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THE OFFICIAL JOURNAL OF THE CANADIAN DENTAL HYGIENISTS ASSOCIATION

# CJDH JCHD

FEBRUARY 2016 · VOL. 50, NO 1

## Interactions between dental hygiene faculty and undergraduate dental hygiene students on Facebook

## The client–dental hygienist relationship and client compliance

## Implementation of a pharmacist-taught pharmacology course for dental hygiene students

EDITORIAL

A new year, new beginnings, and celebrations!

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**Managing Editor**
Megan Sproule-Jones, MA

**Production**
Mike Roy, Tim Logan

**Advertising**
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# A new year, new beginnings, and celebrations!

Salme Lavigne, PhD, RDH

Salme Lavigne

It was with great excitement, humility, and trepidation that I assumed the role of scientific editor of the *Canadian Journal of Dental Hygiene* (CJDH) on December 1, 2015—excitement for what I have planned for the journal over the next three years; humility as I realize what an honour it is to be able to serve in such a prestigious position; and, finally, trepidation as I take this position very seriously and want to ensure that all of my goals will be met.

This year begins with a huge bang for the *Canadian Journal of Dental Hygiene* as it celebrates its 50th anniversary! I have watched the journal take on many faces over the past 50 years, first as *The Canadian Dental Hygienist/ L'hygiéniste dentaire du Canada* (1966–1986), then as *Probe* (1986–2004), and finally as the *Canadian Journal of Dental Hygiene/Le journal canadien de l'hygiène dentaire*. I would say that, in its infancy, the publication was more of a "magazine" that published newsworthy items about the work of the Canadian Dental Hygienists Association (CDHA) as well as the occasional scientific article. As the profession grew, however, so did the journal. In 1999, *Probe* began designating two issues per year as "scientific," in order to bring the latest in-depth dental hygiene research to dental hygienists and other oral health professionals across the country. Within five years, the journal had transformed itself into the scientific journal that it is today.

One might ask what differentiates a magazine from a scientific journal? Magazines are publications that contain general information on topics of interest to their readers. Magazine articles may be news items, opinion pieces or updates on products and trends; they are usually accompanied by large, colourful illustrations; and they may occasionally include references or suggested reading lists. In contrast, scientific journals (also known as scholarly or peer-reviewed journals) publish original research and review articles offering rigorous and detailed analyses of topics of importance to the progress of a particular discipline or profession. Journal articles always include extensive references and data to support their conclusions, and are evaluated carefully by independent experts prior to publication. This peer-review process lends credibility to the journals within the wider scientific community.[1] In short, scientific journals are peer-reviewed publications that present original research to inform their profession of new knowledge while magazines are newsy periodicals that contain short articles rather than formal scholarly works. CJDH definitely falls into the category of a scientific journal while *Oh Canada!*, CDHA's other triannual publication, falls into the category of a magazine.

Within professions such as ours, national associations typically house both types of publications. While the magazines are usually under the exclusive management of association staff, the scientific journals operate at "arms-length" in order to ensure their editorial independence and credibility. Scientific journals must follow strict publication and ethical guidelines in order to be recognized as reliable sources of high-quality information and granted the privilege of being indexed. The indexing of a journal is essential to its success, as the whole purpose of conducting and publishing original research is to make it available to as many peers as possible. For a journal to be indexed by major bibliographic databases such as Scopus, EBSCOhost, CINAHL, and Medline, it must complete a comprehensive application process that may take several years for approval. CJDH is fortunate to be indexed by Scopus, EBSCOhost, CINAHL, ProQuest, and Thomson Gale, joining thousands of other titles from publishers around the world, but it is not currently indexed in Medline/PubMed, the most prestigious and appropriate one for a journal within our profession.

There have been several attempts in the past to obtain Medline indexing, but those attempts were unsuccessful. Consequently, my first major goal as scientific editor of the journal is to develop a strategic plan to strengthen our application in order to secure indexing in Medline within the next 3 years. Closely tied to this major goal is my second goal: to promote CJDH to authors both nationally and internationally in order to increase the number of original research articles and thus strengthen

Correspondence to: Dr. Salme Lavigne, CJDH Scientific Editor; scientificeditor@cdha.ca

our international profile. The journal has indeed come a long way over the past 50 years and we should all be very proud of it! My ultimate goal is for CJDH to be recognized as an equal to the *Journal of Dental Hygiene*, the American Dental Hygienists' Association's scientific journal, and the *International Journal of Dental Hygiene*, the publication of the International Federation of Dental Hygienists.

You will already notice one change to the journal in 2016. Some of our editorial board members completed their terms late last year, creating two vacancies. We have filled those vacancies and have appointed several additional members, some of whom are international dental hygienists! The editorial board also made the decision to expand its numbers to include not only dental hygiene peers, but also researchers from other health professions in order to enhance its interdisciplinary expertise. I would like to take this opportunity to thank both Indu Dhir and Barbara Long for their exceptional service to the board over the years and to welcome new board members Dr. Joanna Asadoorian, Dr. Jane Forrest, Dr. JoAnn Gurenlian, Dr. Ann Spolarich, Dr. Jeanie Suvan, and Dr. Sylvia Todescan. In the coming months, the appointment of new members representing other health professions will be completed.

Another change to the journal that you may have noticed is the absence of an editorial from CDHA's president. After careful consideration, CDHA's board of directors determined that the most appropriate vehicles for communication between the president and CDHA members are its member magazine, *Oh Canada!,* and its social media platforms. This executive decision was made by CDHA in recognition of the fact that the journal is separate and distinct from the association.

Many birthday celebrations are planned for this year's golden anniversary of the journal, so please be on the lookout for forthcoming special initiatives and articles! Happy Birthday to the journal and Happy New Year to everyone... May 2016 bring much peace, health, and happiness to all of you individually and much progress and growth to our profession!

*We will either find a way or make one*
*—Hannibal (Carthaginian General, 247–182 BC)*

## REFERENCE

1. Simon Fraser University Library. What is a scholarly (or peer-reviewed) journal? [website] [cited 2016 Jan 15]. Available from: www.lib.sfu.ca/help/research-assistance/format-type/scholarly-journals

## IN THIS ISSUE

We are pleased to publish an original research article by **Leigh-Ann Wyatt, Lisa Mallonee, Ann McCann, Patricia Campbell, Emet Schneiderman,** and **Janice DeWald** on interactions between dental hygiene faculty and students on Facebook (p. 7). This issue also features a literature review by **Jessica Morris** and **Zul Kanji** on the influence of the client–dental hygienist relationship on client compliance (p. 15), and a short communication by **Casey Sayre, Christopher Louizos, Joanna Asadoorian,** and **Neal Davies** on the implementation of a pharmacology course for dental hygiene students taught by a clinical pharmacist rather than a basic scientist (p. 23). **Sarah Bell** and **Carol Hyde** offer reviews of *Get sharp: Nonsurgical periodontal instrument sharpening* and *The power of ultrasonics*, respectively (p. 27), and letter writers **Nanette Feil-Megill, Kathleen Feres Patry, Heather Robertson, and Boris Pulec** initiate a timely and important conversation with **Mandy Hayre** over private dental hygiene education in Canada (p. 32). Finally, with the start of a new year, we thank all of the experts who reviewed manuscripts for the journal in 2015 (p. 44), and we invite new and experienced authors alike to consider the journal for publication of their work in 2016. Our revised *Guidelines for authors* begin on page 38.

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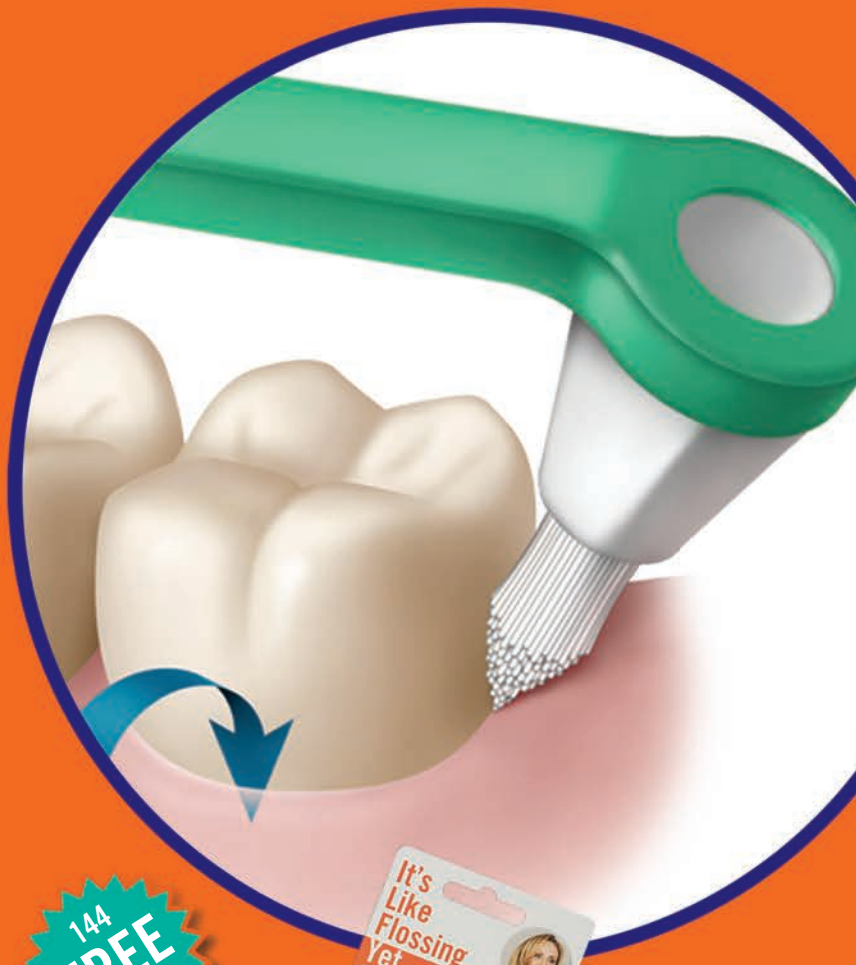

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# Exploring interactions between dental hygiene faculty and current undergraduate dental hygiene students on Facebook

**Leigh Ann Wyatt***, MS; **Lisa F Mallonee**[§], MPH; **Ann L McCann**[‡], PhD; **Patricia R Campbell**[Δ], MS; **Emet D Schneiderman**[◊], PhD; **Janice P DeWald**[Σ], DDS

## ABSTRACT

**Purpose:** The purpose of this study was to identify attitudes and experiences of dental hygiene faculty regarding interactions with current undergraduate dental hygiene students on Facebook (FB). **Methods:** In 2013, an online survey instrument was administered to 232 dental hygiene faculty members at 33 dental hygiene programs in Texas, Oklahoma, and New Mexico. A total of 94 dental hygiene faculty members participated, representing a 41% response rate. Descriptive and inferential statistics were used to analyse the data. **Results:** Of the respondents who indicated they had a FB account (84.2%), only a few (12.5%) were friends with students on FB. The majority of respondents (69.1%) felt it was inappropriate for faculty and students to interact on FB. Many felt the line between faculty and students was blurred because of FB interaction (68.1%). Over half (54.3%) agreed that faculty should use a separate FB page to interact with students. Just over 78% of faculty desired institutional guidelines for interactions on FB. **Conclusions:** Few dental hygiene faculty use FB either to interact with students or as a platform for academic use. This study supports the need for best practice guidelines to assist faculty in navigating the ambiguity of social networking relationships.

## RÉSUMÉ

**Objectif :** L'objectif de la présente étude était de cerner les attitudes et les expériences des membres du corps professoral en hygiène dentaire au sujet des interactions sur Facebook (FB) avec les étudiants actuellement inscrits au premier cycle d'un programme d'hygiène dentaire. **Méthode :** En 2013, un sondage en ligne a été réalisé auprès de 232 membres des facultés d'hygiène dentaire de 33 programmes d'hygiène dentaire du Texas, de l'Oklahoma et du Nouveau-Mexique. Au total, 94 membres du corps professoral en hygiène dentaire ont participé au sondage, ce qui représente un taux de réponse de 41 %. Des statistiques descriptives et déductives ont été utilisées pour analyser les données. **Résultats :** Parmi les répondants qui ont signalé avoir un compte FB (84,2 %), seulement quelques-uns d'entre eux (12,5 %) étaient amis avec des étudiants sur FB. La majorité des répondants (69,1 %) jugeaient qu'il était inapproprié que des interactions aient lieu sur FB entre les enseignants et les étudiants. Nombre d'entre eux étaient d'avis que la frontière séparant le corps professoral et les étudiants était floue en raison des échanges sur FB (68,1 %). Plus de la moitié (54,3 %) étaient d'accord que la faculté devrait utiliser une page FB distincte pour interagir avec les étudiants. Un peu plus de 78 % des membres du corps professoral souhaitaient avoir des lignes directrices pour les échanges sur FB. **Conclusion :** Peu de membres de la faculté utilisent FB, soit pour interagir avec les étudiants ou à titre de tribune pour des fins scolaires. Cette étude justifie le besoin de lignes directrices sur les pratiques exemplaires pour permettre au corps professoral d'éclaircir l'ambiguïté des relations de réseautage social.

**Key words:** dental education, internet, oral hygiene, social media, social networking, technology

## INTRODUCTION

Originally created in 2004 to build community among college-age young adults, Facebook (FB) is now the most popular social networking site (SNS) in the world, boasting over 1.1 billion users.[1] In fact, 80% to 90% of college-age students have profiles on FB. Institutions are, therefore, challenged to navigate uncharted territory, with administrators and faculty looking for guidance in dealing with the implications of this digital trend.[2,3] For this reason, dental educators have recognized the need for further research on how SNSs such as FB impact both dental and dental hygiene students and dental education.[3]

Popular media relate the ongoing dialogue on the part of both faculty and students regarding the potentially fraught nature of SNS relationships between the 2 groups. Over the past few years, various health professions administrators and educators have begun to form practices and opinions regarding the appropriateness of mutual relationships with students on sites that encourage casual, intimate sharing of information, as is the case with FB. Much of the dialogue touches on the appropriateness of relationships between faculty and current students on social media platforms.[4] Other concerns include the blurring of lines that may occur

*Assistant professor, Dental Hygiene Department, Texas A&M University Baylor College of Dentistry, Dallas, TX
[§]Associate professor, Dental Hygiene Department, Texas A&M University Baylor College of Dentistry, Dallas, TX
[‡]Professor, Academic Affairs Department, Texas A&M University Baylor College of Dentistry, Dallas, TX
[Δ]Professor, Dental Hygiene Department, Texas A&M University Baylor College of Dentistry, Dallas, TX
[◊]Professor, Biomedical Sciences Department, Texas A&M University Baylor College of Dentistry, Dallas, TX
[Σ]Professor and chair, Dental Hygiene Department, Texas A&M University Baylor College of Dentistry, Dallas, TX

Correspondence to: Leigh Ann Wyatt; lwyatt@bcd.tamhsc.edu
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through such relationships, and the ethical dilemmas that may arise when inappropriate content is discovered on each other's profiles.[5-10]

While some students and faculty may expect and enjoy the interactions with each other on FB,[11] others may be concerned about privacy and how such personal "friendships" on SNSs may influence the faculty–student relationship. Metzger et al. found that faculty felt their position as educators put them in a conflict of interest situation when networking online with students, and thus desired to maintain a distinct line between professional and personal relationships.[12]

Currently, consensus exists among faculty regarding the inappropriateness of initiating friend requests with undergraduate students; they view it as a violation of boundaries.[12,13] Research on health professions faculty demonstrates that, among those who receive friend requests from students, some delete the requests while others ignore them until the students graduate.[12,14] Schneider et al. found that, if faculty did maintain an online relationship with currently enrolled students, they felt it was more acceptable if the student initiated the interaction.[13]

Anecdotal evidence from Princeton University reveals a different response to friend requests from post-graduate residents, which suggests that faculty do not view the relationships with undergraduate and post-graduate students in the same way. Some faculty who are not comfortable being friends with undergraduate students will maintain a relationship with enrolled graduate students, explaining that they are more like colleagues than students.[15]

As with any popular web-based technology, FB and the relationships that it can promote between faculty and students present an opportunity to engage technology-driven students in other avenues of learning. Now in its formative stages as an educational tool, FB is being examined to determine whether or not online relationships between faculty and students on personal, informal SNSs can have academic advantages.[16] Some administrators and faculty view FB as a platform to model e-professionalism and foster student connections, as well as a medium in which to post study tips and suggestions, and to further explore ideas and concepts beyond the classroom walls.[16-20] Mazer et al. found that students whose faculty member used FB to demonstrate transparency and connectedness had higher levels of affective learning and motivation.[18] Most recently, a small number of dental hygiene program directors have utilized FB to learn more about potential applicants during the admissions process.[19]

Few studies have explored how social media are being used in dental hygiene education and the implications of such use. The purpose of this study was to identify attitudes and experiences of dental hygiene faculty regarding interactions with current undergraduate dental hygiene students on FB.

## METHODS

The Institutional Review Board from Texas A&M University Baylor College of Dentistry approved the study with expedited status (2013-0613-.BCD-EXP). Convenience sampling was used for data collection. The target population consisted of 258 dental hygiene faculty members at 33 dental hygiene schools in Texas, Oklahoma, and New Mexico. Each dental hygiene program was contacted and email addresses verified by an administrative assistant unrelated to the research in order to ensure anonymity. Of the initial target population, 232 email addresses were collected, verified, and entered into a Microsoft® Excel spreadsheet. Email addresses were imported into SurveyMonkey®.

An online survey consisting of 56 Likert-type scale questions and 1 open-ended question was divided into 6 sections. All participants were directed to answer the first 3 sections and the open-ended question of the survey. The first section (7 questions) was used to gain information such as age, teaching experience, and individual institutional policies regarding social networking between faculty and students. The second section (6 questions) gauged faculty opinions regarding FB use between the 2 groups, regardless of the faculty members' use of FB. The third section (9 questions) was used to understand the faculty members' personal and professional use of FB. The open-ended question allowed participants to add any additional information that they felt would relate to faculty–student interactions on FB. Only those faculty who answered that they were friends with current undergraduate students were then directed to other sections of the survey that explored practices and opinions on academic and ethical uses of FB. The survey instrument was reviewed by a committee with survey design expertise at Texas A&M University Baylor College of Dentistry. It was then pilot tested by both clinical and didactic faculty members at Texas A&M University Baylor College of Dentistry who provided feedback on both the quality and clarity of the survey.

Each subject in the target population received a pre-notice email explaining the purpose of the survey. One week later, an initial email with a personalized survey link was sent to each recipient's school email address. Instructions for survey completion were provided once the recipient clicked on the Survey Monkey® link. Consent was assumed upon submission of the survey. Over the course of 4 weeks, 3 follow-up emails with links were sent to non-responders. A final email was sent to respondents thanking them for their participation. One respondent was chosen by random selection through IBM® SPSS to receive a $100 Visa gift card as a reward for participation in the study.

The survey data were imported into IBM® SPSS software (version 22) program for statistical analysis. Descriptive statistics, including frequencies and cross tabulations, were

used to identify attitudes and experiences of FB use among dental hygiene faculty. Kruskal-Wallis and Mann-Whitney tests were used to detect differences among and between groups, respectively. Spearman correlations were used to detect any associations among faculty demographics and their practices and opinions. In order to protect against Type I errors when running multiple tests, the alpha level was set at $\alpha = 0.001$. The three 5-point Likert scales measuring opinions were collapsed into 3-point scales (strongly agree/agree, neutral, disagree/strongly disagree). The three 5-point Likert scales measuring practices were collapsed into 4-point scales (always/almost always, fairly often, sometimes, never). Comments were transcribed and analysed for themes.

## RESULTS

A total of 232 dental hygiene faculty were surveyed. The overall response rate was 41%. Ninety-four subjects completed both sections of the survey (demographic and content), and were included in the final analysis.

Table 1 illustrates the demographics of the participants in the study. Of the respondents, 94.7% (n = 89) were female and 5.3 % (n = 5) were male. Age ranged from 21 to 60+ years, with a mean of 50.11 years and a standard deviation of 10.31 years. The majority of respondents were employed as assistant professors (24.5%, n = 23), followed by clinical instructors (23.4%, n = 22), and associate professors (12.8%, n = 12). The majority (73.4%, n = 69) were full-time faculty. The majority (54.3%, n = 51) held a master's degree, followed by those with a bachelor's degree (33%, n = 31).

As seen in Table 2, just over 85% (n = 80) of faculty had or currently have a FB account, reporting a mean of 251 friends. Over half of respondents spent less than one hour a week on FB. In Table 3, the overwhelming initial reason reported for joining FB was to connect with family (71.3%, n = 57). Other reasons for using FB included (1) reconnecting with people, (2) professional networking, and (3) belonging to special interest groups. Of the 10 respondents who reported being friends with undergraduate students, only 4 went on to complete the remainder of the survey.

Figure 1 shows that 20% (n = 19) of respondents worked for an institution that prohibited such interactions, while 3.2% (n = 3) reported their institution encouraged interactions between the 2 groups. Over 55% (n = 52) of faculty surveyed worked for an institution that neither encouraged nor prohibited faculty–student interactions on FB. Just over 21% (n = 20) did not know what their institutional expectations were for faculty interactions with students on FB.

As seen in Table 4, there was a strong consensus regarding faculty–student interactions on FB. Just over 69% (n = 65) of faculty disagreed with the statement, "it is appropriate for faculty and current students to interact on FB." Over 78% (n = 74) worked hard to keep

**Table 1.** Demographics of participants

| Gender | Number | Percent |
|---|---|---|
| Male | 5 | 5.3 |
| Female | 89 | 94.7 |
| Total | 94 | 100.0 |
| **Age** | | |
| 21–30 | 3 | 3.2 |
| 31–40 | 20 | 21.3 |
| 41–50 | 28 | 29.8 |
| 51–60 | 28 | 29.8 |
| 60+ | 15 | 16.0 |
| Total | 94 | 100.1[a] |
| **Title** | | |
| Clinical instructor | 22 | 23.4 |
| Assistant professor | 23 | 24.5 |
| Associate professor | 12 | 12.8 |
| Professor | 18 | 19.1 |
| Director/chair/dean | 15 | 16.0 |
| Other | 4 | 4.2 |
| Total | 94 | 100.0 |
| **Employment status** | | |
| Full time | 69 | 73.4 |
| Part time | 25 | 26.6 |
| Total | 94 | 100.0 |
| **Highest degree** | | |
| Associates | 6 | 6.4 |
| Bachelor's | 31 | 33.0 |
| Master's | 51 | 54.3 |
| EdD/PhD | 2 | 2.1 |
| DDS/DMD | 4 | 4.3 |
| Total | 94 | 100.1[a] |

[a]Some totals are over 100% due to rounding up

**Figure 1.** Institutional guidance for social media interactions between faculty and students

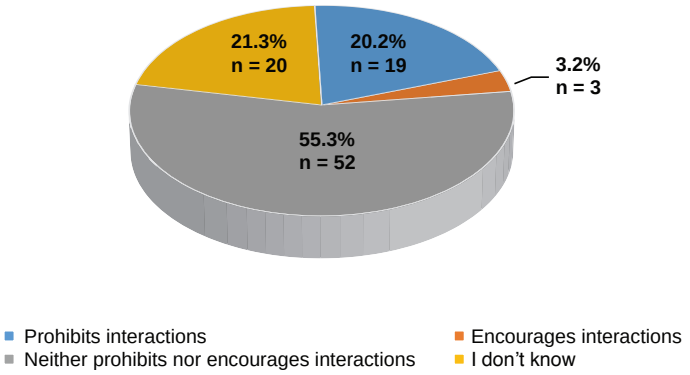

**Table 2.** Faculty use of Facebook (FB)

| FB account | Number | Percent |
|---|---|---|
| Yes | 80 | 85.1 |
| No | 14 | 14.9 |
| Total | 94 | 100.0 |
| **Time spent per week** | | |
| <1 hour | 51 | 63.7 |
| 1–4 hours | 25 | 31.2 |
| 5–9 hours | 3 | 3.8 |
| 10+ hours | 1 | 1.3 |
| Total | 80 | 100.0 |
| **FB friends with students** | | |
| Yes | 10 | 12.5 |
| No | 70 | 87.5 |
| Total | 80 | 100.0 |

**Table 3.** Faculty reasons for using Facebook (FB)

| Initial reason for joining FB | Number | Percent |
|---|---|---|
| To connect with family | 57 | 71.3 |
| To reconnect with people | 7 | 8.7 |
| It was the new fad | 6 | 7.5 |
| Pressure from others | 4 | 5.0 |
| Professional networking | 4 | 5.0 |
| To connect with students | 2 | 2.5 |
| Belong to special groups | 0 | 0.0 |
| Total | 80 | 100.0 |
| **Current reasons for FB use**[a] | | |
| To connect with family | 73 | 91.3 |
| To reconnect with people | 21 | 26.3 |
| Professional networking | 13 | 16.3 |
| Belong to special groups | 8 | 10.0 |
| To connect with students | 5 | 6.3 |
| It was the new fad | 1 | 1.3 |
| Pressure from others | 1 | 1.3 |
| I am no longer on FB | 1 | 1.3 |
| **Other** | | |
| Student ADHA group only | 1 | 1.3 |
| Follow my children | 1 | 1.3 |
| "Like" advertisers | 1 | 1.3 |
| Share photos | 1 | 1.3 |

[a]Multiple answers allowed

their personal life separate from their professional lives. An overwhelming majority of faculty (83%, n = 78) felt it was inappropriate for faculty to share personal information with students on FB and that the line between faculty and students was blurred because of FB use (68.1%, n = 64). Just over 54% of faculty (n = 51) felt that a separate page for interactions with students was warranted. An overwhelming majority of faculty (78.7%, n = 74) agreed that institutions should have guidelines in place for faculty interaction with students.

Spearman correlations revealed several highly significant associations between attitudes about the faculty–student relationship and appropriateness of using FB (Table 5). Specifically, faculty who tended towards strongly agreeing that they worked hard to keep their personal life separate from their professional lives also tended towards strongly agreeing that it was inappropriate to interact with students on FB (rho = –0.366, $p \leq 0.001$). Similarly, those who worked hardest to keep their personal life separate from their professional lives felt it was least appropriate to share personal information with students (rho = 0.542, $p \leq 0.001$). No significant relationships were found between responses on questions concerning appropriateness of interactions with students on FB and factors such as age (rho = –0.038), gender (rho = 0.066), teaching experience (rho = –0.055), highest degree earned (rho = 0.214) or title (rho = –0.175).

Of the 94 respondents, 53 provided comments regarding faculty interaction with current undergraduate students. Four common themes emerged: (1) there is potential for a blurring of lines when interactions occur between faculty and students, (2) interactions are considered acceptable following graduation, (3) faculty desire institutional guidelines, and (4) there are concerns about inappropriate content posted on students' FB timeline (Table 6).

## DISCUSSION

This study showed that, while the majority of faculty have a FB account, very few interact with students on the social networking site. Similar to findings from other studies, faculty initially adopted FB use to connect with friends or family members[12,16] but later also used FB for professional networking and to belong to special interest groups.

While many faculty had strong opinions regarding FB interactions, only a very small group (n = 10) reported actual experience interacting with undergraduate students on FB. As a result, the exploration of opinions of faculty who interacted with undergraduate students was limited. In addition, knowing that FB interactions with students might have been a controversial topic, faculty who interacted with students may not have completed the survey or answered honestly, resulting in selection bias.

In regards to appropriateness of interactions, the majority of faculty felt it was inappropriate to interact with current undergraduate students on FB. While consistent

**Table 4.** Opinions on faculty–student interactions

| Statement | Response | | | Total n (%) |
|---|---|---|---|---|
| | "Strongly disagree" or "disagree" n (%) | "Neutral" n (%) | "Agree" or "strongly agree" n (%) | |
| It is appropriate for faculty and current students to interact on FB. | 65 (69.1) | 20 (21.3) | 9 (9.6) | 94 (100) |
| Faculty should use a separate FB page for interactions with students. | 15 (16.0) | 28 (29.8) | 51 (54.3) | 94 (100.1)[a] |
| I work hard to keep my personal life separate from my professional life. | 6 (6.4) | 14 (14.9) | 74 (78.7) | 94 (100) |
| It is appropriate for faculty to share personal information with students via FB. | 78 (83) | 14 (14.9) | 2 (2.1) | 94 (100) |
| Institutions should have guidelines for faculty interactions with students on FB. | 8 (8.5) | 12 (12.8) | 74 (78.7) | 94 (100) |
| I feel the line between faculty and students is blurred because of FB interaction. | 12 (12.8) | 18 (19.1) | 64 (68.1) | 94 (100) |

[a]Some totals are over 100% due to rounding up

with other studies,[8,12,14] this finding differs significantly from a study conducted at Lee University, where faculty maintained an online relationship with students to help support the overall ethos and mission of the university, which included faculty involvement, connectedness, and availability to students.[11] Just over 50% of faculty members interviewed, who originally created a FB profile to stay in touch with families, recognized academic uses for the site. More than 75% of faculty were "friends" with students on SNSs; a large majority of interviewed faculty felt FB opened lines of communication with students and it aided in student perception of faculty approachability. While these faculty members demonstrated progressive thinking about the use of social media platforms in higher education and saw the value of FB, over 75% of faculty members also mentioned concerns about balancing the "dual relationship" of being a teacher and a friend to their students.[11]

Both qualitative and quantitative data in this study point to congruency of opinions among dental hygiene faculty and other health professions educators who consider "friending" students to be inappropriate.[12-14] Faculty across all disciplines feel that "friending" students on FB is inappropriate and increases the risk for an abuse of position. It may also place the student in the awkward position of feeling obligated to accept the friend request.[20] As with other health care professions, there seems to be consensus among dental hygiene faculty members that it is much more acceptable to be "friends" with students once they graduate and become colleagues.[14]

Contrary to findings in Chretien et al. where faculty under the age of 45 were less likely to view FB interactions with students as inappropriate,[14] this study showed no statistically significant relationship between age, gender, and teaching experience and interactions with students on FB. As younger dental hygiene faculty who feel more comfortable using social media fill vacant faculty positions, social media interactions between the 2 groups may feel more appropriate and become more commonplace.

Statistically significant relationships were found among several variables. Faculty who worked hard to keep their personal lives separate from their professional lives also felt it was inappropriate to both interact with students and to share personal information with students on FB. This finding is not surprising since FB is a highly personal SNS, where much of a person's life is shared in a very public forum.

**Table 5.** Associations between attitudes about the faculty–student relationship and appropriateness of using Facebook (FB)

| Faculty who strongly agreed with keeping their personal and professional lives separate strongly agreed that... | Spearman correlations | |
|---|---|---|
| | p | rho |
| ...it was inappropriate to interact with students on FB | –0.366 | ≤0.001 |
| ...it was least appropriate to share personal information with students on FB | 0.542 | ≤0.001 |

**Table 6.** Open-ended comments regarding faculty interactions with current undergraduate students

| Dominant themes | Sample comments |
|---|---|
| Blurring of the lines (n = 12) | "It is an important part of professional education to maintain boundaries and these boundaries are crossed when both groups are friends." |
| | "Students may think of faculty as friends and respect is sometimes lost." |
| | "Faculty can be 'too friendly' on FB and the lines do get blurred [in the area of] on respect." |
| | "If faculty shares too much of their personal life with students, students can confuse the relationship and this could interfere with the educational process." |
| | "There needs to be separation between faculty and students." |
| | "Students do not need to know my personal business while they are students." |
| | "A relationship with students might make it hard to not be partial when grading students." |
| | "Faculty should maintain on a professional level with students—FB is not the place for it." |
| | "Interactions have created issues with inaccurate clinic information, gossip about course directors, and favoritism." |
| | "It may be an abuse of position if the faculty member 'friends' the student." |
| | "Personal life should be kept separate from professional life." |
| Acceptable after graduation (n = 12) | "I am friends with students once they graduate. It's very important to have a clear distinction between faculty and students." |
| | "There is always time to be friends with students once they graduate and become colleagues." |
| | "I wish I had not accepted friend requests from students but feel rude to delete them." |
| | "There should be a 3–5 year moratorium on being FB friends with students after graduation." |
| | "Even after graduation, I limit what students can know about me on FB." |
| Institutional guidelines desired (n = 7) | "We need better overall guidelines for ALL social media [use] between faculty and students." |
| | "Interactions should be regulated by the institutions." |
| | "In my opinion, there should be institutional policies regarding this. We have had harmful instances occur at our university." |
| Inappropriate content (n = 6) | "Students need to understand the permanent nature of electronic communications." |
| | "A professional demeanor should always be upheld regardless of student status." |
| | "We encourage students to consider carefully what they post on FB." |
| | "Professionals should consider posting on FB only information that reflects who you are as a professional." |
| | "[A FB relationship] may work out well if there are certain boundaries outlined." |
| | "Institutions should not tell faculty what to do—it should be personal choice based on the comfort level of the individual." |

In this study, several dental hygiene faculty reported that they used FB for program-related purposes such as quickly disseminating school-related information, providing an online forum (closed-group page) for student chapters of the American Dental Hygienists' Association (ADHA), tracking job placements of graduates, connecting with alumni, and advertising CE courses. These uses contrast with findings from a recent study by Henry and Pieron, who determined that FB was being used by a small minority of program directors in the dental hygiene program admissions process.[19] While faculty may feel that FB is not suited for use in academia because of its social and personal nature, it may over time become a more popular vehicle for the dissemination of information to current students enrolled in classes and/or to alumni.

Participants in this study expressed concern that interactions between the 2 groups may "interfere with the educational process," noting that FB was originally created for social purposes. Another faculty concern was the potential for "legal fall out" if certain online conversations between faculty and students were made public. Citing the seriousness in the potential breach in the faculty–student relationship, one faculty member urged "all faculty to avoid this social network."

There seemed to be a desire among survey participants for professional lives and personal lives of faculty to remain distinct. In terms of the educational process, faculty commented, "FB is called *social* media and education is not

a social event," "interaction between the groups interferes with the educational process," and "respect is lost when students are friends with faculty on FB." Faculty showed special concern that students would be unable to separate the personal from the professional, thus hindering faculty responsibility for their education.

Specific ethical dilemmas and concerns were also reported. One faculty member reported being caught in an ethical dilemma after accidentally accepting a friend request from one student. The faculty member wanted to "unfriend" the student but "felt it would be rude to do so." Another faculty member raised concerns over grading biases saying, "Faculty cannot be objective - I have seen grading biases and favoritism created in the clinic." Another faculty member felt that since social media are permanent, faculty should stay away from FB altogether and such interactions between faculty and students should not be allowed. Other faculty members found it acceptable to interact with students as long as there was a social media policy in place. In regards to best practices, faculty reported that both students and faculty should censor content when posting on FB, knowing that each had access to view it.

While some social media policies and best practices currently exist, most pertain to e-professionalism and patient interaction in medical and allied health education.[21-23] Just under 25% of faculty in this study worked for an institution that provided social media guidelines for faculty–student interactions. The majority of faculty believed that institutions should provide guidelines to help faculty navigate gray areas of social media interaction with students.

In order to maximize benefits and minimize harms, dental hygiene programs should consider educating both students and faculty in best practices to frame expectations for social media use and interactions between the 2 groups on sites in which personal information can be viewed. Guidelines should address areas such as professional content on SNSs, privacy settings, HIPAA compliance, and appropriateness of relationships and interactions between both groups. With such guidelines in place, both groups may be better prepared for the opportunities and pitfalls associated with social media practices. While some faculty felt that policies may be too restrictive, guidelines and best practice education would help to give both groups strategies for interaction that would limit liability, allowing them to make the most of their online presence and relationships.

### Limitations and future research

This study was limited to a small group of dental hygiene faculty who, overall, had negative attitudes and experiences regarding the use of FB between faculty and undergraduate students. A larger sampling of diverse dental hygiene educators may yield differing attitudes and experiences, which is worthy of investigation. Another limitation of this study was that it only examined the use of FB between dental hygiene faculty and undergraduate students. Further research should be done to determine how dental hygiene faculty view similarly informal social networking platforms such as Twitter and Instagram—which also encourage intimate relationships—in the educational process. Findings should also be compared to how faculty view more formal social networking platforms such as wikis, blogs, and Youtube in dental hygiene education. Finally, investigating which areas of social media interaction most concerned faculty may give insight into developing best practices.

## CONCLUSION

This study demonstrated that only a small percentage of dental hygiene faculty feel comfortable using FB to interact with undergraduate students. Faculty have concerns about the implications of FB interactions with students. Furthermore, dental hygiene faculty see FB as best utilized for personal and social purposes rather than as a platform for academic use. Finally, the majority of faculty desire institutional best practice guidelines for navigating the gray areas of social networking relationships. Developing best practices to set expectations and guide interactions between both faculty and students may prove to be beneficial for both groups. As social networking continues to evolve, future research will be necessary so that dental and dental hygiene education can meet the demands of this growing trend.

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# Exploring how the quality of the client–dental hygienist relationship affects client compliance

**Jessica E Morris***, DipDH, RDH; **Zul Kanji**[§], MSc, RDH


## ABSTRACT

**Background:** Traditional health care values the technical skill and biomedical knowledge of health care professionals (HCPs), allowing for passive-client and dominant-HCP relationships. These types of relationships may not always prioritize the wants and values of the client and thus may not facilitate high levels of compliance. In recent years, the emphasis has shifted away from passive compliance and has moved towards including clients actively as partners in their care. **Objective:** This narrative literature review explores how the quality of the client–dental hygienist relationship affects client compliance. It examines 19 full-text original research studies published between 2002 and 2014, whose methodologies include quantitative, qualitative or mixed method designs, and highlights key themes associated with improving or decreasing client compliance. **Discussion:** Themes associated with improved client compliance include effective communication, client-centred care, shared decision making, and trust. Themes associated with decreased client compliance include lack of trust, ineffective communication, feelings of disconnection, and paternalistic relationship styles. **Conclusion:** Non-adherence to treatment interferes with successful outcomes. Interventions aimed at improving the quality of the client–dental hygienist relationship may be the key to increasing client compliance. Dental hygiene programs should integrate these key themes into student learning opportunities, in order for developing dental hygienists to appreciate that effective clinical skills extend beyond the technical requirements of instrumentation. Future research should explore the success of such interventions in dental hygiene. In particular, qualitative studies could explore how this relationship evolves over time, considering the perspectives of both the client and dental hygienist.

## RÉSUMÉ

**Contexte :** Les soins de santé traditionnels mettent en valeur les compétences techniques et les connaissances biomédicales des professionnels de soins de santé (PSS), ce qui donne lieu à des relations où le client est passif et le PSS est dominant. Ce type de relations n'accorde pas toujours la priorité aux besoins et aux valeurs des clients et conséquemment ne favorise pas un haut niveau d'observance de leur part. Depuis quelques années, l'accent est passé de l'observance passive à l'inclusion active du client en tant que partenaire de ses propres soins. **Objectif :** La présente revue narrative explore comment la qualité de la relation entre l'hygiéniste dentaire et le client influence le niveau d'observance du client. Elle examine 19 recherches plein texte originales qui ont été publiées entre 2002 et 2014 et dont les méthodologies comprennent des conceptions de méthodes quantitatives, qualitatives ou mixtes et soulignent les thèmes principaux associés à la hausse ou la baisse du niveau d'observance du client. **Discussion :** Les thèmes associés à l'amélioration du niveau d'observance du client comprennent la communication efficace, les soins axés sur le client, le partage de la prise de décision et la confiance. Les thèmes associés à la baisse du niveau d'observance des clients comprennent le manque de confiance, la communication inefficace, le sentiment d'être mis à l'écart et le style relationnel paternaliste. **Conclusion :** Ne pas adhérer à un traitement diminue les chances d'atteindre des résultats positifs. Les interventions visant à améliorer la qualité de la relation entre le client et l'hygiéniste dentaire peuvent être essentielles pour améliorer le niveau d'observance du client. Ces thèmes clés devraient être traduits en occasions d'apprentissage dans les programmes d'hygiène dentaire pour que les hygiénistes dentaires en formation puissent bien comprendre que les compétences cliniques ne se limitent pas aux compétences techniques d'instrumentation. Les études futures devraient explorer le succès de telles interventions en hygiène dentaire. Les études qualitatives pourraient, notamment, explorer l'évolution dans le temps de la relation entre le client et l'hygiéniste dentaire, en tenant compte des points de vue respectifs.


**Key words:** compliance; dental hygienist-patient relationship; dentist-patient relationship; health behavior; medication compliance; nurse-patient relationship; patient compliance; physician-patient relationship

## INTRODUCTION

Traditional health care delivery places heavy emphasis on the technical skill and biomedical knowledge of health care professionals (HCPs), including dentists and dental hygienists.[1,2] The HCP's level of skill and competence has been considered one of the "primary determinants of quality healthcare relationships and health outcomes." [1, p.109] This paradigm allows for passive-client and dominant-HCP interactions and gives little attention to the ways in which this relationship could affect client compliance.[2] Recent research suggests that a prescriptive client–HCP relationship does not necessarily achieve high treatment adherence because it may not take into consideration the values,

*Undergraduate student, Bachelor of Dental Sciences (Dental Hygiene) degree program, University of British Columbia, Vancouver, BC
*This article was written in partial fulfillment of the requirements for the BDSc(DH) program at the University of British Columbia.*

[§]Director, Dental Hygiene Degree Program, Faculty of Dentistry, University of British Columbia, Vancouver, BC

Correspondence to: Jessica Morris; jessica.morris@alumni.ubc.ca
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expectations, and challenges specific to each client.[2] Non-adherence to various forms of treatment is approximately 26%.[3] Non-adherence to dental recommendations is associated with poorer oral health outcomes and increased tooth loss. Client compliance plays a significant role in the success of periodontal therapy and minimizing alveolar bone loss.[4-6] The rate of tooth loss for compliant clients is lower compared to non-compliant clients. A meta-analysis conducted in 2002 concluded that 26% more clients had improved treatment outcomes when they adhered to recommendations versus those who were non-adherent.[7]

Recent holistic definitions of health have encouraged clients to take a more active role in the management of their oral and overall health. Many clients are now seeking high-quality client–HCP relationships in which HCPs do not simply attend to their symptoms but also recognize and respond to their concerns, expectations, and perceptions of their own oral health and overall well-being.[1,8] High-quality client–HCP relationships support collaboration and client autonomy, take a client-centred approach, and are now considered the standard of care.[2,9] This paradigm shift has led researchers to question how the quality of the client–HCP relationship may affect treatment adherence and health outcomes. The purpose of this narrative literature review is to explore how the quality of the client–dental hygienist relationship affects client compliance.

## METHODS

A search of CINAHL, Education Source, Google Scholar, and PubMed was undertaken using the following key words: client–dental hygienist relationship; quality of client–provider relationship; client–provider relationship; client–dentist relationship; client–doctor relationship; client compliance; compliance; adherence; and trust, in order to identify full-text original research articles on the client–HCP relationship and client compliance. Nineteen research studies, including randomized control trials, cross-sectional studies, and longitudinal and retrospective cohort studies using quantitative, qualitative, and mixed method designs, were included in the review. Excluded from this review were articles not published in English and those conducted prior to 2002. Literature reviews were also examined for background information related to current rates of client compliance and implications of non-compliance for oral and overall health.

Of the 19 studies reviewed, 9 of them identify attributes that either increase or decrease compliance, 8 focus on identifying attributes associated with improved compliance, and 2 focus solely on identifying attributes associated with decreased compliance. These themes have been synthesized and summarized below.

## DISCUSSION

### Themes associated with improved client compliance

#### *Communication*

Communication is a major determinant of client compliance.[2,8-18] Research demonstrates that those with a better understanding of their condition are able to make more informed decisions and have higher adherence rates to treatment.[14,17] Attributes of effective communication include taking the time to describe diagnoses, treatment, and procedures in full.[2,10-14,17,18] HCPs should clearly communicate the necessity of proposed treatment, the benefits of successful adherence, and potential side effects.[11,16,17]

Although Sheppard, Adams, Lamdan, and Taylor conclude that clients who perceive expected benefits of treatment demonstrate higher levels of compliance, research shows that HCPs may not routinely assess the client's level of knowledge and understanding.[11,16,17] Translating technical language is a key consideration; failure to do so creates misunderstandings and acts as a barrier to proper adherence.[2,16] Information should be provided using clear language that is easily understood.[16] Nonverbal communication, including facial expression, eye contact, and body posture, can also influence the quality of client–HCP relationship and affect client compliance.[2,16] Nonverbal communication can convey implicit messages about the HCP's attitude, emotions or thoughts. A review conducted by Roter, Frankel, Hall, and Sluyter assessing the nonverbal behaviour of HCPs concludes that clients are more satisfied with the quality of the relationship when HCPs demonstrate nonverbal signs of interest and acceptance.[19] For example, a frown is often perceived as a sign of disapproval, smiling or head nodding is associated with approval or agreement, and a blank expression tends to convey boredom or dismissal.[19] HCPs who sit, lean towards the client, and maintain eye contact during appointments rather than standing or moving towards the door convey empathy, resulting in greater client satisfaction.[2,16,19] HCPs who appear preoccupied during interactions, such as writing in the client chart or shuffling papers, and fail to maintain eye contact have been perceived as less compassionate and less interested in the client–HCP relationship.[16,19] Apollo, Golub, Wainberg, and Indyk suggest that, when verbal and nonverbal messages conflict, nonverbal communication often supersedes the spoken word.[16]

#### *Client-centred approach*

A client-centred approach is associated with improved client compliance.[2,9,10,14,20] Client-centredness, which involves "understanding each [client] as a unique person is now widely considered the standard for high-quality interpersonal care."[9, p. 661] Many studies associate client-

centredness with knowing the client as a whole person and not merely as a set of clinical symptoms.[1,2,9,10,14,16,20-22] Appreciating the client holistically requires the HCP to consider the unique experience of the client and demonstrate concern beyond the medical aspects of care. The HCP attempts to understand clients' daily life, including their struggles and responsibilities, and often takes the time to inquire about family, friends, and loved ones. Clients feel recognized and seen as a whole person when HCPs strive to understand the world through their perspective and incorporate their emotions, values, beliefs, and priorities into treatment recommendations.[1,2,16,21-23] Beach, Keruly, and Moore conclude that one of the most significant predictors of adherence to treatment in the primary care setting is the client's perception that their HCP knows them as a whole person.[9]

Associated with client-centred care is offering "physical expressions of comfort,"[2, p.129] such as smiling, shaking hands or hugging (when history and rapport have been developed), and ensuring that the client's perspective is understood and considered.[2,14,20,21] Such physical expressions of comfort demonstrate compassion and empathy and help empower clients to take an active role in their health.[10,20] Clients report feeling fully informed of treatment options, as well as respected, supported, cared for, and treated like a friend.[2,14]

*Shared decision making/partnership*

Clients who are encouraged to play an active role in decision making demonstrate higher levels of motivation and adherence to proposed treatment.[1,2,10,11,13,14,16-18,20] A collaborative partnership allows clients to voice their questions, concerns, and preferences.[10,16] Shared decision making requires a commitment to understand the concerns of the other person, and a willingness to establish common goals and work together to achieve those goals.[1,20] When this symbiosis occurs, clients are often more satisfied with the relationship and consequently more adherent to treatment.[13,20]

*Trust*

Establishing trust is an important component of a strong client–HCP relationship.[1,2,8,10,12,17,18,20,22] Clients who perceive their HCP to be sincere, credible, and honest are more likely to trust them and adhere to proposed treatment.[10] Other important influencing attributes of a trusting relationship include the length of the relationship; HCP knowledge, competence and expertise; and the HCP's ability to maintain confidentiality and provide honest and clear portrayals of diagnosis and treatment options.[2,18,21,24] HCPs who demonstrate optimism, compassion, loyalty, a nonjudgmental attitude, and support client autonomy facilitate trust and increase treatment adherence.[2,10,24] Brion suggests that trust is not static but that it develops over time.[8] Although Brion's research does not explore the timeframe involved in developing a trusting relationship, as trust is likely developed at a highly individualized rate, Brion indicates that this process begins at the time of initial diagnosis and evolves as treatment progresses, based on mutual honesty, protection of client confidentiality, and prompt responses to clients' requests and concerns.[2]

Muirhead, Marcenes, and Wright determine that client–dental professional relationships displaying trust, empathy, and respect affect client compliance and treatment outcomes. According to these researchers, when client expectations of care are met or exceeded, trust is established and maintained.[8] Establishing trust may be particularly important among older clients, as they tend to be less active in treatment decision making and rely more heavily on recommendations made by HCPs.[8,25]

*HCP competence/expertise*

The perceived level of HCP competence and expertise influences client compliance.[2,10,15,17,22] Assessment of competence is based on "the degree to which [clients] perceive that [HCPs] have the skills and knowledge required to provide for their health care needs."[10, p. 7-8] Expertise is demonstrated when HCPs are able to thoroughly educate clients about disease management and risks and benefits of treatment.[2,10,22] HCPs who communicate using technical language are not necessarily perceived as more competent, and Brion reinforces the importance of matching client education and "intervention to the level of comprehension and knowledge of the [client]."[2, p. 131] Easy-to-understand language often helps clients comprehend the disease process and increases confidence in the HCP's level of expertise.[2] HCPs who are familiar with their clients' medical history and are able to resolve problems as they arise demonstrate higher levels of competency and increase rates of compliance.[2,10,22] The literature reviewed does not discuss HCP competency in relation to academic credentials and achievement, which may be further evidence of the preference for relationships that encourage clients to play an active role versus relationships that prioritize the technical skill and biomedical knowledge of HCPs.

Themes associated with improved client compliance are summarized in Table 1.

## Themes associated with decreased client compliance

*Lack of trust*

Lack of trust is related to negative client–HCP relationships, which affects client compliance.[1,2,8,10,18] Berry et al. determine that clients with the lowest levels of adherence do not trust their HCP, and Muirhead et al. conclude that lack of trust in one's dentist reduces compliance.[8,10] Lack of trust and confidence in one's

**Table 1.** Themes associated with improved client compliance

| Themes | Examples |
|---|---|
| Communication | • taking the time to fully describe the necessity and benefit of successful adherence and potential risks of non-adherence<br>• translating technical language into language that is easily understood<br>• employing nonverbal forms of communication (smiling, head nodding, maintaining eye contact) |
| Client-centred approach | • demonstrating concern beyond the medical aspects of care<br>• asking about day-to-day life, including family, friends, and loved ones<br>• incorporating the client's emotions, values, beliefs, and priorities into treatment recommendations when possible<br>• educating and involving the client in diagnosis and treatment planning<br>• using physical expressions of comfort (e.g., smiling, shaking hands, hugging) to demonstrate compassion and empathy |
| Shared decision making/ partnership | • encouraging clients to play an active role in decision making<br>• encouraging clients to voice their questions, concerns, and preferences<br>• establishing common goals and working together to achieve those goals |
| Trust | • maintaining client confidentiality<br>• providing an honest and clear portrayal of diagnosis and treatment options<br>• demonstrating sincerity, honesty, optimism, compassion, loyalty, and a nonjudgmental attitude<br>• responding to clients' requests and concerns promptly |
| HCP competence/expertise | • thoroughly educating clients about disease management and risks and benefits of treatment<br>• using clear and easy-to-understand language<br>• demonstrating familiarity with clients' medical history<br>• resolving client problems as they arise |

dental professional and a perceived unmet need for dental treatment are predictors of poor oral health related quality of life (OHRQoL).[8]

*Difficulty talking to provider and feelings of disconnection*

Non-adherent clients are more likely to report discomfort and difficulty asking questions as a result of feeling disconnected from their HCP.[1,13,17,26,27] HCPs who establish detached and strictly professional relationships, which focus heavily on the technical aspects of care rather than understanding the client holistically, tend to elicit feelings of disconnection. Clients describe these relationships as impersonal, cold and distant, disrespectful, and condescending, and HCPs are perceived as being unapproachable, defensive, and lacking empathy towards clients' experiences.[1,27] Disconnected relationships are associated with confusion and misunderstandings of treatment recommendations, diminished levels of communication, and decreased client compliance.[13,17] Vermeire, Van Royen, Coenen, Wens, and Denekens reveal that clients who feel disconnected from HCPs are less likely to disclose the truth and/or discuss their non-compliance for fear of their HCP growing angry or offended.[27]

*Paternalistic attitude*

Paternalistic client-HCP relationships achieve lower levels of client compliance.[1,18,22,27] Within these relationships, collaboration and shared decision making are either absent or inadequate as there may be a belief that clients lack the expert knowledge needed to play an active role.[1,23,25,27,28] The HCP dominates decision making and determines which interventions are best, with little regard for the client's health beliefs, opinions or preferences.[1,23,25,27,28] Paternalistic relationships are HCP-centred rather than client-centred and have been described as being mechanical and business-like, brusque, and aggressive. These types of relationships result in an imbalance of power between HCP and clients.[1,22,23,25] Clients play a passive role and are less likely to receive information and explanations, ask questions, and reveal important personal and/or medical information.[1,22] Clients who feel left out of decision making are less likely to comply with proposed treatment.[18,22]

*Inadequate communication*

Inadequate communication, including incomplete, unclear, and/or conflicting information, affects decision making and is a barrier to client compliance.[1,13,17,27] Clients who feel that they have been given incomplete or partial information regarding diagnosis, disease progression or treatment outcome lack the necessary knowledge to make informed treatment decisions and have lower levels of adherence.[1,27] The failure of HCPs to communicate clear and specific protocols for treatment recommendations is an obstacle to proper adherence.[27] Conflicting information, either between different HCPs or from one HCP, leads to confusion and creates uncertainty about the accuracy of diagnosis and treatment recommendations, which results in reduced compliance.[1,17,27] Stavropoulou concludes that "perceived asymmetry of information appears to be an important factor affecting [clients'] adherence."[13, p.11]

While the themes associated with improving client compliance from the HCP and the client perspectives overlap, with the exception of HCP competence/expertise, this is not the case for themes associated with decreased client compliance.[20] From the HCP perspective, themes

observed in relationships with reduced compliance include feeling pressure from the client to make specific treatment recommendations and difficulty believing and trusting clients. These themes stem from the concern that clients are seeking treatment for secondary gains such as earning disability compensation or to obtain certain medications, such as narcotics, for illegal purposes.[20] When HCPs perceive that a client is deceitful, angry or non-adherent to recommendations, the client–HCP relationship may become strained or hostile, and client compliance is further reduced.[20]

Themes associated with decreased client compliance are summarized in Table 2.

## Health behaviour models

In addition to considering how the quality of the client–HCP relationship affects client compliance, it is important to acknowledge that individual psychological factors may also impact compliance rates. Health behaviour models have long been recognized as a means for dental professionals to promote behavioural change and adherence to treatment. Among the most influential models recognized in oral health are the health belief model (HBM), transtheoretical model (TTM), and theory of reasoned action.[29]

The health belief model posits that health behaviours are explained by health beliefs. The model focuses on two beliefs: the belief that a health threat exists and the belief that a given course of action will reduce the threat. Individuals' beliefs about the presence of a health threat are influenced by the extent to which they believe they are personally vulnerable to that threat, as well as their beliefs about the severity of the consequences if no action is taken. As a result, clients who believe that a health threat exists and that the proposed interventions will reduce this threat are more likely to comply with treatment recommendations.[30] The underlying principle is that individuals who are more informed will make better health decisions and are thus more likely to adhere to treatment.[29] However, research has shown that behavioural change seldom follows such a logical progression, and merely providing information is rarely sufficient to change health behaviours.[29]

TTM views behavioural change as a progression through five predictable stages: precontemplation (not ready), contemplation (getting ready), preparation (ready), action (change occurred), and maintenance (change preservation). Understanding the client's readiness for change along this continuum allows HCPs to tailor interventions to that stage. Although TTM is most often used with smoking cessation, longitudinal studies conclude that such interventions utilizing TTM result in limited improvement over other cessation strategies.[29]

The theory of reasoned action views "a person's intent to change [as] the most immediate and relevant predictor of carrying out that change."[29, p.4] Intent to change can be influenced by the individual's knowledge, values, and perceptions of their personal health, known as behavioural beliefs, or by the beliefs or expectations of other people or social norms, known as normative beliefs. While the theory of reasoned action may predict behaviours that are entirely within the individual's control and remain relatively stable, such as daily oral hygiene behaviours, factors outside the individual's control, such as fatigue or change of environment, may alter intentions and impede behavioural change.[29]

Despite the ability of health behaviour models to explain some of the psychological variables that may influence behavioural change and client compliance, non-compliance remains at approximately 26%.[3] A model that incorporates how the quality of the client-HCP relationship affects behavioural change and client compliance may provide valuable insight into increasing the rate of compliance.

## Critique of the literature

### *Strengths*

To enhance the validity of their research findings,

**Table 2.** Themes associated with decreased client compliance

| Themes | Examples |
|---|---|
| Lack of trust | • failing to respond to client concerns promptly<br>• demonstrating a judgmental, insincere, and/or indifferent attitude towards the client<br>• failing to maintain client confidentiality |
| Difficulty talking to provider and feelings of disconnection | • discomfort and difficulty asking questions<br>• minimal level of communication<br>• detached and strictly professional relationships<br>• perception of HCPs as unapproachable, defensive, lacking empathy, impersonal, cold, and distant |
| Paternalistic attitude | • inadequate to no collaboration and shared decision making<br>• HCP-centred rather than client-centred care<br>• Insufficient incorporation of clients' health beliefs, opinions or preferences<br>• mechanical, business-like, brusque, and aggressive HCP behaviours |
| Inadequate communication | • unclear and/or conflicting information<br>• incomplete or partial information regarding diagnosis, disease progression or treatment outcome |

researchers implemented various strategies.[31] Examples from the reviewed studies include pilot testing and member checking.[10-12,20-22] Researchers utilized pilot studies to test the interview guides.[31] Member checking involves soliciting feedback from participants in order to verify the accuracy and interpretation of findings, with the intention of reducing researcher bias.[31] Researchers recruited participants from treatment centres, waiting rooms, hospitals, pharmacies or physician referrals based on their ability to provide the needed information about the client–HCP relationship and how it affects client compliance.[1,2,10,12,15-18,20-22,24,27] This method of sample selection, known as purposive sampling, is commonly used in qualitative studies as it allows researchers to explore specific contexts and phenomena by selecting participants who can provide the needed information.[31] Data collection occurred most commonly through semi-structured focus groups and individual interviews using open-ended questions.[1,2,17,20,22,27] This method provides researchers with the flexibility to fully explore participants' experiences, beliefs, and attitudes in an attempt to achieve data saturation, the point at which no new information or themes emerge.[31,32] To further enhance trustworthiness and reduce potential for researcher bias, more than one investigator often collected and coded data.[17,18,20,27]

### *Limitations*

Although purposive sampling methods were used to select participants, many studies used convenience sampling methods.[1,2,9,10,12,16-18,20-22,24] Convenience samples, which are selected solely on participants' availability, limit the ability to capture a heterogeneous sample. Such a sample limits "internal generalizability"; that is, generalizing across the participants in the study.[31] Many quantitative studies utilized a cross-sectional design, which limits causal inferences and does not allow researchers to explore how the client–HCP relationship develops over time.[8,9,11-14,21] The process and length of time required to develop a trusting client–HCP relationship remain unclear. The final limitation involves the categorization of trust/distrust and adherent/non-adherent as dichotomous data.[8,11,13,14,24] Trust and adherence are both thought to occur on a continuum, and polarizing these terms may not allow researchers to fully explore and understand the data.[2,33] Ingersoll and Heckman suggest that "adherence can best be understood as a set of related behaviours, and due to the lack of a single gold-standard for adherence measurement, multiple markers of adherence should be used to fully characterize the behaviours."[21, p. 92] The lack of a consistent scale to assess adherence levels makes it difficult to compare findings across the studies in a meaningful and measurable way.

## Research gaps

How the quality of the client–HCP relationship affects client compliance within the field of dental hygiene is a largely unexplored area. Although research conducted in other health disciplines may provide insight for the dental hygienist, specific studies pertaining to this relationship within the field of dentistry are lacking. Among the studies reviewed, Muirhead et al. conducted the only study that explores how this relationship affects compliance to dental treatment.[8]

Quantitative research dominates the existing body of knowledge surrounding the client–HCP relationship and client compliance; such research focuses on measuring and assessing rates of adherence, prognoses, and outcomes of care.[1,2,18] Although this provides valuable information about how often HCPs are able to achieve client compliance, it does little to explain why and does not explore the contributing factors that can improve compliance.

Current research is mostly silent on how the client–HCP relationship develops over time. Nearly half of the studies included in this review assessed this relationship using a cross-sectional approach, which makes it difficult to explore how this dynamic relationship evolves. In the context of this literature review, Matthias et al. conducted the only study that considers the HCP's perspective within the client–HCP relationship; the remainder of the studies assess this relationship from the client's perspective. Adherence to treatment is a shared concern, and establishing a high-quality relationship requires commitment from both the client and the HCP.[10,20] Exploring the HCP's perspective could yield valuable results about how to improve relationships and increase client compliance.

## Future areas of research

As health care is now recognizing the importance of clients' perceptions of their own health, and not only the clinical indicators of disease, understanding the client–HCP relationship is a growing priority.[8] Evidence-based decision making is essential in the delivery of dental hygiene services, and there is a need for future research to inform the development of theories specific to the dental field that incorporate attributes of the client–HCP relationship. In order to effectively assess how the quality of the client–dental hygienist relationship affects client compliance, future research should include both quantitative and qualitative experimental designs, as both methods can investigate this topic employing equally important yet differently framed research questions. Whereas quantitative research sets out to investigate "how much" or "how often," qualitative research can explore the "why" and "how" of social contexts and relationships.[31] Future qualitative research should explore the quality of this relationship from both the client's and HCP/dental hygienist's perspectives, evaluate how this relationship changes over time, and seek to understand how these changes influence client compliance. Researchers should also consider employing longitudinal study designs in order to gain a better understanding of this relationship and compliance levels over time. The dental environment may present unique challenges to attaining high levels of compliance, and future research studies should investigate

multiple treatment recommendations and measures of adherence. These investigations could generate results that may guide future quantitative inquiries, which in turn may produce results that can be generalized to larger populations and help to establish theories and methods for improving the client–dental hygienist relationship. Client–HCP relationships and client compliance "[are] a complex phenomenon influenced by multiple determinants." [1, p.9] Researchers should continue to strive to identify relationship attributes that influence compliance in an effort to help HCPs develop and implement improved practice strategies to increase client compliance.[10]

## CONCLUSION

Findings from this review suggest that client–HCP relationships that demonstrate effective communication, client-centred care, shared decision making, and trust improve client compliance. Relationships that lack trust and effective communication, are disconnected, and paternalistic decrease compliance. These themes remain consistent across various samples, treatment recommendations, and health disciplines.

Non-adherence to treatment is a major public health problem, "seriously undercutting the benefits of care."[27, p.209] Client compliance plays a significant role in the success of periodontal therapy, including minimizing alveolar bone loss and preventing tooth loss.[4-6] Results suggest that interventions aimed at improving the quality of the client–HCP relationship may be the key to increasing client compliance. Evidence indicates that HCPs can be educated to interact more effectively with their clients and improve the quality of these relationships by targeting the specific aspects of the client–HCP relationship associated with improved compliance.[2,12] This improvement requires a shift away from the traditional paternalistic client–HCP relationship to one that encourages clients to play an active and collaborative role in their care.[2,12] These findings should be the catalyst for future research to investigate the success of such interventions and determine the extent to which these results apply to other health care settings, including the dental environment.

It is important for dental hygienists to understand the pivotal role they can play in improving client compliance. Dental hygienists need to be cognizant of the way they interact and form relationships with clients. Entry-to-practice and continuing dental hygiene education that extends beyond clinical skills and focuses on how to improve communication, develop a client-centred approach that supports shared decision making, and establish trust is central to creating quality relationships and improving client compliance.[2]

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# Implementation of a pharmacist-taught pharmacology course as a strategy to prepare dental hygiene students for potential expanded scope of prescriptive authority

**Casey L Sayre***, PharmD, PhD; **Christopher Louizos***, BScPharm, PharmD; **Joanna Asadoorian**[§], PhD, RDH; **Neal M Davies***, BScPharm, PhD

## ABSTRACT

As prospective members of a health care profession that is experiencing expanded scope of practice, dental hygiene students in Canada require supplemental training to prepare for new and advancing roles. In order to prepare dental hygiene students for potential limited prescriptive authority in Manitoba, a novel pharmacist-taught pharmacology course was developed and delivered. Course learning objectives were mapped and designed to incorporate the national entry-to-practice competencies and standards for dental hygienists. Using a single dental hygiene pharmacology text and licensed pharmacist academics as instructors, an innovative course was successfully implemented with positive outcomes and favourable perceptions of benefit among students.

## RÉSUMÉ

À titre de membre prospectif d'une profession de la santé dont les champs de pratique sont plus vastes, les étudiants en hygiène dentaire au Canada requièrent une formation supplémentaire afin qu'ils puissent être prêts à jouer des rôles nouveaux et en évolution. Dans le but de préparer les étudiants en hygiène dentaire à l'égard d'une autorité potentielle en matière de prescription des médicaments au Manitoba, un cours unique a été élaboré et mis en place, et a été donné par un pharmacien. Les objectifs d'apprentissage du cours ont été planifiés et créés en tenant compte des compétences et des normes nationales d'entrée en pratique des hygiénistes dentaires. À l'aide d'une seule ressource pharmaceutique et de pharmaciens certifiés à titre de professeur, un cours novateur a été mis sur pied avec succès, et la perception est favorable et positive de la part des étudiants, qui croient que le cours leur est profitable.

**Key words:** dental hygiene, expanded scope, pharmacology, pharmacy, prescribing

## INTRODUCTION

Advances in the dental hygiene scope of professional practice have recently included prescriptive authority for limited drug therapy. As of 2013, the Canadian Dental Hygienists Association reported that this advance has occurred to varying degrees in Alberta, New Brunswick, Nova Scotia, and Quebec with pending changes in Ontario.[1] In these provinces, dental hygienists are now able to prescribe antimicrobial, anticariogenic, and desensitizing agents for their clients.[1] In anticipation of the eventual implementation of this expanded scope of dental hygiene practice in Manitoba, faculty members from the School of Dental Hygiene collaborated with the Faculty of Pharmacy at the University of Manitoba to develop a new pharmacology course. Pharmacology instruction emphasizing both basic pharmacology principles and their clinical application to professional practice is essential for all professionals with prescriptive authority.[2]

In Manitoba, dental hygiene pharmacology has traditionally been taught by doctoral-level pharmacologists with no clinical training. As a result, instruction has focused on basic science without clinical application. As clinically trained health professionals, pharmacists are well positioned to provide relevant instruction in both the principles and real world application of pharmacology, and have been used in this context in many professional programs, such as physician assistant and advance practice nursing programs.[3,4] This experience is pertinent, as the new pharmacology course developed for dental hygiene students was implemented without changes to the academic prerequisites conventionally completed by the students at that point in the curriculum. In addition, because most dental hygiene students have little to no exposure to pharmacology, the course had to be delivered at a foundational level that would allow dental hygiene students to succeed in requisite knowledge transfer without being overwhelmed. These requirements, coupled with the already concentrated academic schedule characteristic of two-year dental hygiene programs, necessitated a careful balance. The vision and purpose of the course, then, was to lay a foundation for educational changes required in the dental hygiene curriculum to prepare future dental hygienists to provide safe, appropriate, and effective dental hygiene related drug therapy. This study assessed student ability to master the new pharmacology course

*College of Pharmacy, University of Manitoba, Winnipeg, MB
[§]School of Dental Hygiene, University of Manitoba, Winnipeg, MB

Correspondence to: Dr. Neal M Davies; neal.davies@umanitoba.ca
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as well as student perceptions of the benefits of having instructors with clinical expertise and course material with an expanded clinical orientation.

## CASE DESCRIPTION

A broad review of courses and textbooks used in dental hygiene pharmacology curricula in Canada and the United States was completed by personnel from the School of Dental Hygiene and the Faculty of Pharmacy at the University of Manitoba. Decisions regarding what content to include were made jointly, matching material with current practice applicability and avoiding overlap with other courses. The course content was delivered by licensed pharmacist instructors from the Faculty of Pharmacy. Components of the course were matched to each instructor's clinical and academic area of expertise. The course objectives incorporated principles of pharmaceutical care based on established models of professional pharmacy practice tailored to current and future needs of dental hygiene practice.[5] The objectives are listed as follows:

1. Describe the therapeutic use, mechanism of action, pharmacokinetics, adverse effects, and potential interactions of drugs commonly used in dental practice.
2. Discuss the implications on dental interventions of any drugs being taken by dental hygiene patients.
3. Demonstrate the ability to find, using appropriate resources, accurate, relevant, and necessary information about unfamiliar drugs and apply that information to dental hygiene patients.

The national entry-to-practice competencies and standards for Canadian dental hygienists were also used as a reference to assist in the creation of the objectives and ensure their applicability to clinical practice needs.[6] The specific competencies identified for integration and the objectives to which they apply are listed in Table 1.

## DISCUSSION

*Applied Pharmacology for the Dental Hygienist*, 6th edition, by Elena Bablenis Haveles was selected as the sole dental hygiene pharmacology text for the course given its potential to provide a consistent foundation of source material from which the individual instructors could draw and extrapolate.[7] Clinical case studies were a hallmark of each presenter, allowing the students to make immediate connections between basic pharmacologic principles and pharmacotherapeutic application.

Two classes of 26 dental hygiene students (52 students in total) registered for and completed the course in 2 separate years. A passing grade for the course was set at D in accordance with School of Dental Hygiene policy. All students received a higher than passing grade.

An exit survey was designed to assess the qualitative benefits perceived by dental hygiene students from having pharmacology material presented by pharmacists.

**Table 1.** Integration of entry-to-practice dental hygiene competencies into course objectives

| Competency | Pharmacology course objective(s) |
|---|---|
| C9. Apply the behavioural, biological and oral health sciences to dental hygiene practice decisions. | Objectives 1, 2, 3 |
| C13. Integrate new knowledge into appropriate practice environments. | Objective 3 |
| F4. Identify clients for whom the initiation or continuation of treatment is contra-indicated based on the interpretation of health history and clinical data. | Objective 2 |
| F5. Identify clients at risk for medical emergencies and use strategies to minimize such risks. | Objectives 2 and 3 |
| F7. Discuss findings with other health professionals when the appropriateness of dental hygiene services is in question. | Objectives 2 and 3 |
| F9. Establish dental hygiene care plans based on clinical data, a client-centred approach and the best available resources. | Objective 2 |
| F11. Provide preventive, therapeutic and supportive clinical therapy that contributes to the clients' oral and general health. | Objectives 2 and 3 |

The survey consisted of the following 5 statements.

1. I have found the course intellectually challenging and stimulating.
2. I have learned something which I consider valuable.
3. My interest in the subject has increased as a consequence of this course.
4. I have learned and understood the subject materials of this course.
5. Having pharmacists present the material was clinically meaningful.

The students were invited to respond to the statements using the following six-point scale.

- N/A
- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree

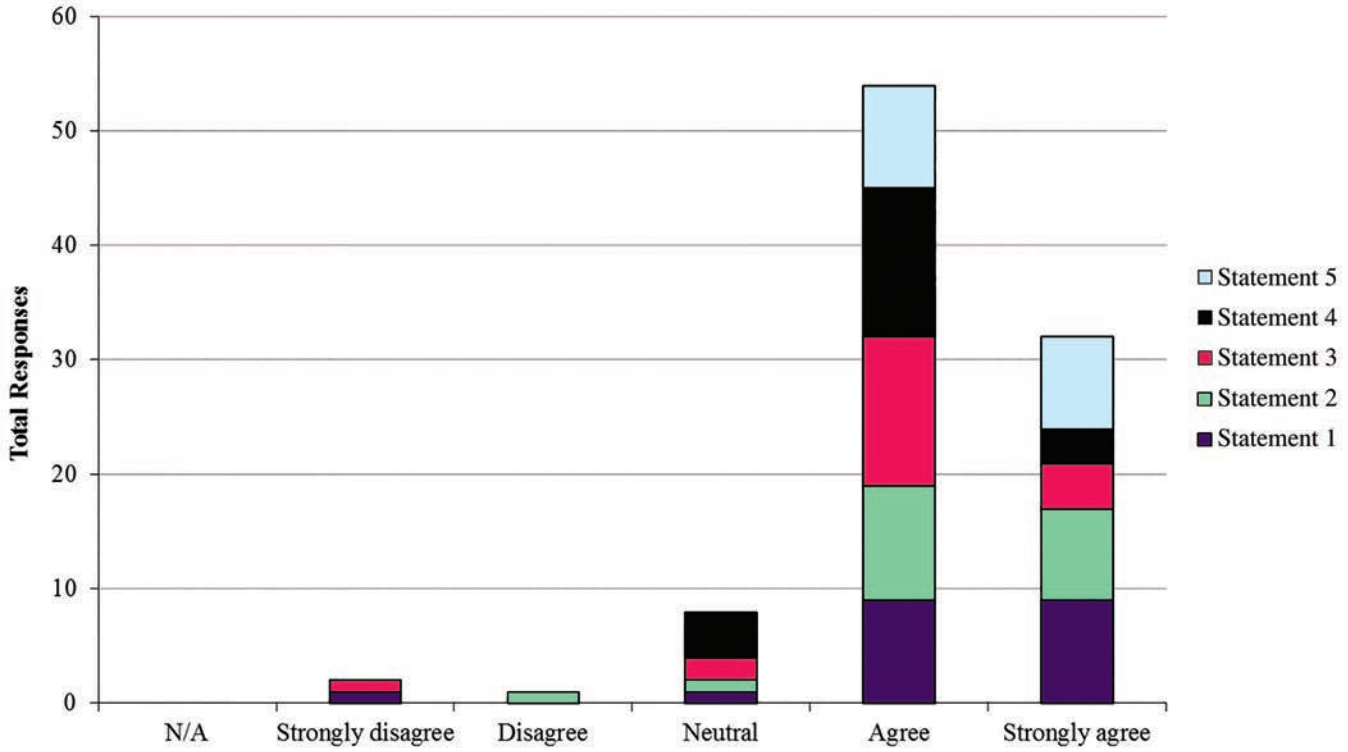
Twenty of the twenty-six students completed and returned the survey from the first class (Figure 1). The responses from the second class were not recorded by the School of Dental Hygiene for administrative reasons.

All registered dental hygiene students completed the course successfully. Twenty of the twenty-six students surveyed in the initial course reported supportive perceptions of benefit on the exit survey. Of significance, all students who returned feedback for statement 5 reported that having pharmacists deliver the pharmacology curriculum was clinically meaningful. Future research comparing previous student performance on the pharmacology portion of the national licensing exam is in the planning stages.

## CONCLUSION

The novel pharmacology course for dental hygiene students, created jointly by the School of Dental Hygiene and Faculty of Pharmacy at the University of Manitoba, was developed and implemented. Successful delivery, as indicated by the student pass rate and perceptions of benefit, suggests that the course content was level appropriate while simultaneously increasing student understanding of pharmacology principles and their clinical application to potential prescribing in professional practice. Students reported a high perception of value to future clinical practice. This study also suggests that it would be possible to improve dental hygiene pharmacology training within the time constraints of current curricula. A greater role for clinical pharmacists versus non-clinical pharmacologists in the delivery of pharmaceutical education of other health care professionals is achievable and should be considered or extended at academic health care centres in order to enhance the preparation of future prescribers.

**Figure 1.** Survey responses from 20 students regarding perceived benefit of a pharmacist-taught pharmacology course



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# Get sharp: Nonsurgical periodontal instrument sharpening

*By* Marisa Roncati
*Milan: Quintessenza Edizioni; 2011. 123 pp including references, self-assessment questions.*
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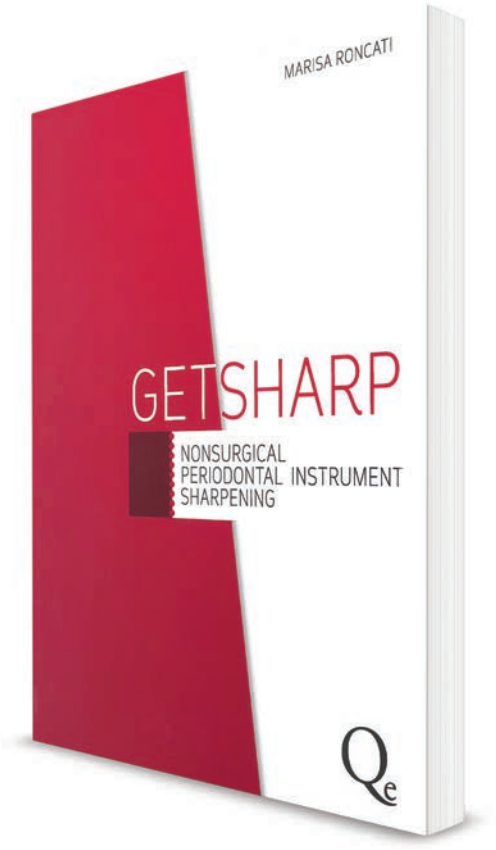



Marisa Roncati, the author of *Get sharp: Nonsurgical periodontal instrument sharpening*, has a degree in classical literature and graduated from Forsyth School of Dental Hygiene in Boston, USA, before obtaining her degree in dentistry and dental prosthesis (DDS) from the University of Ferrara, Italy. She is currently an assistant professor in the School of Dental Hygiene at the Universita Politecnica delle Marche, and a lecturer at the University of Bologna, the Sapienza University of Rome, and the University of Padova.

The purpose of Roncati's book is to thoroughly, yet simply, describe techniques for sharpening nonsurgical periodontal instruments. She uses clear didactic explanations and good illustrations, in the belief that high-quality illustrations and schematics will help students avoid sharpening mistakes that modify the characteristics of the instrument, jeopardize its efficiency, and negatively influence tissue healing. In addition, she emphasizes that understanding the proper sharpening technique is a good investment that will extend the life of an instrument, reduce operator fatigue, and contribute to complete calculus removal and subsequent tissue healing.

The book's cover is attractive and nicely formatted. The red, white, and black type used throughout is clear and easy to read. The preface of the book distinctly outlines its intentions. The table of contents has the chapter numbers and page numbers arranged in a way that I found a little confusing, and would benefit from a more traditional layout. The book contains six chapters and 30 self-assessment questions (with answers) which, along with the illustrated cards, may be helpful to students in their studies. All in all, the layout of the book is crisp, clean, and uncluttered.

The illustrations—pictures and diagrams—are large, clear and detailed and therefore easily interpreted. Ideally, the illustrations should be numbered in the text, allowing the reader to look to the correct picture. Instead they are referred to as the figure on the left or right. I found this potentially confusing. The text is a mixture of paragraphs, lists, charts, and highlighted boxes. Preferably when lists are used they should be numbered or bulleted and not both as seen in the book. This mix of styles is unnecessary and clutters the text.

The content progresses from the purpose of instrument sharpening, including disadvantages and advantages, to suggestions of when to sharpen in order to maintain sterility while sharpening. The book contains an excellent description of the armamentarium used for sharpening. The author does not miss details in describing the anatomy of nonsurgical periodontal instruments in relation to the sharpening angles. Sharpening errors and corrected sharpening techniques complete the book's content. These areas are all presented thoroughly; all are interesting and appear to be accurate (e.g., the work is cited and includes a

reference page) and applicable to dental hygiene practice.

Unfortunately, the most significant shortcoming of the book is the writing, which betrays the fact that the author is not writing in her native language. The text contains numerous spelling and grammatical errors which detract from the information being conveyed. For example, in chapter two under the heading, "When Sharpen?" card number one refers to "cures" instead of curettes. In some instances, the sentence structure is incorrect; in others, run-on sentences, repetitive phrasing or the improper use of punctuation weaken the discussion. In addition, the language used is colloquial in areas, which could be considered too informal for a textbook. Finally, the author expresses her personal opinion regularly rather than stating a strictly clinical description of the instruments or sharpening procedures.

In summary, the book would be particularly useful for the dental hygiene student. The author did achieve her goal of simplifying sharpening techniques through excellent illustrations and detailed schematics, however *Get Sharp* needs extensive editing before I would recommend it for use in teaching dental hygiene students. The lack of proper sentence structure and grammatical and spelling errors detract from the overall value of this book.

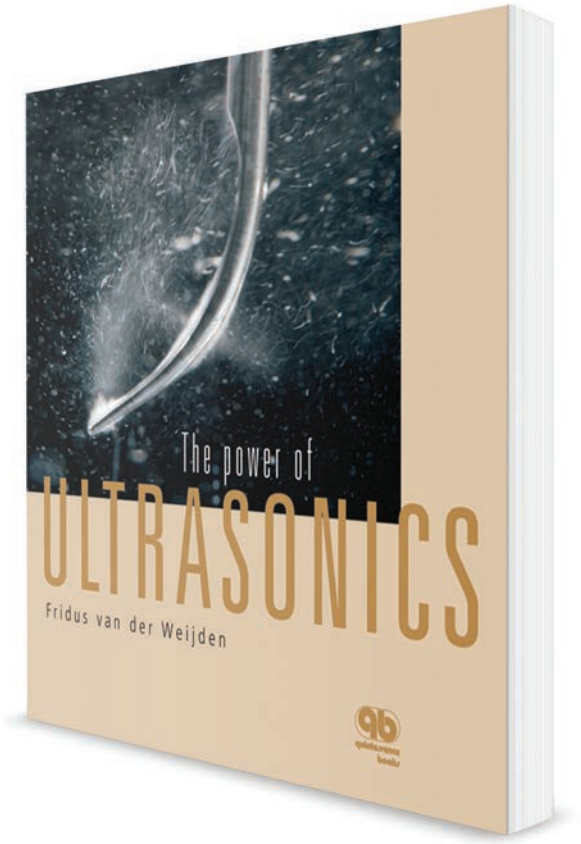
*Sarah Bell, RDH, is a dental hygienist in Cranbrook, British Columbia. She currently works at Baker Hill Dental.*

# The power of ultrasonics

*By* Fridus van der Weijden
*Paris: Quintessence Publishing Inc.; 2007. 80 pp (softcover)*
*ISBN 978-2-912550-51-4; available from Quintessence Publishing (www.quintpub.com)*

## INTRODUCTION

Ultrasonic scalers are used extensively by dental hygienists and for multiple reasons under the realm of efficiency and more effective periodontal therapy. Many different designs and types, not to mention uses, are available. In our field the ultrasonic peizoelectric and the ultrasonic magnetostrictive scalers are used. They can increase the operator's ability to instrument deep pockets and furcation areas thoroughly while using improved ergonomics, as well as improve client comfort and reduce removal of tooth substances. This is an important topic for the dental hygiene operator.




Keeping abreast of ultrasonic scaler technology is the purpose of Dr. Fridus van der Weijden's book, *The power of ultrasonics*. He clearly states the purpose of his book is to "present the mechanism, scientific basis, and correct use of ultrasonic instruments" and offers the reader key insights for their successful use. Unfortunately his audience is not dental hygienists, the main user of the tools, but rather dentists.

## SUMMARY AND ANALYSIS

There is no mention of the author's background, expertise, credentials or other works on the book's front or back covers, but a quick Internet search reveals that his specialty is periodontics. He has worked since 1986 with the Clinic of Periodontology Utrecht and the Academic Centre for Dentistry Amsterdam (ACTA). An accomplished professor and researcher who has authored or co-authored 70 national and 150 international publications, van der Weijden received the Carl Whittaus medal of honour in 2009 from the Ivory Cross for his work on the prevention and promotion of oral health.

The book is well organized and easy to read. Although there is no index, the table of contents allowed me to find information without difficulty. In addition to the good use of titles and subtitles, the orange, gray and white background colours are eye catching. My only complaint is that, when smaller type is used, the orange on gray or gray on orange design makes it difficult to see the text. The pictures, graphics, and illustrations are effective and support the information presented. I especially like the technique of having graphics start on one page and continue onto the next. In addition, the use of contrasting backgrounds creates a 3D effect in some of the illustrations (see, for example, the illustration of the working parts of the piezoelectric ultrasonic handpiece on page 16).

The author starts with a brief history of the development, uses, and introduction of ultrasonic instruments for medical and dental applications. From here he proceeds to explain how piezoelectric and magnetostrictive scalers work, including contraindications and their correct use in treating periodontal disease and maintaining oral health. This section makes up the bulk of the book and is quite detailed. It is followed by new developments, such as handpieces providing illumination for better vision, and an overview of new research into the use of fibre optic

light to illuminate the tooth surface. Lastly, van der Weijden mentions the introduction of plastic and carbon fibre tips for the cleaning of implants and periodontal maintenance care. I would like to read more on this topic as it is of interest to me and not a review as the rest of the book provided.

Finally, there is a very brief overview of other uses for ultrasonics in endodontics (irrigation of canals, periapical surgery, and condensing gutta percha, etc.) and general dentistry (enhanced setting of glass ionomer cement). This area was of limited interest to me as a dental hygienist, but it is nonetheless important to know what dentists are using in their field especially when we share the same ultrasonic technology.

The book includes a bibliography as well as suggested readings. My biggest critique of the book is the inconsistent citation of sources by the author. More references to supporting evidence in the literature would help the reader. For example, on several occasions, the author states, "Studies found..." with no citations to support which studies they were. The author refers to the peizoelectric EMS and SATELEC® magnetostrictive almost exclusively when giving examples but does not mention if those were used in the studies that are presented as supporting material and references. This issue could be addressed in a revised version of the text. In fact, because the book was published in 2007, it is necessarily "dated." It would be interesting to see a revised edition that presents more current research on this topic with complete citations.

## ASSESSMENT

The book offers an interesting review and is easy to read but, because of the lack of citations to support statements made, I wonder if a good peer-reviewed journal article on ultrasonics would be a more appropriate read for dental hygienists. Although this is not a book that I would purchase for my collection, I will research some of the "new developments" that are mentioned. For example, I'd like to know more about the availability of ultrasonic fibre optic handpieces as well as the availability and application of plastic tips and carbon fibre tips.

*Carol Hyde, BS, RDH, lives in Cranbrook, British Columbia, and is a full-time dental hygienist in private practice.*

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1 Delaurenti M, et al. An Evaluation of Two Toothbrushes on Plaque and Gingivitis. Journal of Dental Research. 2012, 91(Special Issue B):522.
2 Data on file, 2010

# Private dental hygiene education in Canada

Dear editor,

First, we want to acknowledge the importance of the *Canadian Journal of Dental Hygiene* to our professional and academic lives. As long time members of the Canadian Dental Hygienists Association (CDHA), we value the opportunity to document the deficits in the recent editorial by Ms Hayre, "Using an evidence-based approach to advise potential dental hygiene students" (*Can J Dent Hyg*. 2015;49[3]:95–98).

The content and tone of the editorial appear to discredit the education of many CDHA members. Ms Hayre has labeled private programs as "private for-profit institutions" and implies that private schools are of a different standard due to inherent differences with regards to "layers of accountability and reporting requirements." Perhaps Ms Hayre does not realize that private schools have Commission on Dental Accreditation of Canada (CDAC) survey visits every 4 years as opposed to the publicly funded programs, which are scheduled for CDAC survey visits every 7 years.[1] In addition, in Ontario, private career colleges are governed by the Ontario Ministry of Training, Colleges and Universities (MTCU) with regards to instructor qualifications, admission requirements, student rights, and facilities.[2] An instructor employed by a private career college must meet the qualification prescribed in s.41 Reg. 415/06.[3]

Ms Hayre states that "private schools must not only balance their books, but also turn a profit to stay in business; therefore, many instructional decisions may be restricted by financial concerns." This statement, provided without evidence, discredits the curriculum, the faculty, and the education of the graduates. In addition, by stating "... a number of good schools," Ms Hayre shows her preference for some schools.

While the photograph accompanying the editorial acknowledged that Ms Hayre was, at time of writing, president of CDHA, ethically there should have been a conflict of interest statement so that the readers could determine the origin of her bias. The Camosun College faculty web page states that Ms Hayre is an educator, a member of the British Columbia Dental Hygienists' Association board of directors, and on the exam committee for the National Dental Hygiene Certification Board.[4] Additionally she is reported to be a site surveyor for CDAC, an examiner and investigator for the College of Dental Hygienists of British Columbia, and a delegate representing Canada at the International Federation of Dental Hygienists.

In closing, we do not believe that the inclusion of this opinion piece in the official peer-reviewed publication of the Canadian Dental Hygienists Association served the scientific or professional interests of dental hygienists in Canada.

**Nanette Feil-Megill, BSc, DDS, RRDH**
*Ottawa, Ontario*

**Kathleen Feres Patry, DipDH, CAE, RDH**
*Kanata, Ontario*

**Heather L Robertson, DipDH, RDH**
*Kanata, Ontario*

## ACKNOWLEDGEMENTS

Kathleen Feres Patry would like to thank Mandy Hayre for personally contacting her to discuss specific concerns. Nanette Feil-Megill thanks Mandy for attempting to contact her and hopes to talk to her in the New Year.

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Dear editor,

As the co-owner and dean of students of both the Toronto College of Dental Hygiene and Auxiliaries Inc. and the Vancouver College of Dental Hygiene Inc., I have serious issues with the editorial written by Mandy Hayre, entitled "Using an evidence-based approach to advise potential dental hygiene students," and published in the *Canadian Journal of Dental Hygiene* in October 2015 (*Can J Dent Hyg*. 2015;49[3]:95–98).

My first concern is with the title of the editorial, as the editorial is far from being evidence based. It is merely the opinion of one individual. The author claims that she is helping potential dental hygiene students make an evidence-based decision on which dental hygiene college to attend, but she does not have the evidence to support her claims. Hayre states that she is often asked "which dental hygiene school offers the 'best' education," and she admits that "it's a difficult question to answer without showing bias." Unfortunately, although she realizes that avoiding bias is difficult, Hayre makes no effort to avoid bias in her response.

She goes on to state, "Here are some factors that applicants should think carefully about when deciding on their dental hygiene school of choice." Most are valid factors such as the locations of facilities and institutional supports. However, when she compares public and private institutions she clearly implies that privately funded dental hygiene colleges are inferior in terms of the education they currently provide. Hayre, who at the time of writing the editorial was the president of the Canadian Dental Hygienists Association, states, "An inherent difference between private for-profit institutions and publicly funded institutions is found in their layers of accountability and reporting requirements." This clearly implies that publicly funded institutions somehow have more layers of accountability and reporting requirements than private institutions. Where is her evidence-based research to support this statement?

The Commission on Dental Accreditation of Canada mandates that private dental hygiene schools go through the accreditation process every 4 years, while public schools only go through the same process every 7 years. This means that privately owned colleges are evaluated by the same regulatory organization nearly twice as often as their public counterparts. In addition, private schools in Ontario report to the Ministry of Training, Colleges and Universities, and private schools in British Columbia report to the Private Career Training Institutions Agency.

Private schools are expected to submit annual reports and "key performance indicators." The Toronto College of Dental Hygiene and Auxiliaries Inc. is subject to a full financial audit by a third party every single year. The same is to be required for the Vancouver College of Dental Hygiene Inc. in 2016. We report to the International Student Program and every provincial loan program for every province, and we abide by all of their reporting requirements and levels of accountability. We are also accountable to our regulatory colleges, our faculty, our clients, our community, and our students. I feel that Ms Hayre should have explained how there are more levels of accountability in publicly funded institutions and give evidence to support her claims about accountability.

Hayre continues, "Moreover private schools must not only balance their books, but also turn a profit to stay in business; therefore, many instructional decisions may be restricted by financial concerns." This statement is offensive not only to me and to all of the hard-working members of our two colleges, but also to all other privately run institutions in Canada. I would like Ms Hayre to provide evidence of instructional decisions that have been restricted by financial concerns at our colleges. Without supporting evidence, her assertions are unjustified.

While I do agree with Ms Hayre that students should thoroughly investigate any college they may want to attend, the problems of a small number of privately run institutions cannot be extrapolated to all others. Publicly funded institutions have also had their share of problems. In British Columbia, the University of the Fraser Valley had a dental hygiene program but closed it. The College of New Caledonia has suspended its dental hygiene program for 2 years now due to a $2.8 million deficit and will not provide any guarantee that the program will be reopened in the future.

Of course, I can only speak for the Toronto College of Dental Hygiene and Auxiliaries Inc. and the Vancouver College of Dental Hygiene Inc. We have worked hard over the past 10 years towards our goal of providing the best dental hygiene education possible for our students. We are constantly striving to improve, and our efforts have been recognized by our success and continued expansion. Private education has been shown to be an integral and highly respected part of Canada's educational system in other areas, such as private high schools and universities. Private dental hygiene education can and should command the same respect.

Sincerely,

**Dr. Boris Pulec**
*Dean of students,*
*Toronto College of Dental Hygiene and Auxiliaries Inc.*
*Vancouver College of Dental Hygiene Inc.*

## The author responds

Dear Dr. Feil-Megill, Ms Feres Patry, Ms Robertson, and Dr. Pulec,

Thank you for your letters. It is wonderful to have the opportunity for dialogue about the editorials I have written in the journal; fortunately, all of them have generated discussion with my colleagues across Canada. As an educator, I have focussed all of my editorials on different aspects of dental hygiene education, including the use of technology in the classroom, research in dental hygiene education, careers in dental hygiene education, and using evidence to advise potential dental hygiene students. I can assure you that I take the concerns of all those who have responded to my editorials very seriously.

I regret that you felt my editorial was negative towards private schools. This was certainly not its intent. The purpose of the editorial was to emphasize that a good fit exists for every potential student; that there is not one "best" school of dental hygiene. It was intended to serve as a guide for dental hygienists who are asked to advise potential students on how to choose a dental hygiene school. I believe that we should encourage candidates to take personal responsibility for their education and make their own evidence-based decision, guided by a list of factors to consider in the context of their personal circumstances. By investigating and reflecting carefully on the suggested factors, future students will have the information with which to make an informed decision, as no two schools are alike regardless of whether they are private or public.

The last two decades have seen enormous change in the delivery options available for dental hygiene education, making decisions more complex and difficult when choosing where to study. In this era, students as consumers need to be well informed before making a choice. My editorial was aimed at helping future students, and provided guidance for conversations with candidates seeking to identify their dental hygiene school of choice. This information is rarely available in one location, and this editorial was meant to fill that void. For example, choosing an accredited school is a reasonable assurance that the education offered there will follow recognized standards of quality. Most students are not familiar with the concept of accreditation, but should be, no matter what their chosen field of study. My editorial highlighted this fact.

It is important to remember that an editorial is, by definition, an "opinion piece" and is written by invitation only. An opinion piece provides a point of view by an expert who, by virtue of education and experience, has the recognized ability to comment on a particular subject. This editorial articulated my views on this topic, based on my professional experience, and was not intended to represent the views of either the Canadian Dental Hygienists Association or the *Canadian Journal of Dental Hygiene*. This editorial was reviewed and approved by the editors of the journal as objective and informative. It was not written to discredit past graduates or any dental hygiene program, but rather to prepare those who are considering a future career in dental hygiene.

The editorial offered a positive outlook, clearly stating that "Both types of institutions [public and private] can offer quality programs, and either one may meet a student's individual needs" (p. 96). The editorial ends with the personal comment: "I also like to advise students that if they are considering a number of good schools, there is no harm in applying to more than one as this may get them into a program sooner—which means starting their chosen career sooner!" (p. 98). Of course, the mention of "good" means that the applicant will have narrowed down the choices to the schools that are a good fit for him or her.

I highly value the contributions of private schools as well as of public institutions to the progress of the profession, because we all share the same values. We all exist to prepare new generations of dental hygienists who will contribute to clinical practice, research, and education for the care and health of the population.

I thank you for taking the time to share your opinions, and would like to assure you that I value and respect all journal readers' opinions.

Sincerely,

**Mandy Hayre, DipDH, BDSc, PID, MEd**
*Past president,*
*Canadian Dental Hygienists Association*

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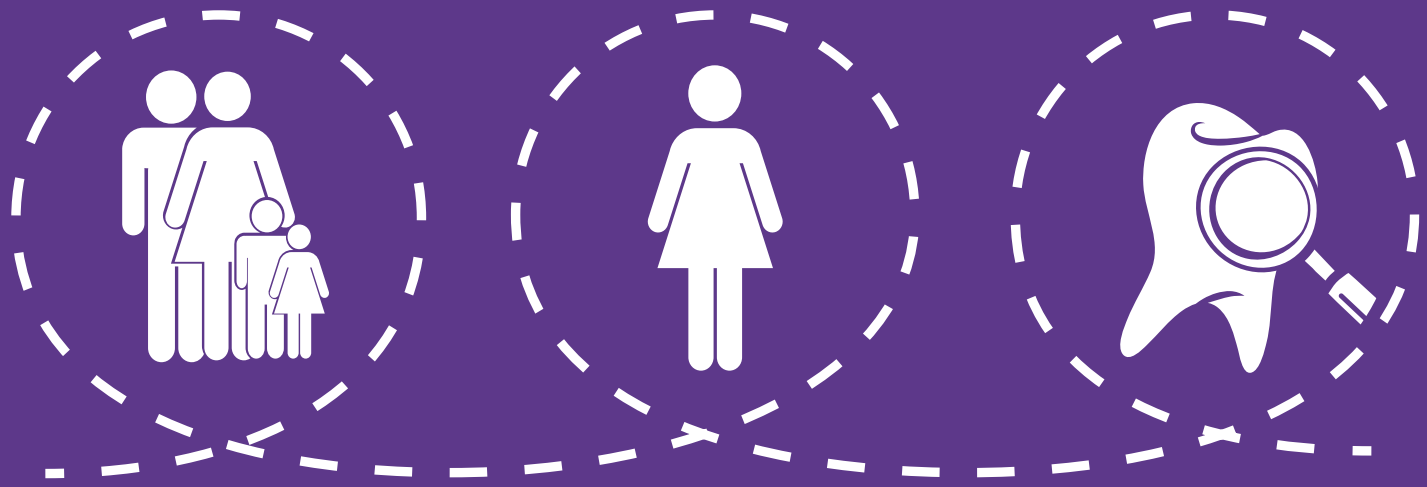

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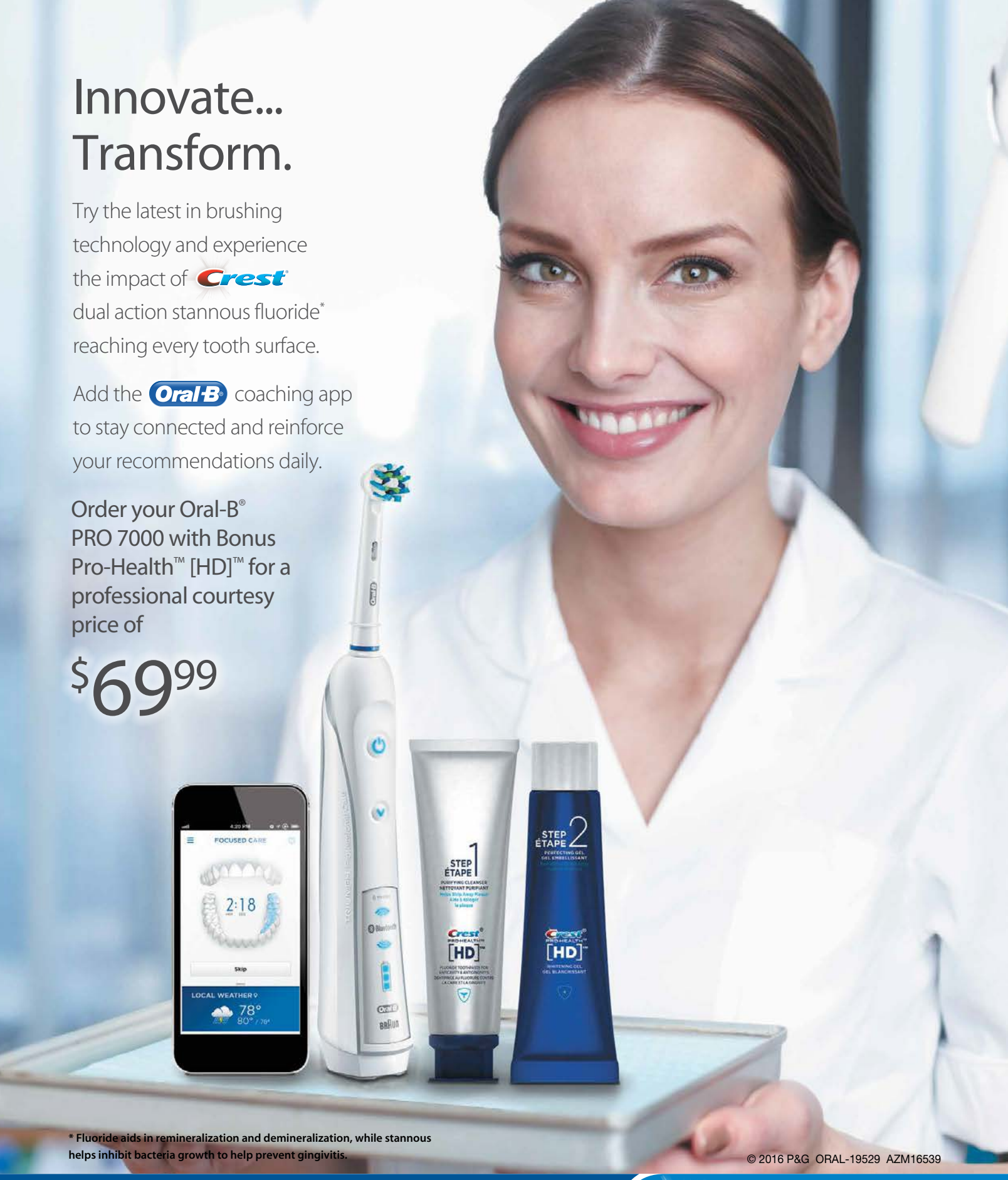


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## JOURNAL ARTICLES

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Orban B, Manella VB. A macroscopic and microscopic study of instruments designed for root planing. *J Periodontol.* 1956;27:120–35.

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**Personal authors**

Hooyman NR, Kiyak HA. *Social gerontology: A multidisciplinary perspective*. 6th ed. Boston: Allyn & Bacon; 2002.

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Cairns J Jr, Niederlehner BR, Orvosm DR, editors. *Predicting ecosystem risk*. Princeton (NJ): Princeton Scientific Publications; 1992.

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Weinstein L, Swartz MN. Pathological properties of invading organisms. In: Soderman WA Jr, Soderman WA, editors. *Pathological physiology: Mechanisms of disease*. Philadelphia: WB Saunders; 1974. p. 457–72.

**Conference paper**

Calder BL, Sawatzky J. A team approach: Providing off-campus baccalaureate programs for nurses. In: Doe AA, Smith BB, editors. *Proceedings of the 9th Annual Conference on Distance Teaching and Learning*; 1993 Sep 13–15, Ann Arbor, MI. Madison (WI): Ann Arbor Publishers; 1993. p. 23–26.

**Scientific or technical report**

Murray J, Zelmer M, Antia Z. *International financial crises and flexible exchange rates*. Ottawa: Bank of Canada; 2000 Apr. Technical Report No. 88.

## OTHER PUBLICATIONS

**Newspaper article**

Rensberger B, Specter B. CFCs may be destroyed by natural process. *The Globe and Mail*. 1989 Aug 7;Sect. B:24.

**Audiovisual**

Wood RM, editor. *New horizons in esthetic dentistry* [videocassette]. Chicago: Chicago Dental Society; 1989.

**Unpublished material**

Smith A, Jones B. The whitening phenomenon. *J Nat Dent*. (Forthcoming 2004)

## ELECTRONIC MATERIAL

**Monograph on Internet**

National Library of Canada. *Canadiana* quick reference [monograph on the Internet]. Ottawa: The Library; 2000 [cited 2015 Feb 16]. Available from: www.nlc-bnc.ca/8/11/index-e.html

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Walsh MM. Improving health and saving lives. *Dimens Dent Hyg* [Internet] 2003 Nov/ Dec [cited 2015 May 1]. Available from: www. dimensionsofdentalhygiene.com/nov_dec/saving_lives.htm

**Homepage/website**

Canadian Dental Hygienists Association [website]. Ottawa: CDHA; 1995 [cited 2015 Sep 25]. Available from: www.cdha.ca

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Le *Journal canadien d'hygiène dentaire* (JCHD) est une publication révisée par les pairs de l'Association canadienne des hygiénistes dentaires. Publié tous les quatre mois, le journal invite la présentation de manuscrits en anglais et en français sur des sujets relevant de la pratique, la théorie, la formation et la politique de l'hygiène dentaire. Les manuscrits devraient traiter de sujets d'actualité afin de contribuer de façon significative à l'ensemble des connaissances en hygiène dentaire et de faire progresser les bases de la pratique. Toute demande de renseignements préalables et toutes les soumissions doivent être adressées au journal@cdha.ca.

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Le JCHD accueille vos textes originaux concernant :

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## ARTICLES DE JOURNAUX

**Article standard**

Orban B, Manella VB. A macroscopic and microscopic study of instruments designed for root planing. *J Periodontol.* 1956;27:120–35.

**Volume avec supplément**

Orban B, Manella VB. A macroscopic and microscopic study of instruments designed for root planing. *J Periodontol.* 1956;27 Suppl 7:S6–12.

**Compte-rendu de conférence – Résumé**

Austin C, Hamilton JC, Austin TL. Factors affecting the efficacy of air abrasion [abstract]. *J Dent Res.* 2001;80(Special issue):37.

**Pas d'auteur**
What is your role in the profession? [editorial] *J Dent Topics*. 1999;43:16–17.

**Organisation comme auteur**
Canadian Dental Hygienists Association. Policy framework for dental hygiene education in Canada. *Probe*. 1998;32(3):105–7.

## LIVRES ET AUTRES MONOGRAPHIES

**Auteurs personnels**
Hooyman NR, Kiyak HA. *Social gerontology: A multidisciplinary perspective*. 6th ed. Boston: Allyn & Bacon; 2002.

**Éditeurs comme auteurs**
Cairns J Jr, Niederlehner BR, Orvosm DR, editors. *Predicting ecosystem risk*. Princeton (NJ): Princeton Scientific Publications; 1992.

**Chapitre d'un livre**
Weinstein L, Swartz MN. Pathological properties of invading organisms. In: Soderman WA Jr, Soderman WA, editors. *Pathological physiology: Mechanisms of disease*. Philadelphia: WB Saunders; 1974. p. 457–72.

**Texte de conférence**
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