Should Endodontists Place Dental Implants? A National Survey of General Dentists

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Abstract

Introduction: The purpose of this study was to assess whether general dentists support the placement of dental implants by endodontists. **Methods:** A 29-item written survey was developed and mailed to 1,500 randomly selected practicing general dentists within the United States to assess whether respondents supported implant placement by endodontists and whether they would refer patients to endodontists for implant placement. Univariate, bivariate, and logistic regression analyses were performed. **Results:** Three hundred sixty-six subjects completed surveys. Sixty-six percent of respondents opposed endodontists placing implants, and 73% indicated they would not refer patients to an endodontist for implant placement. The following characteristics were associated with respondents who support implant placement ($P < .05$): yes, willing to refer to an endodontist for implant placement; believes other specialists would support endodontists placing implants; never or sometimes refers patients for molar root canal treatment; and plans to retire in 5 years. **Conclusions:** The majority of respondents did not support implant placement by endodontists. As the demand for implant therapy continues to grow, it may be necessary to increase the number of practitioners who place dental implants. However, general dentists' and specialists' attitudes should be further assessed before modifying the scope of endodontic practice to include implant placement. *(J Endod 2011;37: 1365–1369)*

Key Words

Dental care, dental education, dental implants, dentists, endodontics, endodontic therapy, dental specialists, referral

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Implant therapy has become a routine procedure within dentistry. Historically, dental implants were mainly placed by oral surgeons. However, the specialty of periodontics determined that dental implant placement was within the scope of periodontal practice in the 1990s (1). Today, a variety of dental practitioners (eg, general dentists, periodontists, prosthodontists, and endodontists) place implants (2).

The American Association of Endodontics defines their scope of practice as "the branch of dentistry concerned with the morphology, physiology and pathology of the human dental pulp and periradicular tissues. Its study and practice encompass the basic and clinical sciences including the biology of the normal pulp and the etiology, diagnosis, prevention and treatment of diseases and injuries of the pulp and associated periradicular conditions (3)." Although the majority of endodontists limit their scope of practice to the aforementioned definition, a limited number of endodontists (<10% nationally) have begun to place dental implants (4, 5). Furthermore, there has been discussion within the field debating whether to modify the current scope of endodontic practice to include implant placement (6). A recent survey examined endodontists' opinions regarding implant placement within their own specialty and found the majority of respondents (57.0%) supported implant placement by endodontists (5). Additionally, a limited number of endodontic residency programs have incorporated implant placement into their curriculum. Although some endodontists are in favor of including implant placement within their scope of practice, it is unknown whether general dentists, endodontists' primary referral source, share this same view. As such, it is important to identify general dentists' opinions before implementing changes to the American Association of Edodontics' definition of endodontics or mandating curricular changes to endodontic residency programs. The purpose of this study was to assess general dentists' opinions regarding implant placement by endodontists and identify the predictor variables associated with general dentists who favor implant placement.

Methods

A 29-item written survey was developed and distributed to a random sample of general dentists currently practicing in the United States (N = 1,500). The survey was modeled after a similar questionnaire that was distributed to endodontists (5). The names and addresses of potential subjects were obtained from the American Dental Association. Participants received a cover letter that explained the purpose of the study and obtained informed consent; a copy of the 4-page survey; and a prepaid, addressed envelope. The first mailing was sent in July 2009, and a follow-up mailing was sent to nonrespondents 1 month later. Approval to conduct the study was obtained from the University of Iowa's Institutional Review Board before commencing the study.

The survey assessed general dentists' opinions regarding dental implant placement. The dependent variable in this study was whether general dentists believed that implants should be placed by endodontists. The main question read, "In your opinion, should endodontists place implants (Yes/No)?" Possible predictor variables were assessed through a variety of questions. For example, the survey asked subjects whether they (1) restore implants, (2) place implants, and (3) would be willing to refer patients to endodontists for implant placement. Additional questions inquired about respondents' referral to endodontists for other procedures (eg, molar root canal treatment and root-end surgery) as well as questions pertaining to the

respondents' practice and demographic characteristics such as age, sex, year of graduation from dental school, employment status, and occupational satisfaction.

Data were entered into a database and analyzed using statistical software (SAS 9.1; SAS Institute Inc, Cary, NC). Descriptive frequency tables were generated. Chi-square and Wilcoxon rank-sum tests were used to assess associations between the dependent variable and the predictor variables. Multiple logistic regression models were developed to identify the predictor variables associated with general dentists who favor implant placement. Variables showing an association with the primary outcome ($P \leq .1$) in the bivariate analyses were used to build the final model using forward stepwise logistic regression analysis. The model was verified using a backward elimination model. Variables that were significant at $P < .05$ were included in the final model. All possible 2-way interactions were explored.

Results

Three hundred sixty-six respondents completed surveys for a response rate of 24.4%. Table 1 displays the demographic and practice characteristics of respondents. Although 91.7% of respondents reported restoring implants, only 13.5% of respondents currently place dental implants. A majority of respondents who place implants reported receiving training at a CE course (90.2%) or by an implant company/representative (83.7%), whereas 47.2% received formal training in a residency program.

Respondents' opinions regarding implant placement by endodontists are shown in Table 2. Approximately one third of respondents believed that endodontists should place dental implants, and one fourth of respondents would refer a patient to an endodontist for implant placement. A slightly larger percentage of respondents would be willing to let an endodontist place an implant if the endodontist determined that a patient's referred tooth was nonrestorable.

Bivariate analyses showed that many predictor variables were statistically significantly ($P \leq .1$) associated with whether general dentists supported the placement of implants by endodontists (yes/no, Table 3). For example, respondents who never or sometimes refer patients to an endodontist for premolar root canal therapy were more likely to support endodontists placing implants (yes) than those who often or always refer (37.1% vs 25.2%, $P = .03$). Ninety-three percent of respondents who strongly agreed or agreed that other dental specialists in the community would support endodontists placing implants stated they would support the placement of implants by endodontists. In contrast, only 13.3% of respondents who disagreed or strongly disagreed with the statement indicated that they would support endodontists placing implants.

Variables that were considered but were not statistically significant in the bivariate analyses ($P > .1$) included the length of time to schedule an appointment with an endodontist, the distance of the nearest endodontist to whom the dentist refers, whether the endodontist to whom the respondent refers places implants, the respondent's perception of how the frequency of referrals to endodontists has changed in the past 10 years, the perceived importance of endodontic therapy to dentistry in the next 10 years, the belief that extraction and implant therapy is a valuable alternative treatment to traditional root canal therapy, the belief that implants have an equal or better long-term success rate than traditional root canal therapy, whether the respondent places implants, which dentists in the community place implants (ie, general dentists, specialists, or both), if the respondent restores implants, whether the respondent received his/her dental degree from a private or public institution, whether the respondent completed a residency program, the number of hours the respondent works per week, employment status (ie, sole owner vs other), the American Dental Association district in which the respondent resides, the busyness of the respondent's practice, the respondent's satisfaction with income, and the respondent's satisfaction with his/her occupation.

Regression analysis identified 4 predictor variables that were statistically significantly associated ($P < .05$) with the belief that endodontists should place implants (yes) (Table 4). Holding all other variables constant, general dentists who reported they would refer a patient to an endodontist for implant placement were 91.4 times as likely to support implant placement by endodontists compared with general dentists who said they would not refer a patient to an endodontist for implant placement. General dentists who strongly agree or agree that other specialists in the community would support the placement of implants by endodontists were 53.8 times as likely to support endodontists placing implants as those who strongly disagree or disagree. General dentists who never or sometimes refer molar root canal treatment to an endodontist were 3.5 times as likely to support implant placement by endodontists compared with respondents who often or always refer molar root canal treatment. General dentists who plan to retire in the next 5 years were 2.8 times as likely to support endodontists placing implants than those who did not plan

TABLE 1. Demographic and Practice Characteristics of Responding General Dentists (n = 366)

Dentist characteristics	%
Sex	
Male	79.1
Female	20.9
Years since graduation from dental school	
<10 years	19.7
≥10 years	80.3
Location of dental training	
Public university	57.4
Private university	39.8
International university	2.8
Plan to retire in 5 years	
Yes	17.5
No	82.5
Practice characteristics	**%**
Region of practice	
1, New England	4.7
2, Middle Atlantic	15.6
3, South Atlantic	16.4
4, East South Central	3.6
5, East North Central	19.2
6, West North Central	8.6
7, West South Central	8.6
8, Mountain	8.3
9, Pacific	15.0
Primary practice/employment situation	
Solo/partner	87.8
Other	12.2
Currently restores implants	
Yes	91.7
No	8.3
Currently places implants	
Yes	13.5
No but interested in placing implants in the future	23.0
No not interested in placing implants	63.5
Perception of how their referrals to endodontists have changed in the past 10 years	
Referrals have increased	33.0
Referrals have decreased	18.6
No change in referrals	46.3
Do not refer	2.1