Effect of Training Pediatricians and Family Physicians in Early Childhood Caries Prevention

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Objectives To analyze the effect of postresidency early childhood caries prevention training on physicians' oral health knowledge, confidence, and practice patterns and to identify variations by type of training.

Study design We conducted pre- and post-training surveys of pediatricians and family physicians in Florida. Paired *t* test and repeated-measures ANOVA analyses were used to compare physicians with no oral health training, those with applied in-office training, and those with another type of training on 5 composite measures: fluoride knowledge, nonfluoride oral health knowledge, confidence in advising parents, confidence in conducting oral health screening and caries risk assessment, and frequency in performing recommended oral health practices.

Results The final sample included 229 physicians (162 pediatricians and 67 family physicians). The interaction in the repeated-measures ANOVA between group (training category) and time (pre- and post-training) was significant for the nonfluoride knowledge [$F(2, 225) = 4.1$, $P = .02$] and confidence in screening [$F(2, 224) = 4.1$, $P = .02$] composite measures, lending support for a positive treatment effect of training on these domains. Greater gains were observed among physicians with in-office training compared with those who received another type of training. A statistically significant treatment effect on oral health practices was not detected.

Conclusions Efforts to engage physicians in oral health training and to incorporate applied components in training curricula may improve physicians' oral health knowledge and increase their confidence in conducting oral health screenings and caries risk assessments. Additional research is needed to evaluate the relative costs and benefits of different training modalities on specific oral health practices. *(J Pediatr 2015;166:1055-61)*.

Early childhood caries affects approximately one-fourth of all children and one-third of impoverished children in the US, adversely impacting their oral health, overall health, and quality of life.[1] Early childhood caries can result in pain, increased risk of future caries, missed school days, emergency department visits, and inpatient hospitalizations.[2] Although these detrimental outcomes can be reduced through oral health preventive measures, most preschool aged children do not see a dentist. Only one-third of children <5 years of age enrolled in Medicaid for at least 90 days had a preventive dental visit in 2011.[3] However, preschool aged children are more likely to visit a medical provider than a dentist.[4,5] As a result, 46 state Medicaid programs reimburse medical primary care providers (PCPs) for oral health preventive services.

The US Preventive Services Task Force (USPSTF) released updated recommendations regarding dental caries prevention in children ages 0-5 years by nondental PCPs.[6] The USPSTF recommends that PCPs apply fluoride varnish starting when the primary teeth erupt and prescribe fluoride supplementation beginning at age 6 months for children with inadequate water fluoridation. In addition, the USPSTF found insufficient evidence to make recommendations for or against routine oral screening for caries by PCPs. Collectively, these recommendations indicate that nondental PCPs can play an important role in dental caries prevention among preschool aged children. Existing research indicates that Medicaid PCP reimbursement has been effective in increasing access to early childhood caries preventive services; however, these same studies note disparities in access and opportunities for further improvement.[7-10]

Critical to the success of these PCP early childhood caries prevention programs is widespread participation by PCPs. In a national survey of pediatricians, lack of oral health training was cited most frequently as a moderate to significant barrier to providing preventive oral health services.[11] But the effect of training on physicians' likelihood of providing oral health services is not well established. Several studies have been unable to detect statistically significant associations or obtained mixed results.[11-13] Positive associations between physicians' confidence and their likelihood of performing oral health practices have been identified,[12-14] and there is limited evidence that oral health training indirectly promotes adoption of oral health practices by increasing physicians' confidence.[12] However, these studies were cross-sectional and did not conduct pre- and post-training evaluations.

AAP	American Academy of Pediatrics
CME	Continuing medical education
PCP	Primary care provider
USPSTF	US Preventive Services Task Force

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Pre- and post-training evaluations in medical residency programs found oral health training was associated with improvements in physicians' knowledge, confidence, and practices.[15,16] Less is known about the effectiveness of postresidency training among the broader population of physicians. One study that randomized physicians to 1 of 3 forms of continuing medical education (CME) intervention did not find variations in rates of preventive dental service provision during well-child visits by type of training.[17] Because the services were newly reimbursed, changes in service provision before and after the trainings were not examined.

The purpose of this study was to test whether PCP oral health training was associated with improved knowledge, confidence, and frequency in performing oral health practices. Existing research suggests that applied training may be more effective in changing physician behavior compared with more passive educational interventions.[15,18] Therefore, we also investigated whether there were differences based on the type of training received.

Methods

In April 2008, Florida Medicaid began reimbursing PCPs for providing early childhood caries preventive services for children ages 6-42 months. The reimbursed procedure includes an oral evaluation, caries risk assessment, parent counseling, fluoride varnish application, and referral to a dentist. Training is not required for reimbursement, but it is available. Prior to implementing the training program, which is available to all PCPs eligible for reimbursement, a survey of pediatricians and family physicians in Florida was conducted March-June 2008 to assess their oral health knowledge, confidence, and practices. Detailed information about the survey instrument, methods, and findings were previously reported.[12] The study populations were identified through the Florida Academy of Family Physicians and the Florida Pediatric Society. The final sample for the pretraining survey was 421 respondents. In-office trainings began in July 2008 and are ongoing.

The trainings were conducted through the Gator Kids Healthy Smiles program by 15 dental hygienists who received day-long training from a dental hygienist involved in the North Carolina Into the Mouths of Babes Program.[19] Pediatrician and family physician medical offices, county health departments, and community health centers throughout Florida were notified about the training availability, which was offered free of charge but without CME credit. When a medical office requested training, a dental hygienist contacted the office and arranged a visit. The offices were asked to schedule 1-2 patients for hands-on demonstration. The trainings lasted approximately 1 hour and were scheduled at times convenient for the office. The dental hygienists all used the same curriculum including a PowerPoint presentation and manual, which covered the etiology of dental caries, mechanism of action of topical fluoride, oral examination, caries risk assessment, parental education about caries prevention, dental home, referral to a dentist, and reimbursement procedures. The dental hygienist demonstrated the procedures on a child, and one of the trainees then practiced the procedures.

Post-training surveys were conducted May-August 2010, targeting the original 421 survey respondents to conduct a paired pre-post survey analysis. A modified Dillman method was used for survey administration. The survey packets were delivered by US mail. Reminder postcards on bright yellow cardstock were mailed 2 weeks later, a fax reminder was sent at 1 month, and the entire packet was re-sent by FedEx to physicians who had not responded 2 months after the original mailing.

The responses for each survey were entered twice by 2 research assistants. The 2 data files were compared using Stata, Release 12 (StataCorp, College Station, Texas).[20] Discrepancies were corrected against the original questionnaire. Unique respondent identifiers were assigned in the pretraining sample and coded on the surveys to link the pre- and post-training survey responses. This study was approved by our university's Institutional Review Board.

The survey instrument was adapted from instruments used in prior studies.[14,21] Three main areas were addressed. First, pediatric oral health knowledge was evaluated. Fluoride-specific and nonfluoride knowledge were assessed separately because guidance related to fluoride usage has changed over time.[22] A second series of questions assessed physicians' confidence in: (1) providing parental counseling; and (2) performing pediatric caries risk assessment and oral health screening. Finally, physicians were asked to report the frequency with which they perform 8 oral health services for children <4 years old. The oral health practices included those used in prior studies and reflected recommendations of the American Academy of Pediatrics (AAP) and American Academy of Pediatric Dentistry at the time the survey was conducted.[23,24]

The post-training questionnaire also asked physicians about training in the previous 2 years, covering the period from when trainings began to the time of survey administration, and the type of training received: (1) group lecture; (2) in-office training (eg, Gator Kids Healthy Smiles); (3) professional conference; (4) online (eg, through AAP); or (5) other (with free-text description). These categories were not mutually exclusive; a physician could select more than one type of training if applicable. Physician demographic information had been collected in the pretraining survey. Questions about application of fluoride varnish were not asked on the pretraining survey because, at that time, this service was not reimbursed nor included among the AAP recommendations. However, the post-training survey asked physicians whether they provided oral evaluation and fluoride varnish application for their Medicaid-enrolled patients <4 years old with response options of yes, no, or not applicable.

Data Analyses

Our hypotheses were that physicians who received oral health training would demonstrate greater gains in oral health

knowledge and confidence and be more likely to perform oral health practices compared with those with who received no training and that physicians who received in-office training would demonstrate greater gains in confidence and be more likely to perform oral health practices compared with those who received another type of training. To test these hypotheses, we examined differences in knowledge, confidence, and practices among physicians by the following categories based on their self-reported training during the prior 2 years in the questionnaire: (1) in-office training, which included physicians who reported receiving only in-office training and physicians who reported in-office training in addition to other forms of training; (2) another type of training (eg, group lecture, professional conference, or online) and who did not report in-office training; or (3) not reporting any training.

We first evaluated whether there were statistically significant differences ($P < .05$) among the 3 groups on the post-training survey for each question within the knowledge, confidence, and practices domains using χ^2 tests. However, our primary interest was in changes in the physicians' pre- and post-training survey responses. To evaluate changes, we grouped individual survey items into the same 5 composite measures used in prior analyses: 2 knowledge measures, 2 confidence measures, and 1 practice measure.[12] The 2 knowledge measures were fluoride and nonfluoride oral health knowledge (4 items in each composite) and were calculated as the percentage of correct responses in each category. The 2 confidence measures were confidence in advising parents and confidence in performing oral health screening and risk assessment (5 items in each composite). The confidence composites were summated scales created by adding the values of the component question responses (1 = not confident, 2 = somewhat confident, and 3 = confident). Scale reliability was confirmed using Cronbach alpha: $\alpha = .82$ for the confidence in advising scale in the pre- and post-training surveys; and $\alpha = .87$ (pre-training) and $\alpha = .89$ (post-training) for the confidence in screening scale. We also constructed an oral health practices summated scale ($\alpha = .75$ pre-training; $\alpha = .77$ post-training) of the responses to the questions inquiring about the frequency with which physicians engaged in each of 8 oral health practices (frequently = 4 points, occasionally = 3 points, rarely = 2 points, and never = 1 point). Each composite measure was linearly transformed to a 0-100 scale for ease of interpretation.

For each composite measure, we used paired *t* test and Wilcoxon signed ranks tests as appropriate to evaluate statistically significant differences between respondents' responses in the pre- and post-training surveys. For the paired *t* test, we evaluated the 1-tailed *P* values to test the hypothesis that respondents' post-training survey responses would be higher than their pretraining survey responses. The pre- and post-training response comparisons were stratified by the 3 training categories (no training, in-office training, or another type of training). However, the paired *t* test does not take into account between-group (ie, between training categories) comparisons. To evaluate that dimension, we conducted repeated-measures ANOVA with between-subjects factors (mutually exclusive training categories) for each of the 5 composite measures, where the within-subjects factor was time (survey responses at the 2 different time points for each individual). The inclusion of an interaction term between the within-subjects and between-subjects factors allows one to evaluate whether the between-subjects factors are associated with different patterns of change in the outcome over time.[25,26] Therefore, we included an interaction term between the 3-category training variable and the 2 time periods to evaluate whether changes in the composite measures between the 2 time periods varied by training group. A significant interaction lends support for a treatment effect of training. Each model was evaluated for violations of sphericity, a critical assumption for repeated measures ANOVA, and no violations were detected.

Results

We attempted re-contact with the original 421 survey respondents (157 family physicians and 264 pediatricians). Twenty-nine responding physicians were ineligible (moved out of state, retired, or no longer see children 0-4 years old), and one was deceased. We received 230 questionnaires from eligible respondents, one of which did not meet the standard requirement of being at least 50% complete and was excluded. Thus, the final sample included 229 physicians (162 pediatricians and 67 family physicians). Ten questionnaires were undeliverable and 151 were unreturned; thus, we could not confirm eligibility for these 161 physicians. To calculate response rates, we followed the conservative methodology of the American Association of Public Opinion Research Response Rate 4, which applies the ratio of eligible to ineligible cases for physicians with known eligibility status to physicians with unknown status.[27] The resulting estimate of the number of eligible physicians was 374 [(231/260)*421], with corresponding response rates of 61% for the overall sample (229/374), 64% for pediatricians, and 56% for family physicians. Compared with nonrespondents, respondents were more likely to be pediatricians (vs family physicians), somewhat older (48 years vs 45 years), and see more infants and toddlers in a week (49 vs 38; **Table I**).

Relationship between Type of Training and Post-Training Survey Responses

Among the 229 respondents, 54 reported having in-office training, 70 reported having another type of training, and 105 did not report any training. There were statistically significant differences between the 3 training categories for one-half of the knowledge questions, all of the confidence areas, and all but one of the oral health practices (**Table II**; available at www.jpeds.com). The knowledge questions with the largest differences between the training categories were the percentage of physicians who correctly agreed that "white spots on the teeth may indicate early dental decay" (74% of those with in-office training, 58% with another training, and 41% without training) and the percentage

Table I. Comparison of respondents and nonrespondents

	Respondent		Nonrespondent		
	N	Row %	N	Row %	*P* value
Physician type					<.001
Pediatrician	162	61.6%	101	38.4%	
Family physician	67	42.7%	90	57.3%	
Sex					.083
Female	108	50.2%	107	49.8%	
Male	118	58.7%	83	41.3%	
Race/ethnicity					.279
Non-Hispanic white	157	56.9%	119	43.1%	
Non-Hispanic black	8	36.4%	14	63.6%	
Hispanic	35	51.5%	33	48.5%	
Other	26	53.1%	23	46.9%	
Geographic location					.098
Urban	212	53.5%	184	46.5%	
Rural	17	70.8%	7	29.2%	
	Respondent		**Nonrespondent**		
	Mean	**SD**	**Mean**	**SD**	***P* value**
Age (y)	48.2	10.5	45.2	10.3	.004
Infants/toddlers per wk	48.7	42.0	37.5	39.1	.007

who knew that fluoride supplementation was not necessary for a "3-month-old healthy, formula-fed baby living in a nonfluoridated area" (59% in-office training, 46% another training, and 32% without training). The knowledge question with the lowest performance overall was "dental sealants are usually applied to a child's primary teeth" with only 29% of physicians correctly disagreeing with this statement.

There were significant differences by training category in physicians' confidence in advising parents and in evaluating children for decay or their risk of decay. Although the percentage of physicians reporting feeling "very confident" was consistently higher for those with in-office training compared with those with another type of training, the largest differences were observed between any training (in-office or another type of training) and no training. The percentage of physicians who reported feeling "very confident" was in most cases at least 20 percentage points higher for those who had received any training compared with those who reported no training. The confidence areas for which there were the greatest differences between those with in-office training compared with another form of training were assessing teeth for decay (15 percentage point difference) and evaluating risk of decay (9 percentage point difference). The area in which physicians reported feeling least confident was "identifying other signs of oral pathology."

Compared with those with no training, physicians with any training (in-office or another type of training) were more likely to report engaging in 8 recommended oral health practices. Less variation in practice patterns between those with in-office training and those with another type of training was observed compared with the knowledge and confidence domains. Six of the 8 practices were conducted frequently by more than one-half of respondents (range 56%-89%); however, there were 2 practices performed frequently by fewer than 30% of respondents: counseling parents on the importance of going to a dentist before the child is 1-year-old and inquiring about the parent's dental health.

Evaluation of Changes in Knowledge, Confidence, and Practice Patterns before and after Training

Table III presents the results of the pre-post comparisons for the overall sample and within each training category for the 5 composite measures using paired *t* tests. No statistically significant differences were detected for the fluoride knowledge or confidence in advising composite measures. There were statistically significant differences between the 2 time periods for physicians with in-office training and no-training (but not another type of training) for nonfluoride knowledge; however, physicians with another form of training had the highest pretraining knowledge scores. There also were statistically significant differences between the 2 time periods for physicians with in-office training and another type of training (but not for those with no training) for the confidence in screening and oral health practice scales. For the nonfluoride knowledge and confidence in screening composites, the percentage increase was greatest among physicians with in-office training.

Table IV presents the results of the repeated measures ANOVA. Consistent with the results of the paired *t* tests, the within-subjects factor of time was significant for the nonfluoride knowledge, confidence in screening, and oral health practices composites indicating statistically significant increases in the scores. However, it is the between-subjects group (3-category training variable) by time (survey responses before and after training) interaction that indicates whether the changes in the scores over time varied by training category. The interaction was significant for the nonfluoride knowledge [$F(2, 225) = 4.1$,

Table III. Comparison of pre- and post-training survey results stratified by type of training

	Full sample			No training			In office			Other		
	Time 1	Time 2	*P* value	Time 1	Time 2	*P* value	Time 1	Time 2	*P* value	Time 1	Time 2	*P* value
Nonfluoride knowledge	59.3	64.1	<.01	52.6	59.3	<.01	62.5	71.8	<.01	67.0	65.6	.67
Fluoride knowledge	57.1	59.2	.28	54.6	56.5	.62	61.1	65.2	.19	57.6	58.5	.86
Confidence in advising	76.9	78.4	.68	69.7	70.2	.52	84.4	86.7	.53	81.9	84.5	.26
Confidence in screening	65.8	69.0	.03	62.4	61.3	.47	69.6	77.6	<.01	68.0	73.9	<.01
Oral health practices	76.1	78.5	<.01	71.2	72.3	.48	81.7	85.3	.04	78.9	82.5	<.01

Table IV. Repeated measures ANOVA

	Sum of squares	df	F	*P* value
Nonfluoride knowledge				
Between subjects				
Group	15 938.0	2	12.3	<.01
Error	146 456.3	226		
Within subjects				
Time	1844.8	1	6.5	.01
Time × group	2313.2	2	4.1	.02
Error	63 783.3	225		
Fluoride knowledge				
Between subjects				
Group	4406.8	2	6.1	<.01
Error	81 459.5	226		
Within subjects				
Time	427.0	1	2.2	.14
Time × group	316.8	2	0.8	.45
Error	43 573.4	223		
Confidence - advising				
Between subjects				
Group	17 260.7	2	11.2	<.01
Error	173 581.2	226		
Within subjects				
Time	384.7	1	2.0	.16
Time × group	174.0	2	0.5	.64
Error	42 402.6	221		
Confidence - screening				
Between subjects				
Group	7303.3	2	3.7	.03
Error	220 617.9	226		
Within subjects				
Time	2142.4	1	10.3	<.01
Time × group	1703.3	2	4.1	.02
Error	46 454.8	224		
Oral health practices				
Between subjects				
Group	7885.3	2	9.0	<.01
Error	99 011.6	225		
Within subjects				
Time	840.6	1	12.5	<.01
Time × group	182.6	2	1.4	.26
Error	14 675.8	219		

$P = .02$] and confidence in screening [$F(2, 224) = 4.1$, $P = .02$] composite measures, lending support for a treatment effect of training for these 2 domains. Despite the statistically significant within-subjects finding for the oral health practices composite, we did not detect a statistically significant group by time interaction.

Application of Fluoride Varnish

As indicated previously, pre-post training comparisons of fluoride varnish application could not be conducted. However, in the post-training survey, we found statistically significant differences in the percentage of physicians who reported applying fluoride varnish for Medicaid patients <4 years of age by type of training. Four percent of physicians who reported no training, 14% who reported another type of training, and 81% who reported in-office training indicated that they apply fluoride varnish ($\chi^2 = 98.63$, $P < .01$).

Discussion

Prior studies of medical residency programs found oral health training to be positively associated with improvements in physicians' knowledge, confidence, and practices.[15,16] This study extended earlier research by evaluating the effect of postresidency oral health training and variations by the type of training. Collectively, our pre-post training survey analyses provide support for the benefits of training in general and applied in-office training to improve confidence in conducting dental caries risk assessment and oral health screening and of in-office training on improving nonfluoride oral health knowledge. Evidence regarding the benefits of training on the likelihood of performing recommended oral health practices was mixed. Unlike measures of fluoride knowledge and confidence in advising, physicians with training demonstrated pre-post improvement in the oral health practices composite in the paired *t* test analyses. However, the repeated measures ANOVA failed to detect a statistically significant treatment effect.

Because fluoride varnish application was not reimbursed in Florida when we began the study, the pretraining survey did not ask whether physicians provided this service. Therefore, we were unable to assess pre-post training changes for this practice. A national survey of pediatricians conducted by Lewis et al in 2008, when 18 state Medicaid programs reimbursed physicians for fluoride varnish and 9 more implemented reimbursement (including Florida), found that only 3.8% applied fluoride varnish for their 0- to 3-year-old patients.[11] Therefore, it is reasonable to assume that fluoride varnish application by Florida physicians prior to reimbursement was minimal. Our post-training survey found that only 4% of surveyed physicians in Florida who did not report any oral health training applied fluoride varnish for their Medicaid patients <4 years old, similar to the findings of the 2008 national survey; however, 81% of those who had received in-office training applied fluoride varnish. This finding is consistent with the conclusion of Lewis et al that physicians' lack of confidence in applying fluoride varnish contributes to a decreased proclivity to perform this service.[11]

Our findings also are consistent with our pretraining survey results in which we found that receiving oral health training in medical school, residency, fellowship, or through CME was not positively associated with fluoride-related knowledge, but was associated with nonfluoride knowledge.[12] That study also found large, positive associations between oral health training and physician confidence in advising parents and conducting screening and risk assessment. Physicians' confidence was positively associated with the frequency with which they performed preventive oral health practices, which suggested a positive indirect effect of training on physician provision of oral health services. The implications of these earlier findings also led us to hypothesize that applied training, such as in-office training sessions, may be more effective in influencing physician behavior compared with more passive training curricula. Applied training allows for observation or practice in performing recommended practices, which may instill greater confidence in one's ability to independently provide preventive oral health services. The present study provides support for a beneficial effect of applied training.

Engagement by pediatricians and other PCPs in providing early childhood caries preventive services has been effective in increasing patient receipt of these services and in decreasing caries-related dental treatments.[7-10,28] However, the national survey of pediatricians found that only about one-half reported examining the teeth of the majority of their 0- to 3-year-old patients.[11] Lack of training was the barrier reported most frequently, with only 36% of respondents reporting formal oral health education.[11] Thus, strategies to increase oral health training of physicians are needed.

There are important limitations to consider when interpreting our results. First, because the training program was designed to be accessible to all PCPs, physicians were not randomized to treatment and control groups, resulting in the potential for selection bias. For example, those physicians with greater interest in and commitment to learn about pediatric oral health may be more willing to schedule in-office trainings. Second, physician self-reported practice behaviors could not be directly validated and may not translate into observed increases in preventive dental service utilization among the children who are the intended ultimate beneficiaries of the training. Third, our study represents physicians from 1 state. However, our findings of positive effects of training on confidence is consistent with other research[12,16,29] as is the finding that more applied training may be associated with greater improvements compared with more passive approaches to learning.[15,18] Finally, our study did not examine the cost-effectiveness of potentially more resource-intensive in-office trainings relative to other forms of training to evaluate whether more resource-intensive approaches are associated with better outcomes.

The results of this study suggest that efforts to engage physicians in oral health training and to incorporate applied components in training curricula will promote physicians' confidence in and likelihood of conducting preventive oral health care practices. Additional research on the effect of specific physician-performed oral health practices on oral health outcomes is needed to prioritize evidence-based practices in training programs. Additional research to further evaluate which training modalities are most effective in changing different types of oral health practice behaviors also is merited to more effectively tailor the delivery of training programs to the specific health behaviors targeted. Research that identifies the strategies that are most effective in increasing physician participation in oral health training programs also is warranted. Finally, further research should evaluate the extent to which physician self-reported practice behaviors translate into increased utilization of preventive oral health services among children and improved oral health outcomes. ■

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Table II. Post-training survey results comparing physicians by type of training

Oral health knowledge	Responding correctly: Total No.	Total %	No training No.	No training %	In office No.	In office %	Other No.	Other %	*P* value
Nonfluoride questions (correct response)									
Only bottle-fed children get tooth decay. (disagree)	224	98.3%	102	97.1%	53	98.2%	69	100.0%	.37
Dental sealants are usually applied to primary teeth. (disagree)	65	28.5%	31	29.5%	15	27.8%	19	27.5%	.95
The bacteria that cause dental decay can be transmitted from mother to child. (agree)	173	75.9%	73	69.5%	47	87.0%	53	76.8%	.04
White spots on the teeth may indicate early dental decay. (agree)	123	54.0%	43	41.0%	40	74.1%	40	58.0%	<.01
Fluoride questions (correct response)									
A 3-month-old healthy, formula-fed baby living in nonfluoridated area should receive fluoride supplementation. (disagree)	98	43.0%	34	32.4%	32	59.3%	32	46.4%	<.01
Fluoride prevents tooth decay when applied topically to the surfaces of the teeth. (agree)	211	93.0%	94	89.5%	54	100.0%	63	92.7%	.05
Fluoride prevents tooth decay when swallowed while the teeth are forming. (agree)	160	70.5%	76	73.1%	38	70.4%	46	66.7%	.66
If fluoridated toothpaste is used in infants and toddlers, a pea-sized amount or less should be used. (agree)	204	89.5%	92	87.6%	52	96.3%	60	87.0%	.17

Confidence	Responding "very confident" (vs "somewhat confident" or "not confident"): Total No.	Total %	No training No.	No training %	In office No.	In office %	Other No.	Other %	*P* value
Advising parents									
How confident do you feel in advising parents about									
Their child's oral hygiene	147	64.8%	51	49.5%	43	79.6%	53	75.7%	<.01
Water fluoridation	139	61.0%	51	49.0%	40	74.1%	48	68.6%	<.01
Dietary recommendations to prevent tooth decay	148	64.9%	51	49.0%	43	79.6%	54	77.1%	<.01
Fluoride supplements during infancy/childhood	131	58.0%	46	44.2%	37	71.2%	48	68.6%	<.01
Dental visits during infancy/childhood	143	63.0%	54	51.9%	41	77.4%	48	68.6%	<.01
Screening and risk assessment									
How confident do you feel in									
Assessing teeth of infants and toddlers for tooth decay	98	43.0%	33	31.7%	33	61.1%	32	45.7%	<.01
Identifying tooth decay in early childhood	98	43.0%	32	30.8%	31	57.4%	35	50.0%	<.01
Identifying other signs of oral pathology	79	34.7%	27	26.0%	24	44.4%	28	40.0%	.04
Evaluating risk of tooth decay in infants and toddlers	105	46.1%	31	29.8%	35	64.8%	39	55.7%	<.01
Deciding if a child needs referral to a dentist	136	59.7%	50	48.1%	38	70.4%	48	68.6%	<.01

Oral health practices: How frequently do you	Responding "frequently" (vs occasionally, rarely, never): Total No.	Total %	No training No.	No training %	In-office No.	In-office %	Other No.	Other %	*P* value
Assess fluoride intake	126	56.3%	48	47.5%	33	62.3%	45	64.3%	.06
Counsel parents on tooth brushing	199	88.8%	80	78.4%	51	98.1%	68	97.1%	<.01
Discuss fluoride toothpaste with parents	161	71.6%	56	54.9%	47	88.7%	58	82.9%	<.01
Inquire whether child takes bottle to bed	188	83.6%	77	75.5%	49	92.5%	62	88.6%	.01
Counsel parents on going to dentist before 1 y.	54	24.0%	16	15.7%	19	35.9%	19	27.1%	.02
Examine teeth for dental decay	197	87.6%	81	79.4%	49	92.5%	67	95.7%	<.01
Inquire about parent's dental health	60	26.7%	19	18.6%	20	37.7%	21	30.0%	.03
Assess potential for developing decay	139	61.8%	52	51.0%	38	71.7%	49	70.0%	.01