Perception, knowledge, and practice of endodontists and general dental practitioners toward evidence-based practice and factors associated with it—A cross-sectional study

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Abstract

Background: Evidence-based practice is the cornerstone of dentistry and especially endodontics. Diagnosis, treatment planning, and treatment with recent advancement based on evidence would be a great help for the patient satisfaction and treatment prognosis; hence, the aim of present study was to explore difference between perception, knowledge, and practice of endodontists and general dental practitioners (GDPs) towards evidence-based practice and factors associated with it. Materials and Methods: The present study is a cross-sectional descriptive questionnaire study conducted among specialists in the subject of conservative and endodontic dentistry and GDPs working in private clinics in Modinagar city, Uttar Pradesh. The study was conducted in October 2019. In the present study, a close-ended questionnaire was prepared to determine the perception and practice of dental specialists. Results: The majority of endodontists (31 [35.22%]) belonged to the age group of 36–45 years of age while most of the GDPs (32 [36.36%]) belonged to 25–35 years of age group. The majority of endodontists were females (56[63.64%]) and most of the GDPs were males (50 [56.81]). More endodontists (47 [53.42]) had a positive perception of evidence-based practice than GDPs (15 [16.42]). Practice toward evidence was fair among most of the endodontists (49 [55.68%]) and GDPs (54 [61.36%]). Conclusion: There was a more positive perception regarding evidence-based practice among endodontists than GDPs, knowledge was high among endodontists regarding evidence-based practice and practice was also good among endodontists. Factors associated with perception, knowledge, and practice among endodontists and GDPs were age in years, gender, year of practice, number of endodontic patients treating per month.

Keywords: Dental, evidence-based dentistry, knowledge, perception

Introduction

The Americans with Disabilities Act (ADA) defines the term “evidence-based dentistry (EBD),” as an approach to oral health care that requires the judicious integration of systematic assessments of clinically relevant scientific evidence, relating the patient’s oral and medical condition and history, with the dentist’s clinical expertise and the patient’s treatment needs and preferences.¹ The term EBD was advanced from proof-based prescription, which is another worldview yet the primary standards of the subject previously existed for a long time,
as Claude Bernard set up the utilization of logical strategy in medicine. [3]

In the ebb and flow time, clinicians are relied upon to stay aware of the progressions in dental treatments, materials, investigate, and clinical suggestions. There is a wealth of research-based and even recounted proof supporting different parts of dentistry. The two clinicians and patients have prepared access to a wide range of online data utilizing internet browsers from the solace of their workplaces or homes. It is in this manner basic for specialists and patients to utilize online assets for a fast quest and to plan for the up and coming medicinal/dental visit. Albeit online data is an extraordinary asset, it is frequently hard for the clinicians and all the more so for the patients to assess the broad writing accessible as far as legitimacy, nature of information, and unwavering quality of information. [3]

There is a developing need to overcome any issues among exploring and clinical dental practice and to streamline the data accessible to clinicians and patients. This need can to some degree be met by figuring proof-based clinical rules for best practices that the dental specialists can allude to with basic seat side and even patient well-disposed variants. Since both the populaces are as of now utilizing on the web assets, it is of intrigue that the correct sort of assets ought to be made accessible to them. It is additionally important that these assets must be gotten from top-notch proof-based research, which can be utilized to build up the best benchmarks for clinical care. [4]

In the field of endodontics, it is significant as consistently most recent therapeutic materials and strategies are coming up. Tragically, as of late, a few cautious investigations of the logical reason for the techniques we apply in endodontics have exhibited broad shortcomings. [5-10] The circumstance is stressing for analytic and treatment systems just as for the evaluation of the after-effects of our strategies. There is an absence of logical proof to show which treatment conventions are the best and result in root-filled teeth with the insignificant danger of repetitive side effects, periapical aggravation, or tooth misfortune. In the past, no investigation has looked at the distinction in the impression of endodontists and general dental experts. Accordingly, the present research was led to investigate the contrast between perception, knowledge, and practice of endodontists and general dental specialists (GDPs) toward evidence-based practice and factors related to it.

**Materials and Methods**

The present study is a cross-sectional descriptive questionnaire study conducted among specialists in the subject of conservative and endodontic dentistry and GDPs working in private clinics in Modinagar city. The ethical clearance to conduct the study was obtained from the institutional ethical review board on September 12/09/2019. The study was conducted in October 2019.

The city was divided into five directions north, south, east, central, and west. From each direction, 10 dental clinics were selected owned by endodontists and 10 dental clinics owned by GDPs randomly. In selected clinics consent was availed from dental practitioners, and those given consents were included in the study. If dental practitioners refuse to give his or her consent, another clinic was included in the study. If at the time of the survey due to patient appointment dental professional does not take up the survey, the questionnaire was given to the assistant to be filled and collected later. The survey was conducted among 88 Endodontists and 88 GDPs.

A pilot survey was conducted, before the main survey on some of the total study participants to test the validity and reliability of the questionnaire. The reliability of the questionnaire was determined by using test-retest and the values of measured kappa (κ) = 0.78 weighted kappa (κw) = 0.81. Internal consistency of questionnaires was measured by applying Cronbach’s alpha (α) and the value of α = 0.87 was measured. Those questions with less validity and reliability were removed.

In the present study, a close-ended questionnaire was prepared to determine the perception and practice of Dental specialists. It consists of four parts. The first part consists of demographic details of patients which include age, gender, socioeconomic status, designation, year of practice, endodontic patients treated per month.

The second part consists of questions related to knowledge of endodontists and GDPs regarding evidence-based practice. The third part consists of questions regarding the perception of Endodontists and GDPs regarding evidence-based practice. The fourth part consists of questions regarding the practice of evidence-based practice among study participants.

Regarding knowledge, on each correct answer 1 point given and 0 for the wrong answer or don’t know. The score for knowledge ranges from 0 to 6 with 0–2 poor knowledge, 3–4 fair knowledge, 5–6 good knowledge. Perception of study participants measured on Likert scale. Starting from 4-strongly disagree, 3-disagree, 2-agree, 1-strongly agree. The score for perception ranges from 8 to 32, with 8–16 negative perception, 17–24 neutral perception, 25–32 positive perception. Practice score was measured as 0 given to no and 1 given yes answer, practice scores range from 0 to 10 with 0–3 poor practice, 4–6 fair practice, and 7–10 good practice.

**Statistical analysis**

After entry of data in Microsoft Excel 2014. SPSS version 21.0 is used to analyze the data. Descriptive statistics are used to determine demographic details and knowledge, perception, and practice scores of study participants regarding evidence-based practice. Chi-square test is used to find the association between demographic details and perception, knowledge, and practice of study participants regarding evidence-based practice.
Results

Table 1 shows that the majority of endodontists (31 [35.22%]) belonged to the age group of 36–45 years of age group while most of the GDPs (32 [36.36%]) belonged to 25–35 years of age group. Majority of endodontists were females {56 (63.64%)} and most of the GDPs were males {50 (56.81)}. Years of practice for most of the endodontists (34 [38.86%]) were 1–5 years. While for GDPs (38 [43.18]) it was 6–10 years. Most of the endodontists (55 [62.50%]) and GDPs (64[72.72%]) belonged middle class. 50 (56.81%) of endodontists treat about an average of 16–30 endodontic cases per month while most of the GDPs (50 [56.81%]) treat average 16–30 patients per month. In regards to knowledge of endodontists and GDPs toward evidence-based practice majority, 38 (43.18%) and 41 (46.59%) of them have moderate knowledge. A number of endodontists (47 [53.42]) had positive perception toward evidence-based practice than GDPs (15[16.42]). Practice toward evidence-based practice was fair among most of the endodontists {49 [55.68%]} and GDPs {54 [61.36%]} [Table 2]. On applying the Chi-Square test it was determined that among Endodontists age in years was significantly (P = 0.01*) associated with the practice. Years of practice was significantly associated with knowledge (P = 0.05*) and perception (P = 0.05*) regarding evidence-based practice. A number of endodontic patients treating per month were significantly associated (P = 0.05*) with practice. Among GDPs, Gender was significantly (P = 0.05*) associated with knowledge regarding evidence-based practice. A number of endodontic patients treating per month were significantly (P = 0.05*) associated with practice [Table 3].

Discussion

The present study was conducted to determine the perception, knowledge, and practice of endodontists and GDPs toward evidence-based practice and factors associated with it.

In the present study, knowledge and practice of endodontists and GDPs toward evidence-based practice were compared. In contrast to this in the study by Rathod S et al.[11] in which perception of dental staff and student were compared. In the present study females, respondents were more in number than males. The same results were seen study by Yamalik N et al.[12] in which females respondents were than males. Contrasting results were shown in a study by Rajagopalachari US et al.[13] and Iqbal A[14] in which most of the respondents were male. The majority of study participants in the present study belonged to the age group of 46–55 years. In contrast to this, in a study by Rajagopalachari US et al.[13] and Yamalik N et al.[12] age range of study participants was 31–40 years.

In the present study, majority of study, participants were having years of clinical practice ranging from 1–5 years to 11–15 years. In contrast to these results in the study by Rajagopalachari US et al.[13] and Iqbal A[14] majority of study participants had the clinical experience of more than 15 years. In the present study, both Endodontists and GDPs were 50% while in a study by Rajagopalachari US et al.[13] General dentists (BDS) constituted about 30.4% and the rest of them were specialists. In a study by Yamalik N et al.,[12] 81% were specialists while 19% were general practitioners. It is sometimes also noted that dental experts probably going to have different observations towards clinical dental rules, particularly with respect to their viable execution into everyday practice, advantages and obstructions.[3]

In the present study, there was a more positive perception regarding evidence-based practice among endodontists than GDPs, knowledge was high among endodontists regarding evidence-based practice and practice was also good among others.

Table 1: Demographic details of endodontists (n=88) and general dental practitioners (GDPs) (n=88)

| Demographic Variables | Endodontists | GDPs | Total |
|-----------------------|--------------|------|-------|
| Age in years          |              |      |       |
| 25-35 years           | 08 (9.00)    | 32 (36.36) | 40 (22.72) |
| 36-45 years           | 31 (35.22)   | 16 (18.18) | 47 (26.70) |
| 46-55 years           | 24 (27.27)   | 28 (31.81) | 52 (29.56) |
| 56-66 years           | 25 (28.51)   | 12 (13.65) | 37 (21.02) |
| Total                 | 88 (100)     | 88 (100) | 176 (100) |
| Gender                |              |      |       |
| Male                  | 32 (36.36)   | 50 (56.81) | 82 (46.59) |
| Female                | 56 (63.64)   | 38 (43.19) | 94 (53.41) |
| Total                 | 88 (100)     | 88 (100) | 176 (100) |
| Year of practice      |              |      |       |
| 1-5 years             | 34 (38.63)   | 21 (23.86) | 55 (31.25) |
| 6-10 years            | 11 (12.5)    | 38 (43.18) | 49 (27.84) |
| 11-15 years           | 23 (26.13)   | 22 (25.00) | 55 (31.25) |
| 16-20 years           | 20 (22.74)   | 07 (7.96)  | 27 (15.34) |
| Total                 | 88 (100)     | 88 (100) | 176 (100) |
| Socioeconomic class   |              |      |       |
| Upper                 | 29 (32.95)   | 15 (17.04) | 44 (25.00) |
| Middle                | 55 (62.50)   | 64 (72.72) | 119 (67.61) |
| Lower                 | 04 (4.55)    | 09 (10.24) | 13 (7.39)  |
| Total                 | 88 (100)     | 88 (100) | 176 (100) |
| Average number of endodontic patients treating per month | 37 (42.04) | 36 (40.90) | 73 (41.94) |
| Total                 | 88 (100)     | 88 (100) | 176 (100) |

Table 2: Perception, knowledge, and practice scores evidence-based practice among study participants

| Variables | Number of subjects | Endodontists | GDPs | Total |
|-----------|--------------------|--------------|------|-------|
| Perception | 8-16 (negative)   | 01 (11.3%)  | 13 (14.77) | 14 (7.95) |
| 17-24 (neutral) | 40 (45.45%) | 60 (68.81) | 100 (56.81) |
| 25-32 (positive) | 47 (53.42%) | 15 (16.42) | 62 (35.24) |
| Total      | 88 (100%)         | 88 (100%)   | 176 (100) |
| Knowledge  | 0-2 (low)         | 19 (21.59%) | 36 (40.90) | 55 (31.25) |
| 3-4 (moderate) | 38 (43.18%)   | 41 (46.59) | 79 (44.88) |
| 5-6 (high)  | 31 (35.23%)       | 10 (12.51) | 41 (23.87) |
| Total      | 88 (100%)         | 88 (100%)   | 176 (100) |
| Practice   | 0-3 (poor)        | 07 (07.95%) | 22 (25.00) | 29 (16.47) |
| 4-6 (fair)  | 49 (55.68%)       | 54 (61.36) | 103 (58.52) |
| 7-10 (good) | 32 (36.37%)       | 12 (13.64) | 44 (25.01) |
| Total      | 88 (100%)         | 88 (100%)   | 176 (100) |
Endodontists. The same results were reported in a study by Rajagopalachari et al. in which specialists having more knowledge than general dentists. In the same study, more positive perception towards evidence-based dentistry was reported more general dentists. In a study by Yamalik N et al., it was reported that dental specialists generally had a higher level of awareness regarding EBD compared with general practitioners.

In the present study, years of practice were significantly associated with perception and knowledge among endodontists. The same results were seen in a study by Rajagopalachari et al. in which a positive attitude was seen with dentists having more clinical experience.

In the present study, no significant association was determined between socioeconomic status and Perception, knowledge and practice among Endodontists and GDPs towards evidence practice in compared to the study by Yamalik N et al. in which socioeconomic status was a significant factor associated with evidence-based dentistry.

The results of the present study should be viewed in the light of limitation as only one city of Uttar Pradesh was taken in the study, hence the non representativeness of the sample makes the results non generalizable to the whole country, nonetheless, the study provides a platform for the nationwide multicentric study.

Dental practitioners should work in accordance with evidence-based dentistry and with the recent development in the field of dentistry which could help the dentists to do work at a faster pace and with favorable prognosis. The practice of evidence-based dentistry would prevent many complications and treatment failure and makes the patients satisfied and improves the shelf life of dentition.

**Conclusion**

From above it was concluded that there was more positive perception regarding evidence-based practice among endodontists than GDPs, knowledge was high among endodontists regarding evidence-based practice and practice was also good among endodontists. Factors associated with perception, knowledge, and practice among endodontists and GDPs were age in years, gender, year of practice, number of endodontic patients treating per month.

| Demographic variables | Endodontists | GDPs |
|-----------------------|--------------|------|
|                      | Perception   | Knowledge | Practice | Perception | Knowledge | Practice |
|                      | $\chi^2$     | $\chi^2$ | P       | $\chi^2$ | P       | $\chi^2$ | P       |
| Age in years          | 2.689        | 2.396   | 0.209   | 1.54     | 1.956   | 0.01*    |
| Gender                | 0.079        | 0.21    | 2.760   | 0.22     | 4.209   | 1.33     |
| Year of practice      | 4.550        | 0.05*   | 0.099   | 0.05*    | 3.788   | 2.89     |
| Socioeconomic class   | 2.300        | 1.76    | 1.611   | 0.12     | 1.427   | 0.55     |
| Number of endodontic patients treating per month | 3.490 | 0.40 | 0.589 | 1.64 | 3.450 | 0.05* |

$\chi^2$ < 0.05*

**Declaration of patient consent**

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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**Conflicts of interest**

There are no conflicts of interest.

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