Dental Utilization by Pediatric Patients Attending the 2015 Dental Home Day

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Purpose: To describe dental care utilization of patients who participated at the Dental Home Day (DHD) in 2015. Additionally, to determine if, among participants receiving free dental care for one year, insurance type is associated with dental care utilization.

Methods: Demographics, utilization of dental care, and treatment performed were collected from 149 participants who were followed for 15 months. Descriptive statistics were calculated for all variables of interest stratified by insurance type. Bivariate associations between insurance type and specific variables were tested using Chi-square tests, Fisher's Exact tests, and one-way ANOVA. Unadjusted and adjusted logistic regression (binary outcomes) and Poisson regression (count outcomes) were used to test for associations between various outcomes and predictors of interest. The significance level was set to $\alpha = 0.05$.

Results: Overall utilization for all participants was 81.2%. Insurance type is significantly associated with overall utilization after adjusting for gender, age, and DFT ($p = 0.048$). Overall utilization is significantly higher in a privately insured participant compared to an uninsured participant after adjustment (OR = 6.60, 95% CI = (1.43, 30.33), $p = 0.015$).

Conclusion: Participants utilized care at a higher rate than would be expected based on national data. Individuals with private insurance had higher overall utilization. This is strongly attributed to the significantly higher rate of recall visits. This study shows there may be an association with insurance type and rate at which they attend recalls in the setting of free dental care.

A. INTRODUCTION

Oral Health in Children

Dental caries is the most ubiquitous chronic disease in children in the United States and worldwide.[1,2] Primary dentition is more susceptible to dental caries than permanent dentition due to its thinner enamel, thinner dentin, and proportionally larger pulp chambers as well as the comparatively broad contacts between primary teeth.[3] Dental caries in the primary dentition is a progressive disease that is highly predictive of dental caries occurring in the permanent dentition.[4,5] It is a largely preventable disease process when aided by proper oral hygiene, fluoride use, reduced sugar consumption, sealants, and regular dental visits.[6]

In an analysis of the 2011-2012 National Health and Nutrition Examination Survey (NHANES), 36.7% of children between the ages of 2-8 years have experienced dental caries in their primary dentition.[7] The early permanent dentition is also affected, as prevalence of dental caries in adolescents 12-19 years of age was 58%.[5] Oral disease has a negative effect on children's quality of life by causing pain, malnutrition, and an inability to sleep well.[8] It also effects children's performance in the educational setting, resulting in missed days of school and lower grade point averages.[9]

Strong clinical evidence exists for the efficacy of early professional dental care, anticipatory guidance, and periodic supervision in the prevention of dental caries.[10] Providing children and their caregivers with oral hygiene education at an early age in the children's lives can help ensure their general well-being.[11] Receiving regular dental care is vital to protecting children from dental disease and promoting their oral health.[11] These points lead to the importance of establishing a dental home for a child. The dental home is defined by the

American Academy of Pediatric Dentistry (AAPD) as the ongoing relationship between the dentist and the patient, inclusive of all aspects of oral health care delivered in a comprehensive, continuously accessible, coordinated and family-centered way.[12] However, children are a particularly vulnerable population because they must rely on their caregivers to provide access care including establishing a dental home.

Barriers to Oral Health Care in Children

Addressing barriers to accessing dental care and establishing a dental home plays a vital role in improving children's overall health and development. The 2013 Medical Expenditure Panel Survey reported 48.3% dental care utilization for children 2-18 years of age in the United States, where dental care utilization is defined as having a dental visit within the last year.[13] This survey determined that over half of all American children age 2-18 years old did not utilize any dental care in 2013.[13]

Uninsured and Underinsured Children

Due to their families having income qualifications below defined financial thresholds, many children have only have access to dental care through public insurance. State run federal programs, like Medicaid and the Children's Health Insurance Program, are required to provide dental benefits to children who qualify.[14] It has been shown that dental utilization by children 5-17 years of age with public insurance is equivalent to the utilization of children of the same age with private insurance.[15] Unfortunately, not all financially vulnerable children qualify for Medicaid. Approximately 12.2% of children age 2 through 18 had no dental insurance in 2013.[13] Uninsured children are less than half as likely to receive preventive dental care as children who have insurance. Finances is an extra layer of barriers to access to dental care.[17] There may also

be underinsured children with private dental insurance whose families cannot afford co-pays or uncovered services. Luckily, with the implementation of the Affordable Care Act, 8.7 million children are expected to gain dental care insurance coverage by 2018.[16]

The 2013 Medical Expenditure Panel Survey reported on children's dental care utilization based on insurance coverage type. It found for children 2-18 years of age there was a difference in dental care utilization based on insurance type. Children with private insurance had the highest rate of utilization (58.5%), followed by children with public insurance (42.4%), and the lowest rate belonging to the uninsured children (24.9%).[13]

Families with children that are either underinsured or uninsured may pay out of pocket or seek out free care options to address their dental care needs. One option available to them is free and low cost dental clinics. These clinics provide services based on need and on varying income levels. [18] Geller et al. looked at 106 health clinics that provided free care and of these clinics, 53% had dental services. The patient populations of these clinics were reported to be primarily low-income, uninsured patients. Interestingly, some reporting clinics stated that their patient pool also consisted of an underinsured private insurance holder population whose providers did not accept or did not cover certain needed services.[18] Another study evaluated utilization rates one year prior to free dental care compared with one year of free dental care that showed an increase of 46% utilization among ten clinics in Soweto, South Africa.[19]

So far, we have found limited information available that addresses uninsured, publicly insured, or privately insured pediatric populations and their access in a free dental care setting. There is potential that families with children that are un- or underinsured may be prohibited from seeking regular dental care due to the fee associated. Children need to have access to oral health

care, but there are financial barriers that put them at a higher risk for dental disease. Utilization of dental care may yield different results by insurance type if the affordability barrier of the care is removed.

Study Objectives

This study will evaluate the characteristics of pediatric patients who participated in "Dental Home Day" (DHD), a free dental care event on May 20, 2015, at the University of Washington's Center for Pediatric Dentistry (UWCPD) and funded by the American Academy of Pediatric Dentistry's Healthy Smiles, Healthy Children Foundation. Patients were given comprehensive preventive and restorative dental treatment and were granted continued dental care for the following year at no cost to the patient's family.

The objectives of this study are to describe the demographic characteristics and dental care utilization of DHD participants and the subsequent year of free dental care. The subpopulations of specific interest are the uninsured, public insurance, and private insurance populations. This study's aim is to answer the following clinical question: among participants of the DHD receiving free dental care for one year, does insurance type affect dental care utilization? Our primary hypothesis is that less than 50% of the participants that attended DHD will return for a dental visit within one year, during which their dental care is free. The secondary hypothesis is that DHD participants who returned for a dental appointment and have different insurance types will not have significantly different dental care utilization.

B. METHODS

This study was approved by the University of Washington Human Subject Division of the Institutional Review Board (number 52063).

This is a retrospective longitudinal study. The study population consists of 149 participants who attended the DHD at the University of Washington, Center for Pediatric Dentistry (UWCPD) for dental care on May 20, 2015 (baseline), and who either did or did not return for a dental appointment between May 21, 2015 and August 31, 2016, at the UWCPD (Figure 1). All participants were between 0-18 years old. Attending DHD allowed participants to receive radiographs, examinations, fluoride varnish, sealants, prophylaxis, restorations, stainless steel crowns, anterior composite crowns, simple tooth extractions, space maintainers, primary tooth pulp therapy, and the use of nitrous oxide at no charge for the duration of one year.

Dental Home Day Baseline

The demographic information collected at baseline consists of date of birth, gender, and dental insurance type (no insurance/ public insurance/ private insurance). There were several dental variables also collected at baseline including untreated dental caries (yes/no), number of teeth with untreated dental caries, dental caries experience (yes/no), having a previously placed restoration (charted or viewed radiographically), number of previously placed restorations (charted or viewed radiographically), dental procedures performed (examination, prophylaxis, application of fluoride varnish, radiographs, sealants placed).

Dental Care Utilization 15 Months after Dental Home Day

At dental visits taking place between May 21, 2015 and August 31, 2016, variables were collected dependent on visit type (preventive recall examination, restorative, or limited examination). Preventive recall examination data consisted of date of treatment, dental procedures performed (examination, prophylaxis, application of fluoride varnish, radiographs, sealants placed), untreated dental caries, and caries experience. Collection for restorative visits consisted of the number of restorative appointments (where teeth were indicated for restorations

due to caries), number of sealant appointments (where sealants were placed), number of overall restorations (restorations and sealants combined), number of restorations (due to caries), type and number of restorative procedures (sealants, composite, amalgam anterior crown, stainless steel crown, extractions) and type of behavior management (nitrous oxide, oral sedation, general anesthesia). At limited examinations, the data extracted was the total number of limited examinations, type of limited examination (caries, trauma, other), and any dental procedure performed (examination, prophylaxis, application of fluoride varnish, radiographs, sealants placed, composite, amalgam anterior crown, stainless steel crown, extractions).

Constructed Variables

Certain variables were created during the analysis. Utilization is defined as a dental visit consisting of either a recall, restorative appointment or limited exam. Recall utilization is defined as attending a recall examination. Additionally, we created a 6 month recall utilization and 1 year recall utilization variable. We defined this as a recall examination having taken place between the baseline visit and up to 9 months after the baseline visit (6 month recall) and between more than 9 months and up to 15 months after the baseline visit (1 year recall) respectively. Restorative utilization is defined by attending a restorative or sealant appointment. DFT is calculated as the sum of the number of untreated dental caries and number of previously placed restorations at baseline. We did not include the "missing" portion of the more familiar DMFT due to transitional dentition and the possibility of teeth missing due exfoliation.

Data collection was conducted by accessing electronic dental records from AxiUm dental software for all treatment performed at the UWCPD during the collection interval. The data was then entered into REDCap (7.1) (Institution of Translational Health Services, Vanderbilt

University, Nashville, TN, USA) and exported into Stata (13.1) (StataCorp LP, College Station, TX, USA) for data analysis.

Data Analysis

Descriptive statistics (means, standard deviations (SD), minimums, maximums, counts, and percentages) were calculated for all variables and stratified by insurance type. Chi-square tests, Fisher's Exact tests, and one-way ANOVA were used to test the associations between variables of interest and insurance type. Unadjusted and adjusted logistic regression (binary outcomes) and Poisson regression (count outcomes) were used to test for associations between various outcomes and predictors of interest. The significance level was set to $\alpha = 0.05$.

C. RESULTS

Descriptive Statistics

The study has 149 total subjects who were followed for 15 months. Most of the sample reported no insurance (48.3%), being male (57.1%), being in the 0-5 years (43.0%) age range, and having untreated dental caries (44.3%). The average DFT was 3.3 (SD = 5.0) with a range of 0 to 20 (Table 1). The uninsured group has the highest percentage of untreated dental caries at 48.6%. However, the private insurance group has the highest average DFT at 3.8 (SD = 5.1). No significant differences were found between insurance type and any of these variables. (Table 1)

We found an overall utilization of 81.9% in this sample and that the rates of utilization did not significantly differ by insurance types (p=0.069). (Table 2) Recall utilization for the entire follow-up period was 58.4%. When restricting to 6 month and 1 year recalls, the utilization was 50.3% and 40.3%, respectively. The privately insured group had a significantly higher rate of recall utilization overall, at 6 months, and at 1 year than any other insurance groups (p = 0.004, 0.047, and 0.001 respectively). Restorative appointment utilization was

significantly higher in the privately insured group than the other groups (p=0.045). The average number of recall exams performed were significantly higher in the privately insured group than in the uninsured and publicly insured groups (1.4 vs. 0.7 and 0.93 respectively; $p < 0.001$). (Table 2)

Multivariate Analysis

Insurance type is significantly associated with overall utilization after adjusting for gender, age, and DFT ($p = 0.048$). Overall utilization is significantly higher in a privately insured participant compared to an uninsured participant after adjustment (Odds Ratio (OR) = 6.60, 95% Confidence Interval (CI) = (1.43, 30.33), $p = 0.015$). (Table 3) Number of total visits is significantly associated with DFT after adjusting for gender, age, and insurance type ($p <0.001$). Participants with a DFT of '1 to 2' or '3 or more' have significantly higher number of total visits compared to a participant with a DFT of 0 (OR = 1.71 and 2.09, 95% CI = (1.05, 2.76) and (1.50, 2.82); $p = 0.030$ and <0.001 respectively). (Table 3)

Recall utilization is significantly associated with insurance type after adjusting for gender, age, and DFT ($p = 0.006$). (Table 4) Recall utilization is significantly higher in a privately insured participant than in an uninsured participant (OR = 4.79, 95% CI = (1.84, 12.42), $p = 0.001$). Number of restorations placed is significantly associated with DFT after adjusting for gender, age, and insurance type ($p <0.001$). Participants with a DFT of '3 or more' have a significantly higher number of restorations placed compared to a participant with a DFT of 0 (OR = 2.66, 95% CI = (1.60, 4.44); $p < 0.001$). (Table 4)

D. DISCUSSION

The purpose of this study is to describe the demographic characteristics and the dental care utilization by insurance type of the participants in Dental Home Day and the subsequent year of free dental care. The utilization of dental care is important as regular dental visits have been shown to prevent dental caries in children. These dental visits also take steps toward establishing a dental home. This study will also help in the understanding of whether programs like the DHD are effective in their goal of helping children begin to establish a dental home.

In this retrospective longitudinal study, we collected data for participants of the 2015 Healthy Children, Healthy Smiles Dental Home Day for 15 months after their baseline visit. Overall utilization for all participants was 81.9%, well above the most recent national average of 48.3%. In looking at the insurance types, the odds for overall utilization was significantly higher for private insurance when compared to the uninsured group after adjusting for gender, age and DFT (OR = 6.60, p =0.015). We saw that the recall utilization was also significantly higher for private insurance when compared to the uninsured group after adjustment (OR = 4.79, p = 0.001). (Tables 3 and 4).

These findings support the idea that if children have the opportunity to receive free dental care, the families will utilize it. We saw that there was over a 69% increase in the rate of overall utilization of dental care when compared to the national average. This demonstrates that the 2015 DHD was effective in helping children begin to establish a dental home. We also saw a higher rate of overall utilization by those with private insurance when compared to participants who were uninsured. In looking at the results more closely we see there is no significant difference in number of total visits when by insurance type (p = 0.102). This trend is consistent with the findings from national data collection when treatment is not free of cost.

Our overall findings are consistent with the study in Soweto, South Africa, that offered free care for a year and saw an increase in the utilization rate of 46%.[19] This is the only study found in our review of the literature that looked at dental care utilization of free dental care for any length of time. One major difference between the South African study and this study is the comparison group. The present study compared the utilization to the Medical Expenditures Panel Survey from 2013 whereas the Soweto study compared the utilization to the same individuals' utilization one year prior to receiving free dental care.

There are several study limitations. One limitation is that there is an assumed perceived need by participants, which may have led to increased utilization. Therefore this limits the generalizability of these results. Another limitation is the sample size. Our sample size is not small, but we might have seen additional significant differences with a larger sample size. Additionally, we do not know whether individuals who failed to utilize dental care obtained dental care at an outside practice. Further, this study looks at a local population and compares it to a national one, so there may be variability in the type of population in our study. There is also a risk of insurance misclassification as insurance type was self-reported.

There are several additional future studies that would be of interest. One potential study of benefit would be to follow this sample for an additional 1-2 years to examine if the patients continued to utilize dental care after it is no longer provided free of charge and to determine whether they established a dental home. Another study that would be of interest is to contact those individuals who ceased coming to utilize care during the free year of care to identify the reason(s) they did not return. An additional study could examine DHD at different sites and determine if the samples and utilization differ. This could show if there is a regional effect between Dental Home Days.

Participants of the 2015 AAPD Healthy Smiles, Healthy Children's Dental Home Day utilized care and potentially established a dental home at a higher rate than would be expected based on national data (MEPS). The degree of dental caries was not found to be significantly different for the different insurance groups, yet individuals with private insurance came for more visits and had a higher utilization rate. This is strongly attributed to the significantly higher rate of recall visits. This study shows that there may be an association with insurance type and rate at which they attend recalls in the setting of free dental care at the UWCPD. In the setting of free dental care for a year, there may have been underinsured individuals with private insurance who find it difficult to make co-payments and were further motivated to attend dental visits. Conversely, the uninsured group would also have motivation to obtain the free dental care, as they would otherwise have the financial burden for care. Although the Healthy Children, Healthy Smiles Dental Home Day removes the financial barrier to care, there may be other factors at play limiting access to care, including transportation, ability to take time off work to come to dental visit, convenient appointment times, language barriers, and other socioeconomic differences. We must look at ways to continue to eliminate barriers so children can receive the care they need.

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APPENDIX

Figure 1. Study Population by Insurance Type

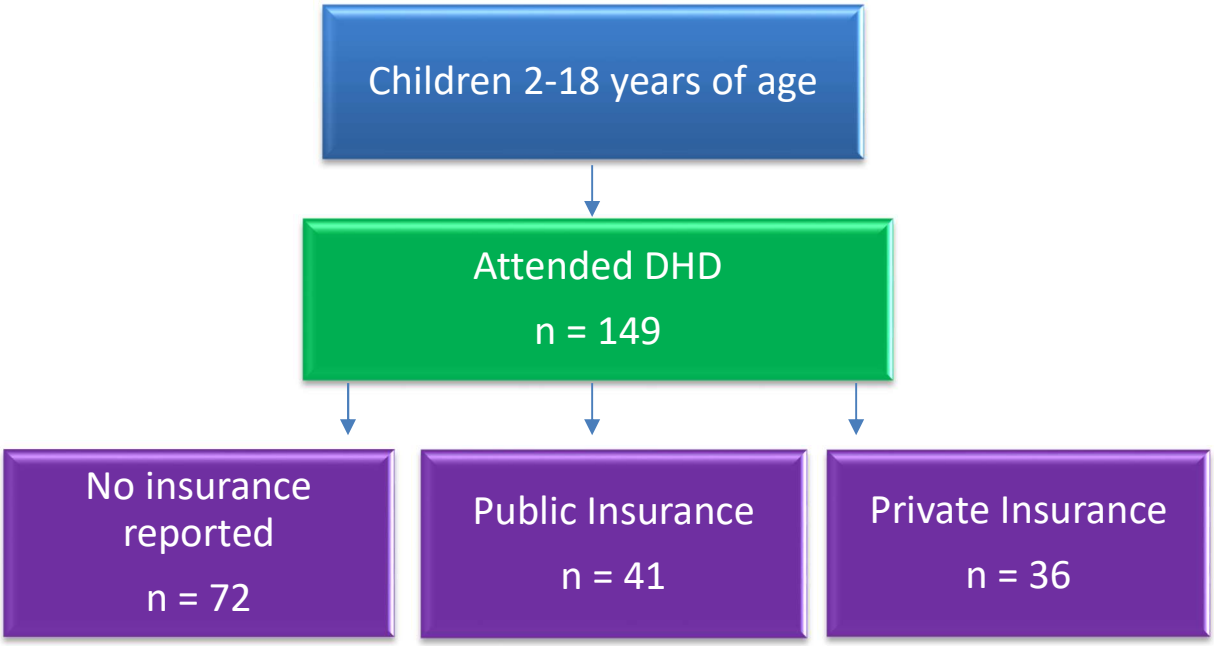

Figure 2. Overall Utilization and Recall Utilization for Entire Study Population and by Insurance Type

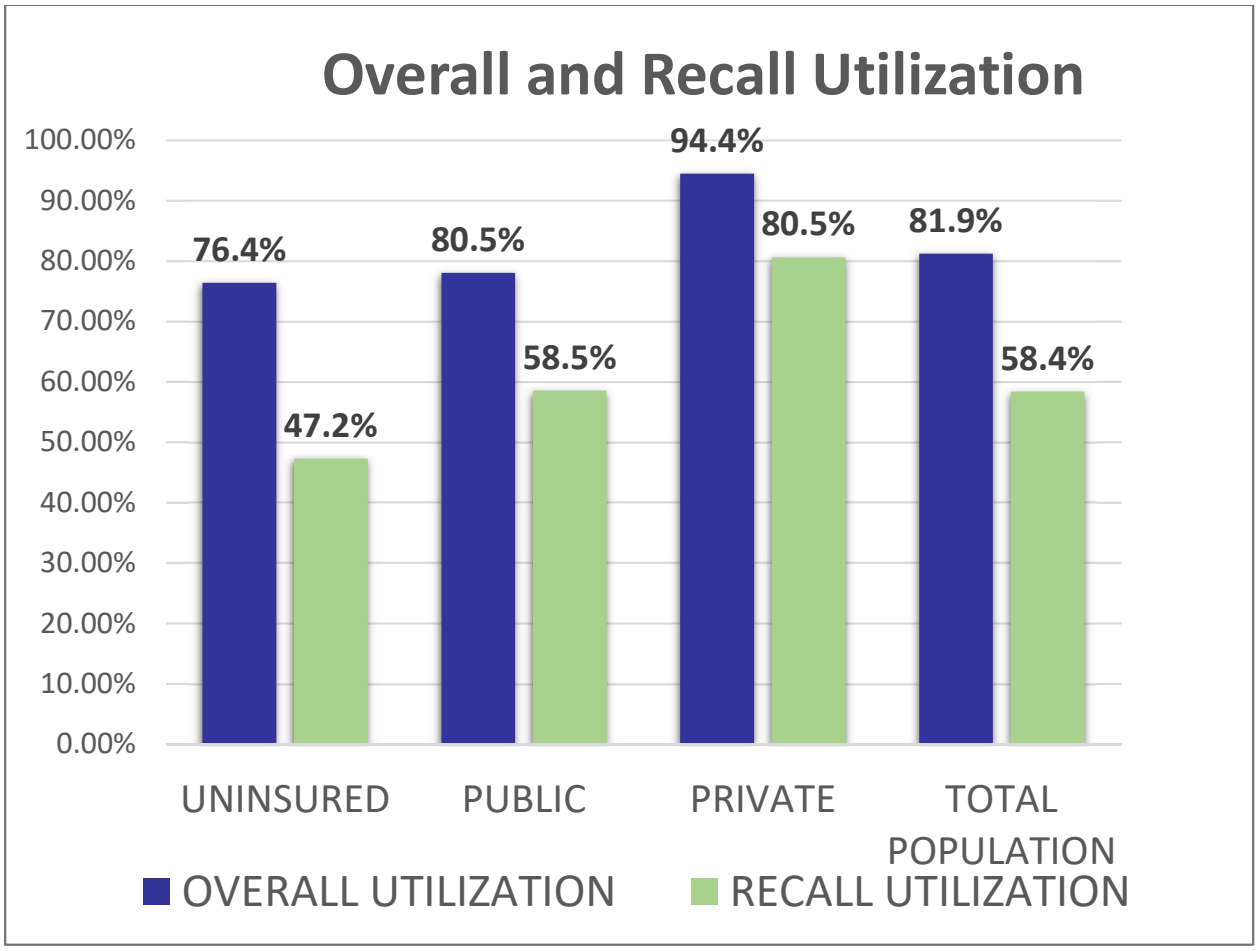

Table 1: Dental Home Day Demographics and Baseline Dental Information

	Insurance Type				
	Uninsured	**Public Insurance**	**Private Insurance**	**Total**	**p-value**
	N (%)	**N (%)**	**N (%)**	**N (%)**	
Total	72 (48.3%)	41 (27.5%)	36 (24.2%)	149 (100%)	
Gender					
Female	35 (48.6%)	16 (39.0%)	13 (36.1%)	64 (43.0%)	0.389*
Male	37 (51.4%)	25 (61.0%)	23 (63.9%)	85 (57.0%)	
Age					
0-5 years	26 (36.1%)	19 (46.3%)	19 (52.8%)	64 (43.0%)	0.540*
6-12 years	32 (44.4%)	15 (36.6%)	11 (30.6%)	58 (38.9%)	
13-18 years	14 (19.4%)	7 (17.1%)	6 (16.7%)	27 (18.1%)	
Untreated Dental Caries					
Yes	35 (48.6%)	15 (36.6%)	16 (44.4%)	66 (44.3%)	0.465*
No	37 (51.4%)	26 (63.4%)	20 (55.6%)	83 (55.7%)	
Dental Caries Experience					
Yes	22 (30.6%)	8 (19.5%)	12 (33.3%)	42 (28.2%)	0.334*
No	50 (69.4%)	33 (80.5%)	24 (66.7%)	107 (71.8%)	
	Mean (SD) [min, max]	**Mean (SD) [min, max]**	**Mean (SD) [min, max]**	**Mean (SD) [min, max]**	
DFT					
	3.3 (4.5) [0, 16]	2.9 (5.8) [0, 20]	3.8 (5.1) [0, 20]	3.3 (5.0) [0, 20]	0.775**

*Calculated using a Chi-square test

**Calculated using one-way ANOVA

Table 2: Description of Dental Care Utilization by Procedures 15 months after Dental Home Day

	Insurance Type				
	Uninsured	**Public Insurance**	**Private Insurance**	**Total**	**p-value**
	N (%)	**N (%)**	**N (%)**	**N (%)**	
Overall Utilization	55 (76.4%)	33 (80.5%)	34 (94.4%)	122 (81.9%)	0.069*
Recall Utilization					
Any Recall Appointment	34 (47.2%)	24 (58.5%)	29 (80.6%)	87 (58.4%)	0.004*
Any 6 month recall	29 (40.3%)	23 (56.1%)	23 (63.9%)	75 (50.3%)	0.047*
Any 1 year recall	21 (29.2%)	15 (36.6%)	24 (66.7%)	60 (40.3%)	0.001*
Restorative Utilization					
Any Restorative or Sealant appointment	39 (54.2%)	20 (48.8%)	22 (61.1%)	81 (54.4%)	0.555*
Any Restorative appointment	30 (41.7%)	9 (22.0%)	17 (47.2%)	56 (37.6%)	0.045*
Any Sealant appointment	13 (18.1%)	13 (31.7%)	7 (19.4%)	33 (22.2%)	0.220*
Any Oral Sedation	0 (0.0%)	1 (2.4%)	1 (2.8%)	2 (1.3%)	0.265**
Any General Anesthesia	2 (2.8%)	2 (4.9%)	5 (13.9%)	9 (6.0%)	0.073**
Any Missed Appointments	40 (55.6%)	25 (61.0%)	16 (44.4%)	81 (54.4%)	0.334*
	Mean (SD) [min, max]	**Mean (SD) [min, max]**	**Mean (SD) [min, max]**	**Mean (SD) [min, max]**	
Number of Restorations placed	2.9 (3.5) [0, 16]	2.6 (3.4) [0, 14]	3.1 (3.4) [0, 14]	2.8 (3.5) [0, 16]	0.836†
Number of Restorative appointments	0.9 (1.3) [0, 5]	0.4 (0.9) [0, 3]	0.7 (1.0) [0, 4]	0.7 (1.2) [0, 5]	0.072†
Number of Sealant appointments	0.2 (0.4) [0, 2]	0.3 (0.5) [0, 1]	0.2 (0.4) [0, 1]	0.2 (0.4) [0, 2]	0.312†
Number of Recall Exams	0.7 (0.9) [0, 3]	0.93 (0.9) [0, 2]	1.4 (0.8) [0, 3]	0.9 (0.9) [0, 3]	<0.001†
Total number of Visits	1.9 (1.8) [0, 9]	1.7 (1.4) [0, 6]	2.5 (1.8) [0, 9]	2.0 (1.7) [0, 9]	0.080†

*Calculated using a Chi-square test

**Calculated using Fisher's Exact test

†Calculated using one-way ANOVA

Table 3: Association of Select Dental Variables on Dental Care Utilization and Total Visits

	Overall Utilization*				**Number of Total Visits****			
	Unadjusted		**Adjusted**		**Unadjusted**		**Adjusted**	
	Odds Ratio (95% CI)	p-value	Odds Ratio (95% CI)	p-value	Rate ratio (95% CI)	p-value	Rate ratio (95% CI)	p-value
Gender								
Female	reference		reference		reference		reference	
Male	1.29 (0.56-2.99)	0.549	1.24 (0.50-3.11)	0.644	1.14 (0.86-1.50)	0.361	1.17 (0.91-1.51)	0.214
Age		0.071		0.299		0.073		0.791
0-5 years	reference		reference		reference		reference	
6-12 years	3.13 (1.14-8.64)	0.027	2.44 (0.77-7.82)	0.131	1.41 (1.03-1.93)	0.029	1.09 (0.78-1.51)	0.622
13-18 years	2.08 (0.62-6.92)	0.232	1.18 (0.28-5.00)	0.824	1.40 (0.95-2.07)	0.086	0.98 (0.64-1.50)	0.928
DFT		0.016		0.081		<0.001		<0.001
0	reference		reference		reference		reference	
1 or 2	2.25 (0.60-8.47)	0.231	2.49 (0.51-12.00)	0.256	1.62 (1.05-2.52)	0.031	1.71 (1.05-2.76)	0.030
3 or more	6.00 (1.68-21.45)	0.006	4.94 (1.16-20.97)	0.030	2.12 (1.65-2.73)	<0.001	2.086 (1.50-2.82)	<0.001
Insurance Type		0.105		0.048		0.052		0.102
Uninsured	reference		reference		reference		reference	
Public	1.28 (0.49-3.29)	0.615	1.67 (0.58-4.86)	0.344	0.91 (0.65-1.27)	0.580	0.99 (0.72, 1.36)	0.951
Private	5.25 (1.14-24.30)	0.034	6.60 (1.43-30.33)	0.015	1.35 (0.98-1.85)	0.064	1.35 (0.99,1.82)	0.053

*Robust logistic regression

** Robust Poisson regression

Table 4: Association of Select Dental Variables on Recall Utilization and Total Number of Restorations Placed

	Recall Utilization*				**Total Number of Restorations Placed****			
	Unadjusted		**Adjusted**		**Unadjusted**		**Adjusted**	
	Odds Ratio (95% CI)	p-value	Odds Ratio (95% CI)	p-value	Odds Ratio (95% CI)	p-value	Odds Ratio (95% CI)	p-value
Gender								
Female	reference		reference		reference		reference	
Male	1.46 (0.75-2.83)	0.260	1.29 (0.63-2.63)	0.483	1.19 (0.81-1.75)	0.377	1.33 (0.94-1.90)	0.110
Age		0.034		0.397		0.003		0.189
0-5 years	reference		reference		reference		reference	
6-12 years	0.45 (0.21-0.95)	0.037	0.65 (0.28-1.47)	0.298	2.44 (1.33-4.48)	0.004	1.67 (0.89-3.13)	0.107
13-18 years	0.34 (0.13-0.86)	0.023	0.49 (0.16-1.49)	0.208	3.05 (1.59-5.85)	0.001	1.91 (0.95-3.82)	0.068
DFT		0.102		0.318		<0.001		<0.001
0	reference		reference		reference		reference	
1 or 2	0.68 (0.25-1.83)	0.444	0.99 (0.36-2.74)	0.983	2.09 (1.06-4.11)	0.033	1.78 (0.84-3.78)	0.133
More than 2	0.45 (0.22-0.94)	0.033	0.53 (0.22-1.28)	0.159	3.49 (2.21-5.51)	<0.001	2.66 (1.60-4.44)	<0.001
Insurance Type		0.007		0.006		0.829		0.845
Uninsured	reference		reference		reference		reference	
Public	1.58 (0.73-3.43)	0.250	1.39 (0.62-3.14)	0.428	0.92 (0.56-1.49)	0.725	1.06 (0.69-1.63)	0.793
Private	4.63 (1.79-11.96)	0.002	4.79 (1.84-12.42)	0.001	1.08 (0.68-1.72)	0.734	1.13 (0.74-1.71)	0.575

*Robust logistic regression

** Robust Poisson regression