

## Motivational Interviewing to Decrease Parental Risk-Related Behaviors for Early Childhood Caries

Jacqueline J. Freudenthal, RDH, MHE; Denise M. Bowen, RDH, MS

### Introduction

The Surgeon General's Report on Oral Health in America identified dental caries as the single most common chronic childhood disease.<sup>1</sup> In part, caries is rampant because early childhood caries (ECC) is a transmissible, infectious disease affecting the teeth of infants and toddlers. Transmissibility is routed in the behavior of mothers or primary caregivers who expose children to cariogenic microorganisms through intimate contact, sharing and tasting foods on a spoon or pacifier.<sup>2</sup> Progression or reversal of the decay process is based on a balance of protective and pathologic factors, and risk assessment is important to management of the caries process.<sup>3-5</sup> Effective caries management strategies for ECC include parent interviews to determine risk-related variables, such as socioeconomic factors, the child's and parent's history of caries and feeding practices.<sup>6</sup> According to Weinstein and Riedy, "Parenting practices may serve to either protect or place a child at additional risk. Some parents are unaware of the health risks their parenting practices place on their children."<sup>7</sup>

Motivational interviewing (MI) is a patient-centered interaction, a brief counseling technique in which negotiation guides behavior change.<sup>8</sup> MI has been employed in dental public health to motivate parents to adopt prevention strategies for ECC.<sup>9-11</sup>

### Abstract

**Purpose:** This small scale study examined if an individualized motivational interviewing (MI) approach to oral health education promoted positive changes in early childhood caries (ECC) risk-related behaviors of mothers enrolled in a Women, Infants and Children (WIC) Program.

**Methods:** Seventy-two mothers were recruited to complete pretest and posttest questionnaires 4 weeks apart. Mothers in the treatment group (n=40) experienced a counseling type session (MI) and follow-up telephone calls to promote positive oral health behaviors.

**Results:** No significant change was found in the 4 constructs measured: valuing dental health, permissiveness, convenience and change difficulty or openness to health information. Statistically significant positive changes were found in the treatment group only in number of times the children's teeth were cleaned or brushed (p=0.001) and the use of shared eating utensils (p=0.035). Other cariogenic feeding practices and use of sweets to reward or modify behavior were not significantly affected (p<0.05).

**Conclusions:** In this group of WIC mothers, MI appeared to have a modest impact on some high-risk parental behaviors that contribute to ECC. This approach warrants further investigation to assess impact of an extended intervention program, parents from diverse populations and the feasibility of use of peer counselors in the public health setting.

**Key Words:** dental caries/prevention/control, health education/dental, motivation, primary prevention

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### Review of the Literature

Traditional oral health education consists of advice giving and persuasive approaches.<sup>9</sup> This approach has a positive effect on knowledge. However, its impact on biofilm removal and oral health are short term. Providing accurate information may help clients make decisions about changing behaviors, but this step alone generally will not motivate behavior change.<sup>12</sup> MI was developed

as an alternative to advice giving or direct persuasion that evolved from research conducted in the 1980s and 1990s to develop patient-centered approaches and brief counseling techniques as alternatives to longer interventions.<sup>13-15</sup> MI initially was developed as a treatment approach for addictive behaviors and more recently has been used as an intervention for chronic diseases or conditions affected by lifestyle.<sup>16-19</sup> The MI

counseling technique also has been studied in dental public health. A series of articles reported the outcomes of a 2 year clinical study comparing the effectiveness of MI counseling and traditional oral health education in a group of 240 Punjabi-speaking (South Asian) children aged 6 to 18 months in British Columbia.<sup>9-11</sup> The original study found the group of children whose mothers experienced the MI intervention had fewer carious surfaces after 1 year compared to the control group ( $p < 0.01$ ).<sup>9</sup> Subsequently, the researchers reported fewer new carious lesions, decayed or filled, in the intervention group after 2 years ( $p < 0.02$ ). Positive parental choice to follow recommendations for fluoride varnish was significant in clinical outcomes regardless of no MI follow up in the second year. MI appeared to have a continued impact over time.<sup>10</sup> Further exploratory analysis of the data from this sample showed DMFS rates were higher in children whose mothers had prechewed their food, resided in a rural environment and had a higher income.<sup>11</sup>

MI is based on the premise of asking questions encouraging individuals to talk about their personal goals prior to offering advice or information, and providing choices for individuals that best suit their situation. MI allows individuals to explore problems in a supportive environment and “resolve ambivalence about behaviour change, rather than present arguments for or against change.”<sup>20</sup> An understanding of an individual’s readiness for change allows practitioners to adapt their approach to promote health behaviors. The Transtheoretical Model (TTM) or Stages of Change Model, the conceptual model upon which MI was predicated, allows an understanding of the process of change. Individuals progress through specific stages of readiness toward adopting new behaviors and maintaining behavior changes. The 5 stages include: precontemplative, contemplative, preparation, action and maintenance.<sup>21</sup> MI focuses on

**Table 1: Readiness Assessment of Parents Concerning Infant Dental Decay (RAPIDD) Constructs**

Valuing Dental Health	<ul style="list-style-type: none"> <li>• Keeping my baby’s teeth healthy is important to me</li> <li>• My baby benefits a lot when I clean his/her teeth</li> <li>• I like the idea of a health person putting medicine on my baby’s teeth to protect them from getting cavities</li> <li>• I believe, giving my baby fluoride vitamins every day, would help my baby’s teeth</li> </ul>
Permissiveness with Oral Health	<ul style="list-style-type: none"> <li>• Foods and drinks that are not sweet, don’t taste good to my baby</li> <li>• I feel like a mean parent if I don’t give my baby sweets</li> <li>• My baby will have no problem when I stop giving him/her the bottle</li> <li>• It makes me feel good when I give my baby something sweet to eat or drink</li> </ul>
Convenience and Change Difficulty	<ul style="list-style-type: none"> <li>• Without a bottle, my baby’s crying keeps me and my family up at night</li> <li>• It would be very hard to give my baby less sweets</li> <li>• My baby gives me a hard time when I try to brush his/her teeth</li> <li>• It is very convenient to feed the baby with a bottle</li> <li>• My baby is happier when I give him/her something sweet in the bottle</li> <li>• My baby will have no problem when I stop giving him/her the bottle</li> <li>• It is not easy to give my baby a fluoride vitamin every day</li> <li>• I am able to put my baby to sleep without feeding him/her</li> </ul>
Openness to Information	<ul style="list-style-type: none"> <li>• I would take the baby off the bottle if the health center told me to do so.</li> <li>• I get advice on taking care of my baby from radio, TV, magazines, newspaper or books.</li> <li>• I feel comfortable asking someone at the health clinic about ways to take care of my baby.</li> <li>• It is easy for me to get answers about ways to take care of my baby from the health center</li> </ul>

Each item is rated on a 5-point likert scale from strongly agree to strongly disagree. Adapted from Weinstein and Riedy.<sup>7</sup>

practitioners’ skills to motivate others to make changes in behavior based on the client’s stage of readiness.<sup>13,14</sup> Based on TTM, Weinstein and Riedy validated a scale, Readiness Assessment of Parents Concerning Infant Dental Decay (RAPIDD), for assessing parents’ readiness, or stage of change, concerning infant dental decay based on 4 constructs: valuing dental health, permissiveness with oral health, convenience and change difficulty and openness to information. Table 1 summarizes information measured by items included in the RAPIDD instrument and categorized by construct. Findings indicated the

RAPIDD constructs were modestly correlated with child feeding, dietary variables and oral hygiene practices.<sup>7</sup>

The purpose of this small scale study was to determine if an individualized MI approach to oral health education promoted positive changes in ECC risk-related behaviors of mothers enrolled in the Supplemental Nutritional Program for Women, Infants and Children (WIC) in Southeast Idaho, an area without fluoridated water. No other aspect of the WIC program employed MI or provided formal oral health education. Therefore, previous dental knowledge would have come from other sources.

## Methodology

Participants spoke English, were enrolled in the WIC Program in Southeast Idaho and had 1 or more children between the ages of 6 and 24 months who were not primarily breast-fed. The WIC coordinator verbally invited mothers to participate in the pilot study as they arrived for scheduled WIC appointments. A sample of the incentive, including complementary oral health products and feeding utensils, was displayed in the WIC coordinator's office. The researcher randomly assigned volunteers to groups using a coin toss prior to the mothers' appointment for enrollment. Each subject subsequently met individually with the researcher as they enrolled, resulting in 40 mothers in the treatment group and 32 in the control group. A predetermined minimum of 30 subjects was established for each group. Random assignment resulted in unequal numbers in the control and experimental groups. At individualized appointments, the researcher obtained informed consent as approved by the Idaho State University Human Subjects Committee and administered the pretests.

Two measuring instruments were used as pre- and posttest instruments. A modified version of the RAPIDD Instrument was used to measure the mothers' beliefs about caring for their child's teeth.<sup>7</sup> The second instrument, the Parental Care of Child's Teeth (PCCT) questionnaire, was developed for this study to assess demographics and parental oral health behaviors such as child feeding, dietary and oral hygiene practices.

Weinstein and Riedy developed RAPIDD and defined the 4 constructs based on summative subscales of the 20 items.<sup>7</sup> Each question measured the mothers' readiness for change on a 5-point scale, from strongly agree to strongly disagree. Scores were calculated for each construct as averages. Cronbach's alpha tests were conducted for each of the subscales. The modification to RAPIDD elimi-

nated 1 question about change difficulty regarding breast-feeding. The 20 items were based upon findings from the literature regarding caries risk-related parental behaviors.<sup>7</sup> Weinstein reported results of his study establishing validity and reliability of the RAPIDD incorporating content of another instrument developed by Evens.<sup>22</sup>

The original Evens instrument was the basis for the PCCT used in this study to assess child feeding, dietary variables and oral hygiene practices. Evens had previously found this questionnaire to be valid and reliable. Changes were made to accommodate this study's sample delimitations of age and children not primarily breast-fed. The researcher pilot tested this adapted PCCT questionnaire for content validity using a panel of dental hygiene faculty experts (n=4) to review its content and suggest revisions. This revised instrument was then pilot tested with 5 mothers of young children to determine ease of use and estimated time required for completion.

Following pilot testing, the RAPIDD and the PCCT pretests were administered to both groups by the researcher at the first meeting with each participant. Volunteers were asked to return approximately 4 weeks later to complete posttests. The researcher contacted mothers not returning to complete the posttests. Those unable to return in person were asked to return the posttests in a postage-paid, self-addressed return envelope. Sixty-eight of the 72 mothers completed the posttest.

**Intervention:** The researcher providing the MI intervention received training from a renowned dental expert through an interactive continuing education workshop and workbook.<sup>23</sup> This workbook provides practical suggestions for dental professionals based on the author's clinical and research experiences and from his study of MI. It describes MI, applies it to various dental situations and provides exercises for its application

to guide understanding and skills.

Subsequent to researcher training, each mother in the treatment group experienced a 20 to 30 minute individualized MI intervention following the pretest. The MI facilitated change in ECC risk-related behaviors based on the desired outcomes for her child's oral health. Rapport building included about 10 minutes of asking open-ended questions such as:

- "Being a first time mother, do you have concerns about taking care of an infant's teeth?"
- "Tell me about your experiences with your own oral health."
- "You seem caring and concerned about your child. Do you have any concerns about her teeth?"

After establishing rapport, open discussion, reflective listening and clarifying each mother's perspective about desired outcomes for her child's options for oral health strategies were offered or not offered based on each mother's readiness for change. If the mother asked or granted permission, information about oral health strategies was shared without advice or opinion in the form of a menu. Strategies autonomously identified by the mother as desirable were reinforced. Following this MI session, the researcher made follow-up telephone calls at 1 and 2 weeks to:

- Inquire whether the mothers had questions
- Offer suggestions with permission
- Provide support
- Affirm efforts

Mothers in the control group received no formal education because the WIC program has no oral health education or MI component. Pamphlets were available for these mothers to take home if desired, and questions were answered if posed. The district health department provides a fluoride varnish program in the public school system twice a year. However, this community has no other formalized public health programs targeting oral health and wellness.

A 0.05 level of significance was set

for all parametric and nonparametric analyses used to analyze pretest and posttest results of both instruments. A repeated-measures analysis of variance (ANOVA) was used to evaluate each of the 4 RAPIDD construct scores. A test of equality of variances was used to test the assumption of homogeneity. After each ANOVA, residuals were analyzed with Kolmogorov–Smirnov test. Violations of normality occurred in 2 of the 4 RAPIDD construct comparisons – therefore, those scores were analyzed within each group using the nonparametric Wilcoxon Signed Ranks Test with a Bonferroni correction to the *p*-value. A similar statistical analysis plan was used to assess results from the PCCT Questionnaire as described for the RAPIDD scores. This instrument assessed feeding practices, frequency of sweets used for reward and behavior modification, sharing of eating utensils and frequency of cleaning the child’s teeth. Non-parametric tests were necessary in all of those comparisons due to violations of normality.

## Results

Pretest sample demographics are presented in Table 2. Independent *t*-tests evaluated for differences between the groups in the mothers’ age, age of participating children and ages of oldest and youngest children. No significant difference was found ( $p < 0.05$ ) between the treatment and control groups. No significant difference existed between groups for the children’s gender using a Fisher’s Exact Test or mothers’ level of education using a Mann–Whitney Test. Of the 72 subjects initially enrolled (40 treatment and 32 control), 4 participants were unable to complete the study resulting in 39 in the treatment group and 29 in the control group. Posttests were mailed to participants who were unable to return for completion at WIC (9 of 40 or 23% for the treatment group; 7 of 32 or 22% for the control group). Statistical comparisons were not calculated

**Table 2: Demographic variables of participants at pretest: (n=72)**

Participant Characteristics				
Maternal Education Level	Some High School	High School Grad	Some College Education	Baccalaureate Degree
Treatment Group	8	13	16	3
Control Group	2	16	11	3
Mothers/Care Providers	Number	Avg. Age	Age Range	Std. Dev.
Treatment Group	40	27.60 yrs.	19 to 39	4.80
Control Group	32	27.68 yrs	20 to 37	5.41
Mothers	71	27 years	19 to 39	
Grandmother	1	39 years		
Children	Number	Avg. Age	Age Range	Std. Dev.
Treatment Group	40	17 months	6 to 24 months	6.53
Control Group	32	15 months	6 to 24 months	5.53
Males	39			
Females	33			

to evaluate differences between subjects completing posttests at WIC or by mail.

No statistically significant difference was found between the control group and treatment group for any of the RAPIDD constructs except valuing dental health. The decline in posttest scores from pretest in the treatment group for valuing dental health was statistically significant ( $p = 0.05$ ), although this difference in scores does not translate into a clinically significant change. Cronbach’s alpha analysis ranged from 0.50 to 0.70 pre- and posttest for each construct. These figures were similar to the original study.<sup>7</sup>

The PCCT Questionnaire assessed frequency of sweets used for reward and behavior modification, cariogenic feeding practices and frequency of cleaning the child’s teeth. No significant change ( $p < 0.05$ ) was found between pretest and posttest scores of either the control or treatment groups in frequency of sweets used for reward or behavior modification, or in most of the cariogenic feeding practices (i.e., bottles given while awake or at bedtime, frequency of snacks or

drinks between meals). Differences were found in use of shared utensils (Table 3). Thirty-three percent of all participants reported sharing utensils with their child. Twenty-five percent of the control group shared utensils at pretest (8 of 32) and 24% at posttest (7 of 29), indicating no difference ( $p = 1.00$ ). Forty percent of the treatment group shared utensils at pretest (16 of 40) and 18% at posttest (7 of 39), demonstrating a significant change in related proportions ( $p = 0.035$ ). Because mothers in the treatment group identified more sharing of utensils at pretest, they had more room to improve – however, the change at posttest appeared to be clinically significant in this group.

Table 3 lists how frequently the mothers cleaned or brushed their child’s teeth. Eleven percent of mothers, 4 from each group ( $n = 8$ ), reported their child did not have teeth at the initial appointment. Therefore, those mothers were excluded from the frequency analysis concerning teeth cleaning. No significant change ( $p = 0.796$ ) in frequency was found in the control group from pretest ( $x = 3.20$ ) to posttest ( $x = 3.30$ ).



A statistically significant change ( $p=0.001$ ) in how often the child's teeth were cleaned or brushed was found for the treatment group from pretest ( $x=2.80$ ) to posttest ( $x=3.70$ ).

## Discussion

This MI intervention had no significant impact on any of the 4 RAPIDD constructs. No significant change was found in frequency of sweets used for reward, behavior modification or in most of the cariogenic feeding practices as measured by the PCCT. The short time period between the pretest and posttest (4 weeks) realistically may not have been enough time for mother volunteers to significantly change values, attitudes and behaviors and may require a stronger intervention over a longer period of time. Previous work by Weinstein et al did find significantly fewer carious lesions after 1 year<sup>9</sup> and 2 years<sup>10</sup> in high risk children whose mothers had been counseled with MI compared to a control group without MI. The initial MI intervention was followed by telephone calls for up to 6 months.

The sample in this study involved volunteer subjects of low socioeconomic status. However, little representation existed from minority or immigrant populations. Volunteers are inherently motivated. Culturally influenced attitudes and experiences may be a factor affecting the constructs measured by RAPIDD as well as cariogenic feeding behaviors and oral hygiene practices. Findings of previous research have supported community activities beginning at a young age and MI as important for overcoming cultural and socioeconomic barriers to the prevention of ECC.<sup>24</sup>

Eighty-eight percent of mothers reported cleaning their child's teeth "less than once a week" to "more than once a day" (0 = don't clean or brush, 1 = less than once per week, 2 = about every other day, 3 = almost every day, 4 = once a day, 5 = more than once a day). The control group demonstrated little change pretest to posttest but

**Table 3: Frequency of Oral Hygiene Attempts and Shared Utensils (PCCT)**

Group	Pretest	Posttest	p value
<b>Control Group</b>			
Cleaned or brushed teeth*	03.2	3.3	$p = 0.796$
Percent of shared utensils	25%	24%	$p = 1.00$
<b>Treatment Group</b>			
Cleaned or brushed teeth*	2.8	3.7	$p = 0.001^{**}$
Percent of shared utensils	40%	18%	$p = 0.035^{**}$
Significant findings from PCCT questionnaire: *0 = don't clean or brush, 1 = less than once per week, 2 = about every other day, 3 = almost every day, 4 = once a day, 5 = more than once a day ** 0.05 significance level			

brushed their child's teeth almost every day. A positive change was found in the number of times the mothers in the treatment group brushed or cleaned their child's teeth. Before the MI intervention, the mothers reported brushing "about every other day" to "almost every day." This translates to about 3 to 5 times per week. After MI, mothers reported brushing "almost every day" to "every day" or approximately 6 to 7 times per week, nearly daily. Daily biofilm removal is essential for good oral hygiene, and heavy plaque accumulation in infants has been associated with development of ECC.<sup>25</sup> Additionally, this finding is potentially clinically significant – inadequate oral hygiene practices, leaving cariogenic bacteria undisturbed, feeding practices and diet play important roles in the development of ECC. Effective oral hygiene practices that are established at an early age, such as tooth brushing, can be maintained throughout childhood.<sup>26</sup>

Although the 2 groups did not differ demographically, a difference in feeding practices was identified at pretest. Fewer mothers in the control group shared utensils at pretest than in the treatment group. Some mothers might have been aware that this practice is potentially harmful prior to the

pilot study. A statistically significant change in the use of shared utensils for the treatment group was found, a finding perhaps related to the higher number of mothers sharing utensils. Nonetheless, this finding is encouraging because the possibility that MI contributed to a decrease in sharing of utensils in this group could have clinical significance. A decrease in shared utensils has the potential to decrease the transmission of cariogenic bacteria from mother to child. A common route of transmission is from mother to child by tasting and testing food on a spoon or pacifier.<sup>2,26</sup> Delaying or preventing transmission by changing this targeted behavior could theoretically impact the incidence of ECC.

## Conclusion

Results of this study found no clinically significant change in valuing dental health, permissiveness, convenience and change difficulty or openness to health information as a result of an MI intervention with mothers enrolled in a WIC program in Southeast Idaho. The short duration of the study could have limited the potential for change. Two practices, sharing utensils during feeding and the number of times a week mothers brushed

or cleaned their child's teeth, were positively impacted in the group of mothers exposed to MI intervention. A long-term study with parallel and diverse populations would add to the literature of using MI. Further research based on the Transtheoretical Model<sup>21</sup> should focus on development of stage – appropriate interventions to move individuals along the stages of change continuum toward positive behaviors that promote oral health.

Based on Weinstein's experiences, MI is a simple to learn intervention with training and practice. Therefore, peer facilitators could be trained in MI to decrease professional time, cost and adoption probabilities in dental public health settings.<sup>9,10</sup> Creative interventions like MI are needed to promote positive health practices by parents with young children to lower the risk of oral diseases.

*Jacqueline J. Freudenthal, RDH, MHE, Assistant Professor in Dental Hygiene and Community Health Coordinator; Department of Dental Hygiene, Idaho State University, Pocatello, Idaho*

*Denise M. Bowen, RDH, MS, Professor in Dental Hygiene and Graduate Faculty; Department of Dental Hygiene, Idaho State University, Pocatello, Idaho*

## References

1. US Department of Health and Human Services. Oral health in America: a report of the Surgeon General. *NID-CR/NIH*. 2000.
2. Caufield PW, Cutter GR, Dasanyake AP. Initial acquisition of mutans streptococci by infants: evidence for a discrete window of infectivity. *J Dent Res*. 1993;72(1):37–45.
3. Featherstone JD. The science and practice of caries prevention. *J Am Dent Assoc*. 2000;131(7):887–889.
4. Young DA, Featherstone JD, Roth JR, et al. Caries management by risk assessment: implementation guidelines. *J Calif Dent Assoc*. 2007;35(11):799–805.
5. Young DA, Featherstone JD, Roth JR. Curing the silent epidemic: Caries management in the 21st century and beyond. *J Calif Dent Assoc*. 2007;35(10):681–685.
6. Ramos-Gomez FJ, Crall J, Gansky SA, Slaton RL, Featherstone JD. Caries Risk Assessment Appropriate for the Age 1 Visit (Infants and Toddlers). *J Calif Dent Assoc*. 2007. 35(10):687–702.
7. Weinstein P, Riedy CA. The reliability and validity of the RAPIDD Scale: readiness assessment of parents concerning infant dental decay. *ASDC J Dent Child*. 2001;68(2):129–135, 142.
8. Miller WR, Rollnick S. Motivational interviewing: preparing people to change addictive behavior. New York (NY): Guilford; 1991.
9. Weinstein P, Harrison R, Benton T. Motivating parents to prevent caries in their young children, one-year findings. *J Am Dent Assoc*. 2004;135(6):731–738.
10. Weinstein P, Harrison R, Benton T. Motivating mothers to prevent caries confirming the beneficial effect of counseling. *J Am Dent Assoc*. 2006;137(6):789–793.
11. Harrison R, Benton T, Everson-Stewart S, Weinstein P. Effect of motivational interviewing on rates of early childhood caries: a randomized trial. *Pediatr Dent*. 2007;29(1):16–22.
12. Kay EJ, Locker D. Is dental health education effective? A systematic review of current evidence. *Community Dent Oral Epidemiol*. 1996;24(4):231–235.
13. Rollnick S, Kinnersley P, Stott N. Methods of helping patients with behaviour change. *BMJ*. 1993;307(6897):188–190.
14. Bien TH, Miller WR, Tonigan JS. Brief interventions for alcohol problems: a review. *Addiction*. 1993;88(3):315–335.
15. Kaplan SH, Greenfield S, Ware JE Jr. Assessing the effectiveness of patient-centered interactions on the outcomes of chronic disease. *Med Care*. 1989;27(3):110–127.
16. Greaves CJ, Middlebrooke A, O'Loughlin L, et al. Motivational interviewing for modifying diabetes risk: a randomized controlled trial. *Br J Gen Pract*. 2008;58(533):535–540.
17. Resnicow K, Davis R, Rollnick S. Motivational interviewing for pediatric obesity: conceptual issues and evidence review. *J Am Diet Assoc*. 2006;106(12):2024–2033.
18. Bombardier CH, Cunniff M, Wadhvani R, Gibbons LE, Blake KD, Kraft GH. The efficacy of telephone counseling for health promotion in people with multiple sclerosis: a randomized controlled trial. *Arch Phys Med Rehabil*. 2008;89(10):1849–1856.
19. Fischer H, Mackenzie T, McCullen K, Everhart R, Estacia RO. Design of a nurse-run, telephone-based intervention to improve lipids in diabetes. *Contemp Clin Trials*. 2008. 29(5):809–816.
20. Stott NC, Rollnick S, Rees MR, Pill RM. Innovation in clinical method: diabetes care and negotiating skills. *Fam Pract*. 1995;12(4):413–418.
21. Prochaska JO, DiClemente, CC. The transtheoretical approach: crossing traditional boundaries of change. Homewood (IL): Dorsey Press, 1984.
22. Evens CC. Snacking patterns as a risk factor for early childhood caries. dissertation. Seattle, (WA): University of Washington, 1997.
23. Weinstein P. Motivate your dental patients: a workbook. Seattle (WA): University of Washington; 2002.
24. Twetman S. Prevention of early childhood caries (ECC)—review of literature published 1998–2007. *Eur Arch Paediatr Dent*. 2008;9(1):12–18.
25. Alaluusua S, Malmivirta R. Early plaque accumulation—a sign for caries in young children. *Community Dent Oral Epidemiol*. 1994 Oct;22(5 pt 1):273–276.
26. Twetman S, García-Godoy F, Goepfired SJ. Infant oral health. *Dent Clin North Am*. 2000;44(3):487–502.