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General Dentists’ Perceptions About Their Relationship With Specialists

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ABSTRACT

Introduction: This paper assesses the nature of the general dentist–specialist relationship, as perceived by general dentists in Canada.

Methods: A cross-sectional web-based survey was administered to general dentists across Canada who are part of the Canadian Dental Association register and who have consented to receiving email surveys (N/C25 11,300). Information including sociodemographic and practitioner- and practice-related factors was collected using a 47-item questionnaire. The general dentist–specialist relationship was conceptualised on the basis of 4 factors: communication, confidence, competition, and referrals. Descriptive analysis was conducted.

Results: The response rate for the survey was 11.7% (n = 1328). Most general dentists specified that specialists sent timely information/reports (93%), were partners in delivering care (64%), presented little competitive pressure (87%), and were strongly collegial (85%).

Conclusions: In general, the study demonstrated that Canadian general dentists held a positive perception of their relationship with the specialists.

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Introduction

The scope of responsibility and demarcation of duties between general practitioners and specialists in dentistry differ from those in medicine.1 The processes of consulting and/or referring, however, seem to share similar features. For instance, the referral process entails a relationship where 2 professionals are involved in the treatment of the same patient, with the generalist sending the patient to a specialist for professional support or assistance.2-4 Moreover, the relationship can be considered cyclical in nature, where the generalist and specialist repeatedly engage in interaction, exhibiting positive or negative attitudes and behaviours towards one another.4,5

Some early studies6-8 highlight the criteria used by general dentists when choosing to refer a specialist. These factors include the following: the specialist’s reputation for producing quality results, positive feedback from patients, the specialist’s clinical expertise, and timely communication.5,8 In a survey conducted by the American Association of Orthodontists, most general dentists stated that the specialist’s treatment philosophy, their ability to provide superior quality of care, and having a good relationship with the specialist were critical in influencing their decision to refer.8

Whilst studies9-11 have identified a number of factors that influence general dentists’ referrals and clinical treatment decisions, there is a scarcity of literature about what constitutes a positive relationship between general dentists and specialists. Apart from communication and professional expertise, other factors that may assist in ensuring a positive interprofessional relationship between general dentists and specialists include the practitioners’ demeanor, willingness to communicate, and mutual respect.6,7

It appears reasonable to assume that general dentists’ perceptions of specialists (and vice versa) direct the relationship between them.3,8 For example, positive perceptions between both practitioners can result in developing trust and confidence. According to Goldenberg,8 trust develops through conscious mutual effort and is built on the basis of behaviour.

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and an exchange of information between individuals. Applying the same to the general dentist–specialist relationship, trust arguably builds over time and is a result of different experiences between both practitioners. Consequently, trust and confidence amongst practitioners ensures enhanced understanding and reliability of shared information.12

Fostering interprofessional relationships is crucial in health care settings as they improve collaboration.8,12 D’Amour et al.12 describe collaboration as a broad term with underlying aspects such as sharing, partnership, and interdependency. In the context of the general dentist–specialist relationship, effective collaboration can be viewed as a combination of these factors. First, sharing implies a collective effort directed towards a common goal, that is, delivery of patient care. Second, partnership involves honest communication and mutual trust and respect whilst pursuing the common goal.12 Similarly, collegiality is typically referred to as the cooperation or collaboration between colleagues who share a responsibility.13

Given all of the above, it is concerning that, anecdotally, some argue that the existing general dentist–specialist relationship is potentially threatened due to evolving trends in the dental care market.14 These trends may be attributed to decreasing dentist-to-population ratios, the rising costs of running a dental practice, as well as corporatisation, entrepreneurialism, and commercialism in dentistry.5,14 As a result, dental professional organisations in Canada are noticing increasing competition amongst practitioners as well as decreasing collegiality amongst general dentists and specialists.14 The objective of the study was to assess the nature of the general dentist–specialist relationship. This paper presents the findings of a descriptive analysis from a web-based survey of Canadian general dentists. The rationale of this study was to inform dental organisations in Canada about the current state of the interprofessional relationship between general dentists and specialists.

**Methods**

This cross-sectional study was conducted as part of a partnership between the Canadian Dental Specialties Association, the Canadian Dental Association (CDA), and the Faculty of Dentistry, University of Toronto. A web-based survey was used to collect information from general dentists in Canada. The study was approved by the University of Toronto Research Ethics Board (protocol #37318). In early 2019, a survey link was sent by the CDA via email to all general dentists in the 2018 CDA register who consented to receiving requests for surveys (N ≈ 11,300). Dentists were directed to a third-party survey platform (ZohoSurvey) to complete the survey, and clicking through to the survey was taken to imply consent. A reminder email was sent after 2 weeks. The sample size was calculated on the basis of the following equation: 

\[ n = \frac{(Np)(p)(1-p)}{(Np-1)(B/C)^2} + (p)(1-p) \]

where \( N_p \) represents the size of the population, \( p \) is the proportion of the population (50%) expected to choose 1 of 2 response categories, \( B \) is the sampling error (3%), and \( C \) is the \( z \) statistic (1.96) of the confidence interval.15 Assuming maximal variation and a standard confidence interval of 95%, 976 responses were required to ensure adequate representation.

Factors identified through the literature review, as well as those hypothesised to influence the general dentist–specialist relationship, as listed in the Figure, drove the development of a 47-item survey questionnaire. Due to the absence of studies that assessed the general dentist–specialist relationship directly, factors shown in the literature to play a role in influencing referrals and clinical decisions were included.9-11,16,17

![Table 1: Influencing Factors](image)

| Influencing Factors | Environmental | Patient related | General dentist related | Practice related |
|---------------------|---------------|-----------------|-------------------------|-----------------|
| Health care system  | Socioeconomic status | Age | Ownership |
| Geographic location | Dental insurance | Gender | Practice setting |
| Dental care market  | Affordability | Income | Number of employees |
|                     | Need           | Marital status | Presence of specialists |
|                     | Demand         | Number of dependents | Distance from the specialist |
|                     | Preferences    | Place of Initial training | Insurance makeup of the patients |
|                     | Attitudes      | Continuing education | |
|                     | Oral health literacy | Experience | |
|                     | Satisfaction   | Perception of competition | |
|                     | Previous experience | Perceived professional role | |
|                     | Case complexity | Referral patterns | |
|                     |                | Trust/confidence in the specialist | |
|                     |                | Communication | |

*Fig - Factors influencing the general dentist–specialist relationship.*
The survey also queried demographic information, the dental practitioner’s professional and clinical characteristics, as well as perceptions of competition and confidence in specialists. The survey was pilot-tested amongst a group of 12 general dentists and specialists across Canada for face validity and ease of completion. They were requested to provide feedback indicating the following: (i) whether the survey was easy to complete; (ii) how long it took to complete; (iii) whether any questions lacked clarity; and (iv) whether any additions to the questionnaire were required. After minimal modifications based on the pilot testing, the questionnaire was translated into French by the CDA, who administered the survey on behalf of the researchers.

We defined a “negatively perceived” general dentist–specialist relationship on the basis of 4 factors, as explained below.

**Communication**

To assess communication, general dentists were asked a yes or no question: *In general, whilst collaborating with a specialist, do they send you patient information/reports in a timely manner?* The absence of an exchange of timely information between a general dentist and a specialist was taken to imply a lack of a smooth interaction whilst collaborating and hence suggested a negative relationship.

**Confidence/Trust**

The relationship between the general dentist and specialist may be perceived as negative when a general dentist is not confident in a specialist. In one question, the level of agreement to two statements: (i) *Specialists are my partners in delivering care* and (ii) *Once I have selected a specialist, I tend to stick with that specialist,* was used to determine the level of confidence that general dentists felt towards specialists. Here, a Likert-type scale was used and included 5 response categories: strongly disagree, disagree, not sure, agree, and strongly agree.

**Competition**

The general dentist–specialist relationship can be considered negative when general dentists perceived specialists as competitive and not collegial towards them. To determine how general dentists perceived specialists, the following question was asked: *Do you perceive specialists as colleagues or competitors?* Their perception was assumed to range across a continuum and, therefore, a Visual Analogue Scale (VAS) was employed. The respondents were asked to place an X on a line from 0 to 100 to describe their relationship, with 0 being “completely collegial” and 100 being “completely competitive.” During analysis, we ran the variable both as a continuous and categorical outcome (“strongly collegial” [0-24], “somewhat collegial” [25-49], “neutral” [50], “somewhat competitive” [51-75], and “strongly competitive” [76-100]). We expected far more variability in the variable, but given its highly skewed distribution towards “completely collegial,” we decided to use a binary categorisation (“strongly collegial” [for those who marked between 0 and 24] vs “competitive” [for those who marked between 25 and 100]). This approach was meant to differentiate between those who felt a strong level of collegiality in ideal terms and those who chose otherwise. Additionally, we asked general dentists to answer 2 questions: *In terms of competition, how much pressure do you feel from specialists? In terms of competition, how much pressure do you feel from other general dentists?* They had to choose one of 4 categories: no pressure and small, medium, and large pressure.

**Referral patterns**

The frequency of sending out referrals was assessed from the question: *In an average week, how many patients do you refer to specialists?* We hypothesised that a lower number of referrals might be indicative of perceiving a negative relationship with specialists.

Once all data were collected, the CDA transferred anonymised data in the form of an Excel file to the research team. Data were then imported to Statistical Package for the Social Sciences (SPSS) v. 26 for analysis. Descriptive analysis was conducted to assess the nature of the general dentist–specialist relationship by using responses to the questions above.

**Results**

In total, 1328 surveys were returned (11.7% response rate). The sample characteristics are shown in Table 1. The representativeness of our sample was determined by comparing it with available information from the CDA on the characteristics of Canadian dentists (as per August 2019). Our sample was well represented with respect to gender and place of initial training, but not in terms of age (40 years and younger, 51-60 years old) and year of graduation (<1996). Most of the respondents were male (59%), were 51 to 60 years old (28%), graduated from a Canadian dental faculty (74%), and did not have a general practice residency or advanced education in general dentistry (88%). The majority of respondents (78%) worked in a single practice, 60% were located in a large population centre, and 63% owned their practices. Also, 87% of respondents perceived no or a small amount of competitive pressure from specialists, as compared to 55% from other general dentists. A majority (85%) perceived specialists as being strongly collegial, as compared to 44% for other general dentists.

To evaluate the nature of the general dentist–specialist relationship, we considered the frequency of responses to specific survey questions based on the factors described in our methods (Table 2). In terms of communication, the great majority (93%) responded that they received patient information/reports in a timely manner when collaborating with specialists. Regarding confidence/trust, the majority (64%) agreed with the statement, *Specialists are my partners in delivering care.* Interestingly, the survey also revealed that 65% were inclined towards “no strong agreement” with the statement, *Once I have selected a specialist, I tend to stick with that specialist.* In terms of competition, 87% responded that they perceived
either a small amount of pressure or no pressure at all from specialists. Additionally, most general dentists (85%) perceived specialists to be strongly collegial towards them. Perceptions of other general dentists is markedly different, as described previously. Finally, when inquiring about the number of referrals to specialists in a week, most general dentists (85%) indicated that they referred 5 or fewer patients to specialists.

Table 1 – Descriptive characteristics of the sample.

| Sociodemographic factors | Survey data (n, %) | CDA data (n, %) |
|--------------------------|--------------------|-----------------|
| **Age**                  | 1123               | 19,992          |
| 40 years and younger     | 278                | 6911            |
| 41-50 years old          | 297                | 4969            |
| 51-60 years old          | 316                | 4423            |
| >61 years old            | 232                | 3609            |
| **Gender**               | 1116               | 20,091          |
| Male                     | 657                | 11945           |
| Female                   | 459                | 8146            |
| **Gross annual income**  |                    |                 |
| <$149,000                | 319                | 30.6            |
| $150,000-$249,000        | 342                | 32.7            |
| >$250,000                | 383                | 36.7            |
| **General dentist-related factors** |                   |                 |
| **Type of practitioner** | 1264               |                 |
| General dentist          | 1113               | 88.1            |
| General dentist with GPR/AEGD | 151              | 11.9            |
| **Year of graduation**   |                    | 1281            |
| <1996                    | 673                | 52.5            |
| 1997-2007                | 310                | 24.2            |
| 2008-2018                | 298                | 23.3            |
| **Place of initial training** | 1281             | 1281            |
| Canadian dental faculty  | 951                | 74.2            |
| American dental faculty  | 85                 | 6.7             |
| International dental faculty | 245            | 19.1            |
| **Equivalency type**     | 322                |                 |
| Did not go through IDAPP/NDEB Equivalency programme | 40 | 12.4 |
| Went through IDAPP/NDEB Equivalency programme | 282 | 87.6 |
| **Years of practice in Canada** | 1281         |                 |
| <14 years                | 488                | 38.1            |
| 15-29 years              | 420                | 32.8            |
| >30 years                | 373                | 29.1            |
| **Perception of pressure from other GDs** | 1141          |                 |
| Pressure (medium/large)  | 512                | 44.9            |
| Small/no pressure        | 629                | 55.1            |
| **Perception about other GDs** | 952           |                 |
| Completely collegial     | 419                | 44.0            |
| Competitive              | 533                | 56.0            |
| **Practice-related factors** |                   |                 |
| **How many practices do you work in?** | 1235            |                 |
| 1                        | 962                | 77.9            |
| 2 or more                | 273                | 22.1            |
| **Location of the primary practice** | 1244        |                 |
| Small population centre (1,000-29,999) | 262          | 21.0            |
| Medium population centre (30,000-99,999) | 231         | 18.6            |
| Large population centre (100,000 or greater) | 751        | 60.4            |
| **Practice ownership**   | 1246               |                 |
| Yes                      | 791                | 63.5            |
| No, I do not own a practice | 455          | 36.5            |
| **Presence of specialists in close proximity (<5 km) to the practice** | 1249 |                 |
| Yes                      | 1030               | 82.5            |
| No                       | 219                | 17.5            |

a-d Comparison of characteristics of the respondents with the available census information (as per August 2019) on dentists from the CDA register. The values of n vary greatly and can be attributed to missing data.

AEGD, advanced education in general dentistry; CDA, Canadian Dental Association; GD, General Dentist; GPR, general practice residency; IDAPP, International Dentist Advanced Placement Program; NDEB, The National Dental Examining Board of Canada.
Table 2 – Description of the factors used to assess the relationship.

| Factor          | Survey question                                                                 | Categories (recoded)                                      | Distribution (n, %) |
|-----------------|--------------------------------------------------------------------------------|-----------------------------------------------------------|--------------------|
| Communication   | In general, whilst collaborating with a specialist, do they send you patient information/reports in a timely manner? | Yes, No                                                   | 1080 (92.5), 88 (7.5) |
| Confidence/trust| To what extent do you agree with the following statements about specialists?    | Strongly agree, No strong agreement, (strongly disagree + disagree + not sure + agree) | 731 (64.1), 410 (35.9), 399 (34.9) |
|                  | Specialists are my partners in delivering care.                               | Strongly agree, No strong agreement, (strongly disagree + disagree + not sure + agree) | 743 (65.1), 410 (35.9), 399 (34.9) |
|                  | Once I have selected a specialist, I tend to stick with that specialist.      | Strongly agree, No strong agreement, (strongly disagree + disagree + not sure + agree) | 743 (65.1), 410 (35.9), 399 (34.9) |
| Competition     | In terms of competition, how much pressure do you feel from specialists?      | No pressure/small amount, Medium/large amount             | 997 (87.2), 146 (12.8) |
|                  | Do you perceive specialists as colleagues or competitors?                     | Strongly collegial, Competitive (somewhat collegial, neutral, somewhat competitive and completely competitive) | 995 (85.0), 176 (15.0) |
| Referrals        | In an average week, how many patients do you refer to specialists?            | 5 or more referrals, 5 or less                           | 172 (15.5), 939 (84.5) |

Discussion

The results of this study suggest that the majority of general dentists in Canada perceive their relationship with specialists as positive. Most general dentists specified that specialists sent timely information/reports, were partners in delivering care, presented little competitive pressure, and were strongly collegial. Whilst in the minority, there are some general dentists for whom the relationship with specialists was not fully positive.

To our knowledge, there have been no previous studies that directly assess the nature of the relationship between general dentists and specialists. Whilst studies have shown that different factors play a role in influencing a general dentist’s decision to refer to specialists, only 2 studies appear to speak about the relationship between general dentists and specialists in other terms. However, these studies are limited in scope and only suggest which factors may be related or responsible for driving a positive relationship between practitioners. Our study was able to expand on the same ideas and therefore explores in more detail how general dentists perceive specialists and what may determine a positive or negative perception of their relationship with specialists.

In terms of communication, our findings support the expectation of receiving timely information from specialists. Professional guidelines recommend that specialists provide the referring dentist with a detailed report (diagnosis, treatment options, account of treatment delivered) in a timely manner when collaborating. It is also suggested that confidence/trust gradually develops as a result of positive perceptions and experiences between both sets of practitioners. Our study found that the majority of respondents considered specialists as their partners in delivering patient care. This confirmed that the general dentists in our sample held a positive attitude towards collaboration and partnership with specialists. As indicated in some studies, working collectively towards a common goal (patient care) paves the way for positive interprofessional relationships in health care settings. Nevertheless, we noted that the majority of our respondents were not inclined towards “sticking to the same specialist after selecting them once.” Whilst satisfaction from a previous encounter might influence a general dentist’s choice of whom they refer to, additional studies are required to establish whether adhering to a certain specialist implies greater confidence/trust in them.

Research has also suggested that general dentists’ perceptions of specialists may influence referral decisions and, therefore, may be important in defining the nature of the general dentist–specialist relationship. Additionally, having a positive perception of specialists assists in enabling a smooth interaction between the 2 groups, which in turn has a positive impact on the care they deliver as professionals. In our study, general dentists perceived specialists to be strongly collegial towards them. Contrary to this, the majority of respondents mentioned that they perceived other general dentists to be competitive towards them. This contradicts findings from a recent survey about clinical decision-making amongst dentists within Ontario (largest dental care market in Canada), where general dentists perceived other general dentists to be collegial towards them. Importantly, though, it should be noted that the idea of collegiality is a complex one and may depend on different factors or circumstances.

Last, in terms of the frequency of referrals, our findings are unclear. Past surveys in dentistry have only inquired about the presence of referrals, not their frequency. Thus, there exists no empirical comparator that might indicate whether a certain number of referrals in a specific time period may be considered good, bad, or normal. Additionally, we also recognise that there might be a variety of reasons for a low number of referrals that are not indicative of a positive or negative relationship. For instance, patient needs, practitioner expertise, location of the practice, availability of specialists, and the economic status of the community may all be at play in the decision to refer. However, it should be noted that this exploratory study assumed referrals as only one of
the 4 aspects that might influence the general dentist–specialist relationship.

Our study was an attempt to inform the various organisational entities in Canada that report observing weaknesses and potential challenges in the general dentist–specialist relationship. Changing dynamics in the dental care environment have been suggested as factors that influence this relationship. This survey presented a snapshot of the current nature of this relationship in Canada from the general dentists’ perspective. Unfortunately, there is a lack of sufficient evidence in the literature to compare our findings and, ultimately, to determine how our findings fit within trends. As such, this study helps by serving as a baseline for future research in the area of interprofessional relationships in dentistry in Canada and potentially elsewhere.

The strengths and limitations of this study are important to consider. One strength was the attainment of a minimal sample size, which allows generalisation of our findings to the Canadian general dentist population. Next, the response rate of our survey was 11.7%, which may appear low but is still comparable to the rate of response to email surveys amongst dental professionals. Similar to other self-administered surveys, this study presented with the limitation of social desirability bias and non-response error. In addition, given the absence of any previous tools or constructs that clearly define the general dentist–specialist relationship, the development of our proposed factors to define the nature of the relationship presents with issues of validity and reliability. Adapting the physician literature to develop hypotheses for this study also presents as a limitation, as the 2 sectors are different in their organisation, financing, and delivery in Canada. Finally, other unknown factors may influence the general dentist–specialist relationship; however, the descriptive understanding obtained through this study can be helpful in undertaking analytical studies in the future to explore this relationship further.

In terms of future directions, a similar study with Canadian specialists to fully explore the nature of this relationship, as well as repeating the survey with general dentists in order to assess trends over time, would be insightful. Ultimately, this study points in the direction of a positive relationship between general dentists and specialists in Canada. To our knowledge, this study is the first to explore the nature of the general dentist–specialist relationship in the context of Canadian dentistry and dentistry elsewhere.

**Conclusions**

Our results point to a positive perception of the relationship between general dentists and specialists. This study is an attempt to inform dental professional organisations about the important aspects of this relationship. Although this study was based purely on the perception of general dentists, it still provides a foundation to further explore the factors that might affect this important interprofessional relationship.

**Conflict of interests**

None disclosed.

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