?	**Yes** ☐ Go to Q8	**No** ☐ Go to Q9	**I don't know** ☐ Go to Q9
Q8. If "Yes"… Did you feel it was appropriate for the dentist to ask your child about tobacco use?	**Yes** ☐	**No** ☐	**I don't know** ☐
Q9. If "No" or "I don't know"… Do you wish the dentist would ask your child about tobacco use?	**Yes** ☐	**No** ☐	**I don't know** ☐
Q10. Has a dentist ever asked **YOU** if you use tobacco products?	**Yes** ☐	**No** ☐	**I don't know** ☐
Q11. Has **your child's dentist** ever asked **YOU** about your own tobacco use?	**Yes** ☐ Go to Q12	**No** ☐ Go to Q13	**I don't know** ☐ Go to Q13
Q12. If "Yes"… Did you feel it was appropriate for your child's dentist to ask **YOU** about **YOUR** tobacco use?	**Yes** ☐	**No** ☐	**I don't know** ☐
Q13. If "No" or "I don't know"… Would you be upset if your child's dentist asked **YOU** about **YOUR** tobacco use?	**Yes** ☐	**No** ☐	**I don't know** ☐
Q14. Do you think that any of your children have experimented with tobacco products?	☐ Yes ☐ No ☐ I don't know ☐ My children are too young		
Q15. Do you think that any of your children have used tobacco products **in the last 30 days**?	☐ Yes ☐ No ☐ I don't know ☐ My children are too young		

Q16. If you had a questions about tobacco use prevention or cessation for you or anyone in your family, do you know where you would go for information?		☐ Yes (Go to Q17) ☐ No (Go to Q18) ☐ I don't know (Go to Q18)
Q17. **If Yes…** Where would you go for tobacco use prevention and cessation information?		Please list any resources you would use: _____ _____ _____
Q18. Do **any adults** in your household currently use tobacco products?		☐ Yes ☐ No
Q19. Have **YOU ever** used tobacco products?		☐ Yes (Go to Q20) ☐ No (Go to Q23)
Q20. Have **YOU** used tobacco products **within the last 30 days**?		☐ Yes (Go to Q21) ☐ No (Go to Q23)
Q21. How often do you use tobacco products?	☐ Daily ☐ Weekly, but not every day ☐ Less than weekly	
Q22. What is your preferred tobacco product? (Check all that apply)	☐ Cigarettes ☐ Cigars ☐ Smokeless tobacco (chew) ☐ E-cigarettes ☐ Other (Please specify):_____	
Q23. Do you know if any of your children have received anti-tobacco messages in the last 6 months?		☐ Yes (Go to Q24) ☐ No (Go to Next Page) ☐ I don't know (Go to Next Page)
Q24. To your knowledge, who has given anti-tobacco messages to any of your children?	☐ A medical doctor ☐ A dentist ☐ A parent	☐ A teacher ☐ Other (Please specify): _____

Part 2: Questions about you and your child and/or children:

Q25. How old are **YOU** (the parent)?	_____ years old	
Q26. Your relationship to the child at today's visit:	☐ Mother ☐ Father ☐ Aunt ☐ Uncle	☐ Grandmother ☐ Grandfather ☐ Other (Please specify): _____
Q27. Please indicate your race: (Check all that apply)	☐ Black ☐ American Indian or Alaska Native ☐ Asian/Pacific Islander ☐ White	☐ Other (Please specify): _____ ☐ I prefer not to answer
Q28. Please indicate your ethnicity	☐ Hispanic/Latino ☐ Non-Hispanic/Non-Latino ☐ I prefer not to answer	
Q29. What is the highest level of education you have completed?	☐ Less than high school ☐ High school/GED ☐ Some College	☐ College graduate ☐ Graduate or Professional Degree
Q30. What type of dental insurance does your child/children have? (Check all that apply):	☐ DSHS/Medicaid/Coupons ☐ Private Insurance ☐ No insurance (Self-pay)	☐ Other (Please specify): _____
Q31. How many children 18 years or younger live in your household?		_____ # of children

Please indicate their ages:	Child 1: ___years	Child 2: ___years	Child 3: ___years	Child 4: ___years	Child 5: ___years

Q32. Does anyone within your household work in a medical profession (i.e. Nursing, Medical, Dental, etc…)?	☐ Yes ☐ No

Thank you for participating in this survey.