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adha American Dental Hygienists' Association

SPECIAL SUPPLEMENTARY ISSUE—SEP-OCT 2010

Using Brief Motivational Interviewing to Sustain

Toothbrushing Behavior Change

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Developed in collaboration with and sponsored by GlaxoSmithKline Consumer Healthcare

A recent study conducted by Gallagher et al looking at the effect of brushing times and dentifrice on plaque removal concluded that oral health care professionals should reinforce efforts to persuade patients to brush for longer periods of time, as increasing brushing time to the consensus minimum of two minutes increases plaque removal to an extent likely to provide clinically significant oral health benefits.[1] These results are consistent with previous findings that demonstrate patients typically overestimate their adherence to the two-minute brushing recommendation. This discrepancy is well documented in data by Saxer et al as presented in Table I.[2]

Table I. Brushing time in seconds[2]

Actual	Estimated
68.8	148.1
73.7	128.2
83.5	146.8
80.1	141.7
65.2	133.4

There is currently a discrepancy between what professionals believe regarding the length of time their patients are brushing and the actual practice of their patients.

Further studies examining tooth brushing time demonstrate that the use of powered toothbrushes with timing or pacing devices further improved overall time spent brushing compared to manual brushing alone. Dentino et al reported that while only 17 percent of manual toothbrush users meet the two-minute brushing time recommendation, 66 percent of powered toothbrush users were two-minute compliant.[3] These results suggest that timing devices provide meaningful feedback to patients. The new evidence by Gallagher et al substantiates the importance of compliance with recommendations for adequate duration by clearly demonstrating improved oral health outcomes associated with ideal brushing times.[1] Specifically, brushing for 120 seconds removed 26 percent more plaque than brushing for 45 seconds. Better plaque removal was seen with increased brushing times. Brushing for 180 seconds removed 55 percent more plaque than brushing for 30 seconds.[1]

There is currently a discrepancy between what professionals believe regarding the length of time their patients are brushing and the actual practice of their patients. This survey looked at the tooth brushing times of patients as assessed by professionals to see if there are perception discrepancies. A six-question electronic survey was sent out to a convenience sample of dental hygienists via ADHA Update. There were 543 total respondents to the survey with 496 identifying as practicing clinical hygienist. The results from the practicing hygienists are as follows:

Q1. In your opinion, how much does the duration of brushing affect the amount of plaque that is removed?

Answer options	Response percent
A lot	82.4
Somewhat	17.3
Not at all	0.2

Q2. How often do you speak with your patients about brushing times?

Answer options	Response percent
At every patient visit	77.4
Yearly	16.9
Only on the first visit	3.7
Not at all	2.1

Q3. What length of time do your patients typically report they spend brushing?

Answer options	Response percent
30 sec	12.1
1 min	42.6
2 min	32.7
3 min	3.5
N/A	9.1

Q4. In your opinion, what is the most effective brushing time?

Answer options	
30 sec	0.0
1 min	2.5
2 min	69.4
3 min	28.1

Q5. Are you aware of the Gallagher study that addresses effective brushing time?

Answer options	Response percent
Yes	6.9
No	93.1

This study was funded by GlaxoSmithKline Consumer Healthcare.

Brushing twice daily for two minutes and flossing once daily is a singularly consistent recommendation made by oral health providers. Yet despite its relative simplicity, patients often fail to adhere to this recommendation. This lack of adherence to self-care and treatment recommendations is not atypical. Studies on adherence to health professionals' recommendations have shown that approximately 30 percent to 60 percent of health information provided in the clinician/patient encounter is forgotten within an hour, and 50 percent of health recommendations are not followed.[4] Oral health providers typically learn and approach patient encounters in a persuasive authority manner, offering knowledge and prescriptive strategies to persuade the patient to make the required behavior change. Professional advice and recommendations are typically most successful in clients who are already prepared for change. For those with ambivalence or frank resistance to change, improved adherence has been demonstrated when a more behavioral, less cognitive focus is used. In all cases, desire, ability and reasons for change must come from the patient. Daily effective dental plaque removal, adherence to regular professional periodontal maintenance visits, healthy dietary and lifestyle habits are adherence issues dental hygienists often address in their patient encounters. A number of well-established health psychology models provide alternative approaches to elicit-

Table II. Elicit-Provide-Elicit			
Open-ended questions	**Affirmations**	**Reflections**	**Summaries**
What is your understanding of how brushing time affects your gum health? What would the benefits be of brushing longer?	I commend you for your commitment to brushing at least twice daily.	I know it is easy to cut your brushing time short, especially when you have such a busy schedule.	Generally, you are not sure how long you spend brushing your teeth, but a powered toothbrush with a built in timing device might help you meet two-minute brushing goals.

ing behavior change. Motivational interviewing (MI) is a well-accepted strategy aimed at behavior change shown to positively affect health behavior change related to smoking, drug addiction, exercise, weight reduction, diabetes management, medication adherence, condom use and oral health.[5]

MI is a directive, client-centered counseling style for eliciting behavior change by helping clients to explore and resolve ambivalence.[6] It recognizes and accounts for the fact that direct persuasion is often ineffective at sustaining behavior change. Motivation and confidence to make a change, as well as recognition of the change as important, are elicited from the client rather than prescribed by the dentist or dental hygienists. The specific strategies of MI still allow the clinician to be directive in helping a patient elicit, clarify and resolve ambivalence. This is accomplished by enabling the patient to identify pros and cons associated with a particular behavior pattern and determine what action, if any, to take. The decision comes from within the patient, not the counselor, allowing the patient to have complete autonomy in the decision-making process.[5,7]

Applications in dentistry demonstrate that a brief MI session before or in conjunction with the dental education session can lead to improved knowledge and oral hygiene relative to traditional education alone. Weinstein et al compared the effect of a MI counseling visit to standard health education practices with parents of children susceptible to early childhood caries. After two years, children in the MI group exhibited significantly less new caries (35.2 percent) than those in the control group (52 percent). The study indicated that, as a result of MI, there was a higher incidence of fluoride varnish application appointments in the MI group as compared to the control.[8,9]

Further, improvement in plaque, autonomous regulation and oral health knowledge were improved significantly more following a 15- to 20-minute session of brief MI in a population with severe mental illness than those who received only oral health education. While both groups showed reductions in plaque from baseline to four weeks, only the MI group sustained significant reductions in plaques from the fourth to eighth week of the study.[10]

Dental and dental hygiene students alike have been successfully trained in MI.[11,12] This review of MI counseling spirit and strategies will focus on how this approach might be used to elicit oral health behavior change within the dental counseling atmosphere. The key components of brief MI that can be applied for the delivery of oral health information and advice are: Ask Permission, Elicit-Provide-Elicit, Sort Options and Obtain Commitment.

Ask Permission

Asking permission to discuss or share strategic information is an integral first step in establishing the collaborative spirit of MI. It quickly and efficiently demonstrates respect for the client's autonomy and freedom of choice/consequences regarding their behavior. In the instance of exploring the adequacy of a patient's time spent brushing, the clinician might ask, "Would it be okay if we spent a few minutes discussing the tooth brushing instructions we introduced at your last visit?"

Elicit-Provide-Elicit

It is human nature to be more accepting of those ideas or reasons we offer than to accept those offered by others. This three-phase process begins by asking the client what they already know or are interested in knowing about an oral health area of interest. "What do you know about the risks associated with inadequate tooth brushing time?" This simple opening respects the patient's skills and knowledge, and avoids telling them something they already know. The practitioner then provides only the information the client needs after the client tells what they already know or is interested in knowing. Lastly, the clinician asks the client's view on what is offered.

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The Elicit-Provide-Elicit approach is achieved through the use of open-ended questions, affirmations, reflections and summaries (Table II). Open-ended questions, those requiring more than a yes/no or short answer, stimulate the client to do most of the talking. While short-answer or closed-ended questions may be appropriate at times, their use should be limited. The clinician assumes the role of an active listener reflecting back what the patient has said. Reflective listening is an important and challenging skill to develop. Skillful reflections are not limited to simply repeating what the client has said, but attempt to discover underlying meaning in what is elicited. They can also serve as an opportunity to express empathy.

Cues elicited from the client help direct the way that further information is provided. This exchange may require the clinician to resist the temptation to prescribe a solution to solve the patient's problem, often referred to as the "righting reflex." The righting reflex is to be avoided, as it often increases resistance, thereby decreasing the probability of behavior change. Certainly, as professionals, we do not let clients select unhealthy or risky actions without expressing our concern for an undesirable plan. Likewise, misperceptions can and should be corrected. For example, "The client states, there is nothing wrong with bleeding gums. It's normal for gums to bleed sometimes." The clinician can present alternative information. "It's interesting how many people have that same idea. Actually, there is research showing that bleeding gums are a sign of inflammation that can worsen and lead to tooth loss. Would you be interested in hearing about that?" Finally, summarizing periodically throughout a discussion to reinforce what the patient has said will confirm that the coun-

selor is listening and allows the patient to hear their words again. Since giving advice is such an integral component of the dental hygienist's job, the following points more thoroughly review the basic concepts for information sharing.

Basic concepts of giving advice for sustainable behavior change:[13]

- Offer information, don't impose it
- Find out if patients want the information before you give it
- Ask permission, especially when the information was not elicited
- Provide information in the context of other clients (I don't know if this will make sense to you, but as I have seen in my interaction with clients like yourself, they have found…")
- Give clients permission to disagree with you
- Use client statements to mirror or reflect what they said so they can observe their own conjectures
- Give information that is factually or evidence based, rather than just opinion
- Invite clients to decide what the information means for them ("What are your thoughts about this?)
- Remember your patient is a person, not an information receptacle. It is easy to feel there is so much information *clients must know* that we as providers need to supply rather quickly. However, it is not realistic that they can process all this information at once

Initial understanding derived from open-ended questioning and reflective listening provides the clinician with the basis for eliciting personal discrepancies held by the patient. One approach that can be used to explore the level of importance, confidence and/or motivation for engaging in a new behavior is the use of rulers. For instance, the clinician can ask, "On a scale of 1 to 10, with 10 being most important, how important is your oral health to you?" Once the patient identifies their self-rated importance, the clinician can further clarify by asking, "What would it take for you to increase the importance 2 or 3 additional levels?" Inconsistencies between the current health behaviors and goals/preferences create a rationale for change.

Ultimately, an integral objective of MI is to elicit commitment statements (change talk). It is quite powerful and effective when patients hear themselves suggest a change in behavior. This increases their commitment to what they are saying and reinforces autonomy. The task of the clinician is to evoke, facilitate and strengthen self-motivated change talk rather than attempting externally to drive the change.[5]

Provide Options and Obtain Commitment

Once again, it is important for the clinician to resist the temptation to offer a single simple solution. The approach should be more consistent with a brainstorming session, sorting a variety of potential options for what the patient would like to change and arriving at a plan. This can be guided by asking the patient what they feel could work for them based on their own past experience, the experience of others or conjecture. The clinician can direct the brainstorming by supplementing their ideas. Ultimately, the patient chooses with the clinician, affirming their freedom of choice and self-direction. When the clinician argues their point for the patient to change their behavior, it will create a situation where an ambivalent patient will defend the opposing argument and thus inhibit change. In the event the patient resists making a commitment to change, roll with the resistance by offering an incremental goal or permission to keep communication open. For example, "Circumstances may change, so can we agree to leave the door open on this one?"

The purpose of this article was to introduce these concepts to clinical dental hygienists in the context of oral hygiene education/instruction. To gain additional knowledge and skills in MI, clinicians are encouraged to more thoroughly explore this exciting approach through training programs. As MI use emerges in dentistry, such training within our discipline may not be readily available. Fidelity in the method of MI training is also a concern. Not unlike mastering other new skills, successful adoption and use of MI requires practice, ideally with supervision and coaching.[14] Such mentoring may also currently be limited due to a lack of access to those in the discipline with such experience. Fortunately, the Motivational Interviewing Network of Trainers (MINT) provides a variety of useful training materials and nationwide course offerings to help practitioners learn MI (see www.motivationalinterview.org).

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