

Critical Issues in Dental Hygiene

Addressing Early Preventive Oral Health Care among Young Children: A Pilot Evaluation of the Baby Oral Health Program (bOHP) among Dental Professionals

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Introduction

Dental caries is the most common chronic disease in childhood and represents a significant public health concern.¹ Early childhood caries (ECC) is defined as affecting the dentition of children <72 months old.² Disparities in ECC are evident, and rates are associated with the social determinants of health (i.e. family income, immigrant status, areas of social deprivation, etc.).¹⁻³

The period from preconception to approximately age 3 is a critical window for caries prevention efforts.⁴ Children can acquire caries-related bacteria from their primary caregivers during the first 3 years of life, and it becomes more difficult to change the oral environment and prevent dental disease without significant professional interventions after this window of infectivity closes. Thus, the very early childhood period is a critical time for early identification of risk factors and early intervention to help change the trajectory of a child's oral health.

Many professional associations involved in pediatric care advocate early oral health visits as a public health strategy to promote population oral health and to reduce the prevalence of ECC. The Canadian and American Academies of Pediatric Dentistry and Pediatrics recommend that children establish a dental home by age one.⁵⁻⁷ The American Academy of Pediatric Dentistry defines a dental home as "the ongoing re-

lationship 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. Establishment of

Abstract

Purpose: Many communities lack dental professionals with the knowledge and behavioral skills needed to deliver care to young children (<3 years). This study aimed to examine the impact of an intervention (the Baby Oral Health Program (bHOP)) on dental providers' knowledge, values, confidence and practice behaviors regarding preventive oral health care to young children (<3 years), and assess the feasibility and satisfaction of the bOHP among dental providers in a Canadian community setting.

Methods: A quasi-experimental design was employed, with 24 intervention (4.5 hour workshop, and booster session 1 month following) and 18 control group participants completing pre- and post-surveys.

Results: A significant group interaction effect emerged for value and knowledge ($p < 0.05$), with participants in the intervention group demonstrating significantly higher baseline to post-intervention change scores. No significant group differences were found for confidence and practice behaviors ($p > 0.05$). Mean scores for perceived workshop usefulness and perceived influence on practice were high.

Conclusion: Findings suggest that bOHP is effective in increasing dental professionals' knowledge and values about the importance of preventive oral health among young children. However, consideration to provider's stage of readiness to change and more systems-based approaches to enhancing early oral health interventions should be assessed.

Keywords: prevention, pediatric dentistry, behavior, public health dentistry

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a dental home begins no later than 12 months of age and includes referral to dental specialists when appropriate.⁸ Research conducted in the U.S. has demonstrated that providing dentists with training in the management of very young children and in family-centered dental care can increase dentists' confidence and their willingness to provide services.^{9,10} However, little research has been conducted regarding early oral health visits in Canada and this study aims to explore this translation of research to practice gap.

The Baby Oral Health Program (bOHP) was developed in North Carolina and has been implemented in other states in the U.S. Its mission is "to educate dental health care providers on the principles of infant and toddler oral health in order to equip them with the necessary tools to be comfortable and competent at providing preventive oral health services for young children."^{11,12}

The purpose of this study was to conduct a pilot evaluation of the bOHP program in a Canadian community setting. The specific objectives were to examine the impact of this intervention on dental providers' practice knowledge, values, confidence and practice behaviors regarding providing oral health care to young children (<3 years), and to assess the feasibility and satisfaction of the bOHP among dental providers in a community setting. This study employed a mixed methodology prospective quasi-experimental design with a 1, 3 and 6 month follow-up. This paper focuses on findings between the pre- and post-test. Findings for the follow-up assessments (3 and 6 months) are presented for descriptive purposes only.

Methods and Materials

Sample

A master list of dental practices in a southwestern community in Ontario (n=61) and their corresponding contact information was obtained from the Royal College of Dentist Surgeons of Ontario (RCDSO). All registered practices received, via postal mail, an invitation to attend the intervention workshop titled "Family-centered dental care: Treating infants & toddlers in your practice." Follow-up telephone calls were made 1 week after the invitations were mailed out, and a second invitation was either hand delivered, faxed or emailed to the offices that indicated they had not received the original mailed invitation.

Control participants were recruited by comparing the master list of dental practices originally obtained from the RCDSO with the attendance list from the workshop to identify those dental practices that did

not participate in the intervention. A convenience sample of those remaining dental practices were sent a letter via postal mail, followed by a telephone call 1 week later explaining the study and inviting them to participate. Researchers randomly sampled practices until the sample size was approximate to the intervention group. All dental professionals participating in patient care (i.e., dentists; dental hygienists; dental assistants; etc.) were invited to attend the workshop and all participants (intervention and control groups) received a \$15 gift card as a token of appreciation for their participation in the study.

Intervention

The intervention consisted of a 1 day workshop (4.5 hours) and a take-home personal bOHP kit. The kit consisted of a binder containing information and tools (i.e., DVD, flip chart, clinical and supplemental forms) intended to serve as an educational resource when discussing oral health with parents/caregivers of young children. The presenter of the workshop was a faculty member from the Department of Pediatric Dentistry at the University of North Carolina-Chapel Hill who is also the director of bOHP. Topics covered included:

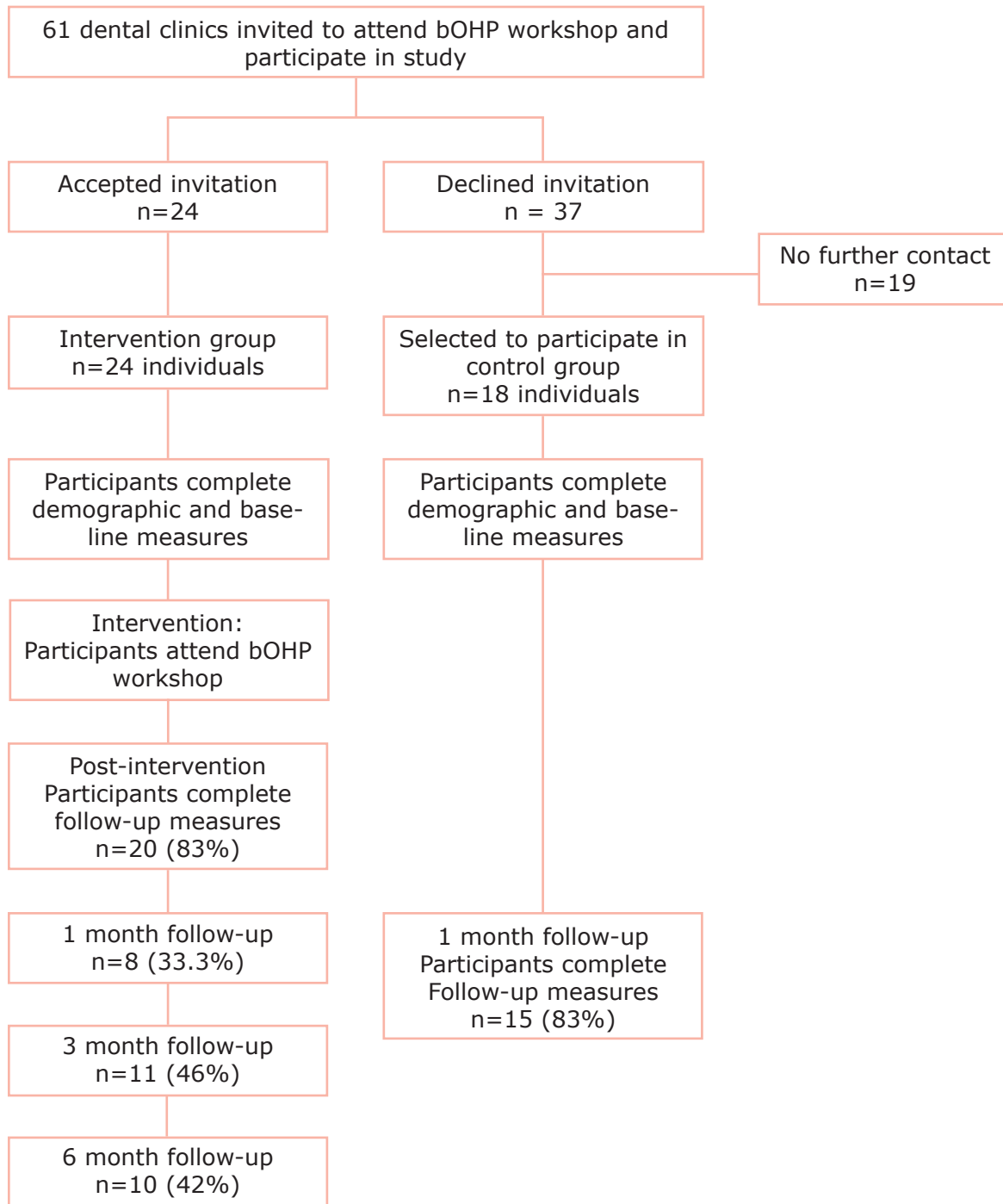
- Background on policies and guidelines of early childhood oral health
- Principles of pediatric preventive care for infants and toddlers including strategies for caregiver interviewing, anticipatory guidance and clinical examination
- Child development in the delivery of preventive oral health services to infants and toddlers
- The promotion of practice through a family centered approach

Participants were eligible to receive continuing education credits (CE) for attending the workshop. In addition, at 1 month post-intervention, each participant completed the follow-up survey and then received a booster session which consisted of a visit from a dental program member who reviewed the health information presented at the workshop and discussed any questions or issues that may have arisen in regards to each practices' progress in implementing the bOHP.

Procedure

After collecting written informed consent, participants in the intervention group completed a pre- and post-survey immediately prior and after the workshop, and follow-up surveys at 1, 3 and 6 months post-intervention. Participants in the control group completed the baseline measures consisting

Figure 1: Flow Diagram of Design and Procedure



of demographic items and outcome measures upon entry into the study and a follow-up survey at 1 month. The overall design of the study can be seen in Figure 1. Research ethics board approval was obtained prior to commencing the study.

Survey Instrument

The survey instrument was adapted from the authors of the bOHP who previously evaluated the

intervention among dental students.¹² The baseline and follow-up questionnaires were pilot tested by 6 general dentists prior to dissemination and modifications were made based on their feedback. The survey included demographic items and the following baseline measures to measure change and intervention effectiveness: knowledge, values, confidence and practice behaviors (Table I). An item to assess participants’ stages of change was used to classify participants as currently caring for infants

Table I: Selected Measures From Survey Instrumentation

Construct	Example Questions	Response Category
Demographics	Please describe yourself: a. Role b. Gender How long have you been in dental practice?	Dental Assistant; Dental Hygienist; Dentist; Other (please specify) Male; Female ≤2 years, 3 to 5 years, 6 to 10 years, 11 to 19 years, ≥20 years
Stages of Change	Do you care for infants and toddlers in your practice?" If you answered NO to [the above question], are you thinking of caring for infants' and toddlers' oral health in your practice?"	Yes; No Yes (contemplation) or No/Not Sure (pre-contemplation).
Practice Behaviors	How often do you provide preventive care to 0 to 2 year olds?	4-point scale from 1 (never) to 4 (often)
Value	On a scale of 1 to 10, how important do you feel it is for general dentists to provide preventive care to infants and toddlers (0-3 years)?	10-point scale from 1 (not important) to 10 (very important)
Confidence	How comfortable are you in: a. Performing an infant or toddler oral health examination? b. Dealing with a crying infant or toddler c. Diagnosing dental caries in infants or toddlers d. Discussing proper infant or toddler feeding practices with infants or toddlers	5-point scale from 1 (very uncomfortable) to 5 (very comfortable) Reliability was adequate at baseline ($\alpha=0.81$) and follow-up ($\alpha=0.87$).
Knowledge	Please indicate your level of agreement with the following statements regarding dental care for infants and toddlers: a. Only bottle-fed children are at risk of early childhood caries (False) b. Pediatric patients are recommended to receive the first dental exam by three years (False) c. Fluoride varnish is safe and effective and is recommended for infants and toddlers (True)	1 (strongly disagree) to 5 (strongly agree) True/False
Barriers	Please provide 3 barriers to providing dental care for infants and toddlers.	Open-ended
Perceived usefulness of workshop	How useful did you find this workshop?	10-point scale from 1 (not useful) to 10 (very useful)
Perceived influence on practice behaviors	To what extent do you anticipate that the workshop will influence your practice behaviors?	10-point scale from 1 (no influence) to 10 (strong influence)

and toddlers in practice (action) or not currently caring for infants and toddlers in practice (pre-contemplation/contemplation).¹³ Participants also completed 2 measures assessing the workshop's usefulness and the extent to which they expected the workshop to influence their practice behaviors. Two

open-ended written questions included an item on barriers to providing dental care for infants and toddlers and an item on soliciting general feedback on this topic (pre- and post-survey) and the workshop (post-survey only).

Table II: Demographic Characteristics For Control And Intervention Groups

Variable	Control (n=18)	Intervention (n=24)	Statistic	p-level
Position	-	-	$\chi^2(3, N= 42) = 4.66$	0.19
Dental Assistant	9 (40.0%)	10 (41.7%)	-	-
Dental Hygienist	4 (22.2%)	10 (41.7%)	-	-
Dentist	1 (5.6%)	3 (12.5%)	-	-
Other	4 (22.2%)	1 (4.2%)	-	-
Gender	-	-	$\chi^2(1, N= 42) = 1.57$	0.21
Male	0 (0.0%)	2 (8.3%)	-	-
Female	18 (100.0%)	22 (91.7%)	-	-
Years in Dental Practice	-	-	$\chi^2(4, N= 42) = 3.27$	0.51
Under 2 years	0 (0.0%)	1 (4.2%)	-	-
3-5 years	3 (16.7%)	7 (29.2%)	-	-
6-10 years	1 (5.6%)	3 (12.5%)	-	-
11-19 years	6 (33.3%)	4 (16.7%)	-	-
20 or more years	8 (44.4%)	9 (37.5%)	-	-
Currently care for infants and toddlers in practice	-	-	$\chi^2(1, N= 42) = 2.65$	0.11
Yes (Action)	12 (66.7%)	21 (87.5%)	-	-
No	6 (33.3%)	3 (12.5%)	-	-
Contemplation	1 (17%)	0	-	-
Pre-contemplation	5 (83%)	2 (67%)	-	-
Missing	0	1 (33%)	-	-
Access to pediatric dentist (SD)	7.11 (3.27)	7.00 (3.06)	$t(40)=0.11$	0.91

Analyses

Frequencies, chi-square and independent-samples t-tests were conducted to examine group differences in socio-demographic and other practice characteristics. For the quantitative data, each construct was represented by a mean score calculated by summing the items and then dividing by the total number of items. Change scores were computed for practice behaviors, knowledge, values and confidence by subtracting baseline values from post-intervention scores. Independent t-tests were then used to examine whether change scores differed between the intervention and control groups. This paper focuses on findings between the pre- and post-test. Findings for the follow-up assessments (3 and 6 months) are presented for descriptive purposes only. All quantitative analyses were conducted using PASW Statistics 18, Release Version 18.0 (©SPSS, Inc., 2009, Chicago, Ill).

Qualitative data from the open-response items were independently analyzed by 2 researchers. Us-

ing an inductive and grounded-theory approach, open, axial and selective coding was employed to discover themes. Two researchers met to compare codes and any discrepancies were discussed. Only minor differences in the label (name) of the codes were found. Illustrative quotations from the responses were documented to provide examples and further context to the themes that emerged.

Results

Participant Demographics

The final sample consisted of 42 dental professionals. The majority were female (n=40, 95%) worked as dental assistants or dental hygienists (n=33, 78%) and reported working in the dental profession for 11 or more years (n=27, 64%). In addition, 33 participants (79%) reported already caring for infants and toddlers in their practice. In regards to the stages of change construct, 21 (87.5%) and 12 (66.7%) participants in the intervention and control groups, respectively, reported

Table III: Mean Scores by Group and Time for Practice Behaviors, Values, Confidence, Knowledge, Perceived Usefulness and Perceived Degree of Influence on Practice

Variables		Control (n=18)	Intervention (n=24)
Current Practice Behaviors (SD)	Baseline		3.16 (0.49)*
	Post-intervention		3.21 (0.65)
	1 month follow-up	2.81 (0.55)*	3.04 (0.38)
	3 month follow-up	2.99 (0.45)	3.21 (0.31)
	6 month follow-up		3.16 (0.36)
Value	Baseline		7.17 (3.11)
	Post-intervention		8.96 (1.98)
	1 month follow-up	7.33 (2.68)	9.55 (0.53)
	3 month follow-up	6.67 (2.87)	9.64 (0.50)
	6 month follow-up		8.50 (2.12)
Confidence (SD)	Baseline		4.23 (0.53)*
	Post-intervention		4.27 (0.55)
	1 month follow-up	3.76 (0.87)*	4.37 (0.74)
	3 month follow-up	3.89 (0.79)	4.36 (0.46)
	6 month follow-up		4.39 (0.53)
Knowledge (SD)	Baseline		3.12 (0.41)
	Post-intervention		3.82 (0.62)
	1 month follow-up	3.31 (0.45)	4.07 (0.58)
	3 month follow-up	3.33 (0.54)	3.58 (0.34)
	6 month follow-up		3.50 (0.32)
Perceived workshop usefulness	-	-	9.47 (0.90)
Perceived influence on practice	-	-	8.21 (1.87)

*Note: Groups significantly different from each other at baseline ($p < .05$). SD = standard deviation.

Table IV: Mean Unadjusted Pre- to Post-Score Group Differences and Statistical Results Practice Behaviors, Values, Confidence and Knowledge

Variables	Control (n=18) Mean (SD*)	Intervention (n=24) Mean (SD*)	t(40)	p-value	95% Confidence Interval for the Difference
Practice Behaviors	0.18 (0.54)	0.07 (0.72)	0.54	0.59	-0.30, 0.52
Value	-0.67 (3.16)	1.79 (3.24)	2.46	0.02	-4.48, -0.44
Confidence	0.13 (1.02)	0.03 (0.54)	0.41	0.68	-0.39, 0.59
Knowledge	0.02 (0.44)	0.48 (0.79)	2.21	0.03	-0.87, -0.04

being in the action phase. All demographic characteristics are presented by group in Table II.

Group Equivalency Summary

The intervention and control groups were similar in demographic and practice characteristics (Table II), therefore it was deemed unnecessary to use demographic variables as covariates in the subsequent analyses. Mean scores across time for all variables of interest are presented in Table III. Independent t-tests revealed that the intervention group scored

significantly higher with respect to confidence and practice behaviors at baseline compared to the control group ($p < 0.05$, Table III)

Pre-Post Group Differences

A significant group interaction effect emerged for value and knowledge ($p < 0.05$), with participants in the intervention group demonstrating significantly higher baseline to post-intervention change scores. No group differences were observed with respect to confidence or practice behaviors ($p > 0.05$).

Barriers

Barriers identified from the intervention and control groups at baseline were combined. Four main overarching themes emerged:

1. Child developmental/behavioral barriers ("child is too young," "behavioral management," "child cooperation" and "nervous/fear")
2. Parent/caregiver barriers ("parent interruption/interference," "parents are nervous," "must have parent/caregiver cooperation" and "lack of knowledge of parents when the first visit should be")
3. Access to care barriers ("cost," "transportation," and "waiting list for pediatric dentists")
4. Environmental barriers ("open concept office environments," "gloves/masks/protective eye-wear" and "sounds and smells")

Workshop Satisfaction

Items addressing workshop satisfaction were very positive as the mean scores for perceived workshop usefulness ($M=9.47$, $SD=0.90$) and perceived influence on practice ($M=8.21$, $SD=1.87$) were high. Open-responses regarding workshop satisfaction were also positive among intervention participants as indicated in the following examples: "The information provided in this course was very educational and helpful," "I feel much more comfortable in infant toddler care since this workshop" and "This was a very good course! It's great to be able to help small children to care for their teeth."

Other comments from participants reflected the positive impact of the workshop at the individual level, but highlighted the concern that support and buy-in at the practice level is needed: "I found this very informative; unfortunately the rest of my large office was unable to attend. I will gladly share my information and enthusiasm with them," "I really enjoyed the seminar, unfortunately I am a single participant from a large practice" and "Enjoyed the program but don't think it can influence my doctors." Interestingly, other additional comments that participants provided conveyed a notion that early preventive care is not the responsibility of the dental practice and placed the responsibility on parents and had a sense of pessimism: "Treating infants could very well lead to a life long fear of dentistry; diagnosing problem areas, then referral to a pediatric specialist with sedation would be best" and "The only reason this age group would need dental treatment is because of poor caregiver knowledge. Children only eat and drink what they are given. Caregivers need to be responsible for oral care and nutrition. Educate them!"

Discussion

The present findings indicate that the bOHP program had an impact on intervention participants' knowledge and value of oral health care among young children (<3 years), and that the impact appeared to be sustained for at least 6 month. In addition, workshop satisfaction was very positive as reflected in the perceived workshop usefulness and the perceived influence on practice scores.

However, data suggest that the bOHP intervention alone did not impact participants' confidence or practice behavior in treating young children. This may have been because the recruitment attracted professionals who already had an interest in this topic, or that the items used to measure these constructs were not sufficiently sensitive to detect increases that may have resulted from the intervention. Furthermore, the focus of the workshop was more knowledge-based versus skill building-based. Although the workshop had a hands-on component where participants were able to practice oral health care on young children volunteers, many participants were involved in this brief practice as observers only.

Some contradictory results regarding caring for young children emerged. The majority of intervention (87.5%) and control (66.7%) participants reported that they were in the action phase. However, these results were in direct contradiction to participants' responses to the 2 items used in the current practice behaviors scale to assess their frequency of caring for 0 to 2 year olds. Specifically, 100% of control group participants and 76.2% of participants in the intervention group reported that they "rarely" or "never" provided preventive and restorative treatment to 0 to 2 year olds. This later measure (providing preventive and restorative treatment to 0 to 2 years olds) was more consistent with what the researchers expected to find, since during formative research within the local health unit prior to planning the bOHP intervention, the following issues were documented:

- Community dentists were uncomfortable in treating children <3 years
- Parents attending well-baby clinics reported that dental offices have told them that their child is "too young" to be seen until the child is at least 3 years
- A total of 23% of school entrants had experienced dental caries prior to starting school at age 4

The apparent contradiction may be due to several factors, including social desirability or a weakness

in questionnaire design. For example, participants may have thought they were practicing the desired behavior and then later realized how infrequently they were doing so, or how their own definition of "caring for toddlers" differed from "best practice."

The majority of participants were also from mature dental practices (65% of all participants reported working in the dental profession for 10 or more years). Fein et al found that after the bOHP intervention 89% of student participants reported that they were more likely to provide care to young children in the future.¹² Thus, the impact of the program on different dental professional sub-populations warrants further study, particularly among dental students and/or recent graduates who are most likely to be receptive to change. Moreover, interventions such as bOHP may need to be tailored for experienced dental professionals as their confidence and motivation for accepting very young patients may differ from recent dental graduates. Although the dental profession has seen a paradigm shift from a surgical to a preventive focus in some practices, a business case highlighting the economic benefit may motivate mature dental providers to provide preventive oral health care to very young patients. For instance, in addition to training programs, economic incentives that allow for increased reimbursement for dental offices that treat infant and young children have shown to be effective.¹⁴

The literature suggests that continuing education alone is not sufficient for provider practice changes. Sohn et al's review of interventions for preventing ECC revealed that continuing education was important but a more systems-based approach was necessary for desired changes.¹⁵ In the present study, the majority of participants were either dental assistants or dental hygienists, and may not have the authority to change office policies. This theme of "lack of authority to change office policy" also emerged in the qualitative data. Future research should focus on the entire dental team as both the professional and office levels impact individuals' practice behaviors. Moreover, some participants' perceived early preventive dental care was not part of their role, but a responsibility of the parent/caregiver, suggesting that research should also explore attitudes and subjective norms among dental professionals.

Although practice guidelines indicate a dental home should be established by age 1, few dental offices in this study's community routinely following these guidelines. A number of theoretical frameworks suggest that the decision to adopt practice guidelines is complex. As applied to the Information-Motivation-Behavior-Skills Model, information related to practice guidelines and the importance

of early preventive care, motivation related to individual attitudes and social norms, and behaviors such as objective skills and perceived self-efficacy could be influencing practice behaviors.¹⁶ Barriers as outlined in Cabana's framework could include: lack of familiarity and awareness of guidelines (knowledge), lack of agreement with specific guidelines, lack of outcome expectancy, lack of self-efficacy, lack of motivation (attitudes), and external barriers, patient factors, guideline factors (e.g. presence of contradictory guidelines) and environmental factors (e.g. time, resources, organizational constraints, reimbursement concerns).¹⁷ Future research on the above constructs could be useful in developing additional interventions that facilitate dental providers' ability and decrease barriers related to providing preventive care to young children.

In addition, one of the goals of this study was to assess the feasibility of implementing the bOHP among dental professionals in the community. While 61 dental practices employing an unknown number of dental professionals received an invitation to participate, only 24 individuals were recruited into the bOHP evaluation, and only 3 dentists were in attendance. The inability of the current study to recruit dentists is indicative of the real-world challenges associated with reaching this body of professionals and engaging them into these types of programs. In addition, the thorough approach we took to invite dentists (i.e., through personalized invitations sent to every dental clinic along with a reminder letter) represents a strength of the present pilot study. Nonetheless, these numbers indicate the need for exploring novel recruitment and retention strategies and for raising awareness among the dental community about the benefits of professional development. One possible solution would be to promote and get buy-in for interventions with existing professional bodies such as the RCDSO or the College of Dental Hygienists of Ontario to increase future participation and the credibility of future community events. The importance of strategies to increase attendance at trainings has also been highlighted in a recent Cochrane Review which confers the benefits of continuing health education. Specifically, the review which included 81 trials involving more than 11,000 health professionals, found that attending educational meetings or workshops was associated with improved professional practice as well as improved healthcare outcomes for patients.¹⁸

Moreover, although the majority of the participants were dental hygienists/dental assistants, these provider groups are important as they provide critical oral health education and care to patients. From a life course perspective, dental hygienists provide a continuum of care, as they typically see the same

Figure 2: Mean and Standard Error Scores Between Treatment Groups Across Time For Perceived Importance of Providing Preventive Care to Children 0 to 3 Years (Value)

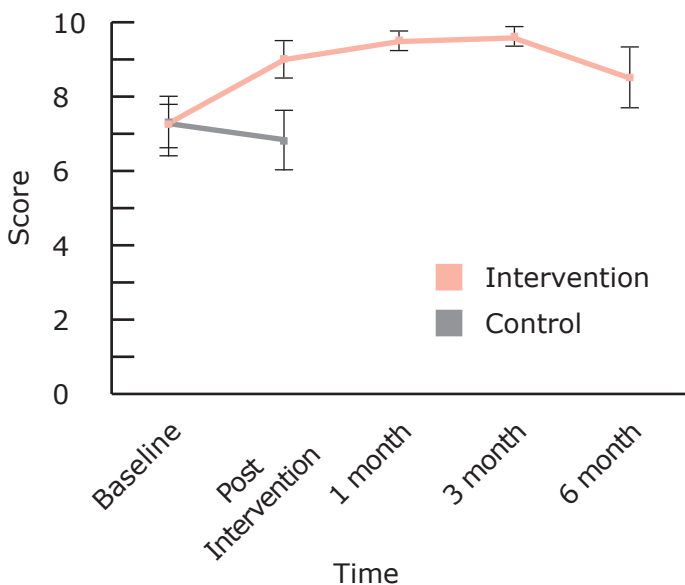
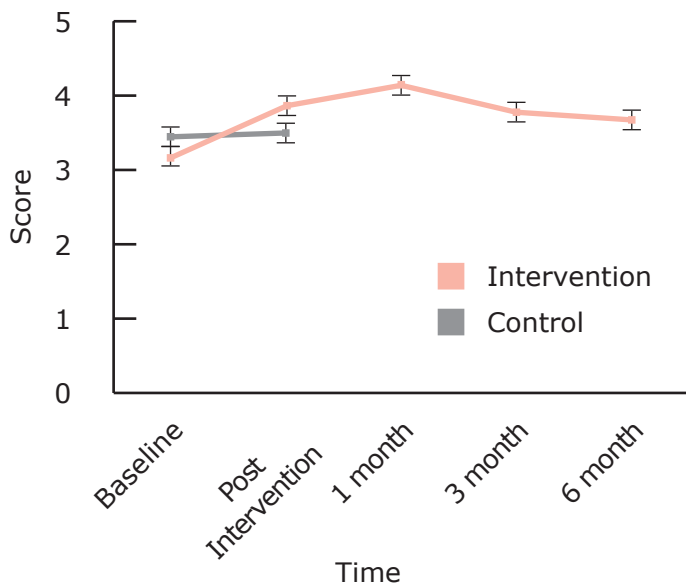


Figure 3: Mean and Standard Error Scores Between Treatment Groups Across Time For 'Knowledge'



patients year after year. Thus, they are witness to major life changes and events, such as the birth of children. As such, they have the potential to play a major role in educating patients about oral health issues, including raising awareness among the general population about the importance of infant oral health care. Thus, focusing on educating hygienists and assistants may represent an important starting point for efforts aimed at promoting infant oral health care.

The issue of sustainability is an important consideration for any public health program. Unfortunately, there were a high percentage of participants who were lost to follow-up, thus the long-term impact of the bOHP warrants further study. However, at 6 month follow-up, the mean scores for value and knowledge did remain higher compared to baseline measures among the intervention group (descriptive data only) (Figures 2, 3). Moreover, hands-on practical skill training and continuous booster sessions have been found to be critical in sustaining the desired practice behavior among providers and would assist in maintaining the positive impact of the bOHP program.^{12,15,19}

While this is the first study to evaluate the bOHP program among dental professionals in a Canadian community setting, several limitations should be acknowledged. First, the possibility of self-selection bias must be noted given the recruitment methods and the lack of randomization into the intervention and control groups. It is likely that those who chose to attend already had an interest in infant and toddler oral health. Second, more than half of the par-

ticipants were lost to follow-up. Third, methodological challenges remained, such as a small sample size and the inability to randomly assign participants to the intervention and control groups. However, similar to many other public health community interventions, this quasi-experimental design may be more natural and characteristic of the real world setting in which interventions are implemented and may possess more external validity, particularly when implementing and evaluating interventions at a local level. Fourth, this study employed a 6 month follow-up to explore whether changes in dental providers' knowledge, values, confidence and practice behaviors regarding preventive oral health care to young children were sustained. Future research should include longer follow-up periods to provide more meaningful assessments regarding whether these changes have been instituted into practice.

Findings from a national forum on ECC in the U.S. concluded: "...oral health should be integrated into broader child health and development systems; dental caries should be addressed through a chronic disease management model; and comprehensive approaches incorporating multiple strategies that involve families, clinicians and child services providers in ECC prevention and reduction efforts should be employed"²⁰ As professional guidelines and governmental initiatives highlight the importance of early preventive oral health care among young children, it is imperative that the local dental workforce is willing and prepared to provide such care. Subsequently, Simpson's framework for implementing oral health promotion interventions outlines 4 stages (training, adoption, implementation

and practice) and calls for careful examination of system-level factors (e.g. public health, organization) that could be considered when implementing and sustaining such evidence-based interventions.²¹

Conclusion

Notwithstanding the above limitations, results from this community pilot evaluation suggest that the bOHP program may serve as a promising intervention to increase dental professionals' knowledge and the value of providing oral health care to young children and that participants found the workshop useful and applicable. This program may help fill the gap between clinical guidelines and dental practice behaviors; however, evaluating this in the context of varying stages of readiness to change requires further consideration. This may assist in further ensuring a knowledgeable, skilled and confident dental workforce as a critical component in public health efforts focusing on early detection and decreasing the negative sequelae associated with caries in childhood and across the lifespan.

Summary Points:

- Dental caries is the most common chronic disease in childhood and represents a significant public health concern. In addition, the very early childhood period is a critical time for early identification of risk factors and early intervention to help change the trajectory of a child's oral health.
- Findings suggest the bOHP is effective in increas-

ing dental professionals' knowledge and values about the importance of preventive oral health among young children. However, expanding the current program to focus on stages of readiness and including more systems-based approach to enhancing early oral health provider interventions should be considered.

- Ensuring a knowledgeable, skilled and confident dental workforce is a critical component in public health efforts focusing on early detection and decreasing the negative sequelae associated with caries in childhood and its impact across the lifespan, particularly among the most vulnerable populations.

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