Patients' Values Related to Treatment Options for Teeth with Apical Periodontitis

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Abstract

Introduction: This study aimed to explore patients' values when selecting treatment for a tooth with apical periodontitis (AP), namely retention via root canal treatment (RCT) and extraction without replacement or replacement with implant-supported crowns or fixed or removable partial prostheses. **Methods:** Through 2 surveys of patients (800 university patients and 200 community patients, response rate = 43%) and dentists (498 Ontario endodontists, periodontists, prosthodontists, oral and maxillofacial surgeons, response rate = 40% and 1983 Ontario general dentists, response rate = 15%), the importance of values that might be considered important to patients when selecting treatment options for a tooth with AP were recorded. Chi-square and Kendall's tau tests were used to respectively compare the importance rating frequency by each surveyed group and its correlation to their demographic variables ($P \leq .05$). **Results:** Patients considered communication and trust (94%), tooth retention (90%), esthetic outcome (84% regardless of location), cost (83%), longevity (83%), and preoperative pain (81%) as the most important decision values. Dentists overrated the importance of patients' previous experience with the treatment options (94% vs 72%), dental insurance (90% vs 70%), and intraoperative pain (79% vs 60%) while underestimating the importance of maintenance cost (60% vs 79%). **Conclusions:** Dentists should respect patients' views about esthetic outcome, longevity, and cost associated with treatment options for a tooth with AP. In particular, this survey highlights the value of communication and trust between patient and dentist and preservation of the natural tooth through RCT over implant-supported crown replacement when planning treatment for a tooth with AP. *(J Endod 2016;42:365–370)*

Key Words

Apical periodontitis, dentist-patient relations, patient preference, personal autonomy, principle-based ethics, shared decision making

The respect of patient autonomy in clinical decision making (1) is the principal concept supporting the advancement of patient-centered practices in health care delivery (2). Indeed, in contemporary society, many patients favor active participation in discussions about treatments that may improve their state of health (3). Although the same concepts hold true for dental health in general and for the periapical health of teeth (2), studies on patient participation in clinical decision making for the highly prevalent disease of apical periodontitis (AP) (4) are scarce.

We recently reported on the preferences of dentists (5) and patients (6) in regard to 2 contrasting treatment options for teeth with AP: tooth retention via root canal treatment (RCT) or extraction with or without replacement. A survey of Ontario dentists (5) indicated that the chief options for management of teeth with AP were RCT and replacement with an implant-supported crown (ISC). Although surveyed dentists mostly preferred RCT for teeth with primary AP, they more often favored ISC for root-filled teeth with post-treatment AP. Specific preferences varied among dentists engaged in general practice and those engaged in various specialty practices (5). A survey of dental patients in the Greater Toronto Area (6) indicated that preference for RCT was often associated with valuing general dental health. For treatment decisions specifically regarding teeth with AP, patients favored a participatory role implying preference for exerting their autonomy in this decision-making juncture (2).

To select from among different treatment options, patients are expected to relate individual values. Health care providers may encourage patient-centered care by communicating possible values to assist patients in bringing their values to the forefront. To this end, the values that patients consider when making a decision between the options of RCT or ISC have not been explored. The objective of this study was to highlight the specific values that patients relate to decision making when considering defined treatment options for a tooth with AP. We sought to capture the patients' perspectives on such values as well as those of dentists.

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Materials and Methods

Preliminary Qualitative Study

To inform the theoretic framework of this study, a series of semi-structured, qualitative interviews with 5 convenience groups of dental professionals (general dentists, endodontists, periodontists, prosthodontists, and dental assistants/receptionists [3 members each]) was conducted. Participants represented private practice and university environments, included both females and males, and varied in age and practice experience. They were asked to suggest values that, in their view, might be important to patients when considering treatment options for a tooth with AP. The interview sessions were recorded and transcribed. Direct quotes from participants were recorded to ensure validity and reliability. Qualitative data analyses performed using the "framework" approach (7) included familiarization (overview of the transcripts), identification of a thematic framework (organization of themes arising from the interview process), indexation and charting (coding and arranging the data by themes), and mapping and interpretation (identifying a structure and patterns of the data). The findings of the preliminary study were used in preparation of the present cross-sectional quantitative surveys regarding the following:

1. Patients' perspectives on values they consider important in selecting a treatment for AP
2. Dentists' perspectives on values that patients consider important in selecting a treatment for AP

Main Surveys

This research comprised additional modules of 2 previous cross-sectional surveys approved by the University of Toronto Research Ethics Board (protocol #23191) whose detailed methodology was reported elsewhere (5, 6). In brief, 1000 patients (800 University of Toronto Faculty of Dentistry patients and 200 private practice patients) (6), 498 Ontario specialists (endodontists, periodontists, prosthodontists, and oral and maxillofacial surgeons), and 1983 Ontario general dentists (5) were requested to participate in separate surveys aiming to understand preferences for the treatment of teeth with AP. In addition to the questionnaires reported previously (5, 6), a separate domain was included in both surveys with a list of values that might be considered important to patients when they select treatment for a tooth with AP. Based on the preliminary qualitative study outlined earlier, 16 values were listed in the patients' survey (6) (Table 1) and 14 values in the dentists' survey (5) (Table 2). Both surveys shared 13 of these values with only minor modification in layperson language to make it suitable for the patients' survey. Participants were asked to score the importance of each value on Likert-type 4-point scales, separately for an anterior and a posterior tooth, as follows:

1. Very important
2. Important
3. Somewhat important
4. Not important

Additionally, using an open-ended question, the participants were asked to list, in order of importance, any other values they thought were important to patients selecting treatment.

Data Analysis

Patients' responses were generally consistent for anterior and posterior teeth, suggesting that the represented values applied universally to all teeth with AP. This finding supported the collapsing of data to simplify interpretation. Data from the Likert-type importance scales in both surveys were analyzed using a weighted kappa on 4 Likert categories, and the results were not much different from the binary analysis of "very

TABLE 1. Patient Survey: Frequency of Values Selected as "Important" or "Very Important"

Values in scenario	Anterior tooth (n = 425)*		Posterior tooth (n = 406)*		κ value (95% CI)	Any tooth (n = 425)*	
	n	%	n	%		n	%
1. Communication with and trust in your dentist	397	93	381	94	1 (0.9–1)	399	94
2. Retaining your own natural tooth	379	89	342	84	0.8 (0.6–0.8)	381	90
3. Esthetic outcome of the treatment	355	84	288	71	0.7 (0.5–0.7)	359	84
4. Longevity of treatment (ie, how long it would take until you need to redo the treatment)	347	82	328	81	1 (0.9–1)	351	83
5. Out-of-pocket expense to cover the cost of treatment	345	81	337	83	1 (0.9–1)	352	83
6. Level of pain before seeing a dentist	330	78	323	80	0.9 (0.8–0.9)	344	81
7. Cost of maintenance after treatment	329	77	312	77	1 (0.9–1)	334	79
8. Insurance coverage to cover the cost of treatment	293	69	289	71	1 (0.9–1)	299	70
9. Previous experience related to the treatment options specified above	291	68	277	68	1 (0.9–1)	298	70
10. Need for surgery to receive the treatment	286	67	270	67	1 (0.9–1)	292	69
11. Chance of having pain after treatment	258	61	249	61	1 (0.9–1)	265	62
12. Chance of having pain during treatment	246	58	238	59	1 (0.9–1)	253	60
13. How long it takes to complete the treatment	240	56	229	56	1 (0.9–1)	249	59
14. Number of treatment sessions required	221	52	213	52	1 (0.9–1)	229	54
15. Time off work required to attend treatment session(s)	223	52	216	53	1 (1–1)	227	53
16. Relatives' or friends' previous experience related to the treatment options specified earlier	149	35	147	36	1 (0.9–1)	157	37

CI, confidence interval.

Scenario: "Consider that you have an infection in one of your teeth, which cannot be left unaddressed. Your dentist has discussed different treatment options (retaining the tooth with root canal treatment or replacing the tooth with a bridge, removable plate, dental implant, or pulling out with no replacement). You need to select among the above options. Please indicate which factors are important and how important they are to you in making your selection."

*Valid percentage accounting for the missing responses.