

Recall Practice among Dental Practitioners in Riyadh, Kingdom of Saudi Arabia

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ABSTRACT

Aim: The study aims to assess recall practice among dental practitioners in Riyadh, Saudi Arabia.

Materials and methods: A 24-item questionnaire was used to collect information about the general practice, knowledge of dental recall, and factors affecting dental recall from general dental practitioners in Riyadh. The questionnaire elicited data on personal information (8 items), practice information (3 items), knowledge about the dental recall (3 items), recall practice (6 items), and patient factors that might influence recall (4 items). A five-point Likert scale showed the level of agreement in cases that required recall visits, reasons for patients not returning for recall, and techniques to encourage return for recall.

Results: A total of 315 questionnaires were analyzed (response rate = 46.3%). The mean age of participants was 32.4 years old and 52.4% of participants were male. Eighty-four percent of respondents reported that they routinely perform regular recall with their patients. Recall practice was significantly associated with practitioner experience, country of graduation, and workplace. Practitioners who graduated from Saudi universities were found to be less likely to practice regular recall visits compared to others ($p < 0.01$). On the other hand, practitioners who are working in university hospitals are more likely to practice dental recall compared to those who are working only in dental clinics ($p = 0.02$).

Conclusion: A low percentage of dentists advocated and practiced regular recall visits in their private practice. Efforts should

be undertaken to educate the practitioners on the importance of regular recall visits in their healthcare settings.

Clinical significance: Scheduling appropriate recall visits is an essential component for achieving successful treatment outcomes. This study highlights the poor recall practice among dentists and the need to raise the awareness of the importance of recall visits.

Keywords: Dental, Recall, Questionnaire.

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INTRODUCTION

Recalls are necessary to coordinate continuity between current treatment and treatment that may be required in the future.^{1,2} During a treatment regime, recall is implemented by maintaining contact with the patient through follow-up visits. Recall visits provide an opportunity for clinicians to evaluate treatment success, side effects, and the patients' overall progress and to identify any necessary intervention that has been overlooked. It also allows the clinician to address any issues or complications following treatment.³ Patients are often reluctant to admit that they do not understand post-treatment instructions.³ Therefore, a recall visit may be essential to clarify misunderstandings.

Recall in clinical dentistry is a vital part of the overall management strategy.⁴ The purpose of these visits is to prevent dental disease through regular maintenance and preventive procedures. Tooth caries is one of the most prevalent chronic diseases worldwide and is the primary cause of orofacial pain and tooth loss.⁵⁻⁷ Cariogenic bacteria are the principal cause of caries and intensive, and preventive treatment should be considered for high-risk patients.⁸ This disease must be managed

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throughout life to relieve pain and improve appearance and speech.^{9, 10}

Treatment can always fail, and the best way to recognize failure early on is to ensure frequent recall visits. Limited understanding of the importance of recall among dental practitioners can affect the overall quality of service given to dental patients. Therefore, a survey to assess dental recall practice among general dental practitioners in Riyadh, Kingdom of Saudi Arabia was designed, where recall has not been investigated so far.

MATERIALS AND METHODS

This study was approved by the ethics committee of King Abdullah International Medical Research Center (KAIMRC), Riyadh, Kingdom of Saudi Arabia. Informed consent was obtained from the study participants in full accordance with the World Medical Association Declaration of Helsinki.

The sample size for this cross-sectional study was calculated using EpiInfo Statcalc, version 7 (Centers for Disease Control and Prevention, Atlanta, GA). A conservative choice of prevalence was set at 50%, and it was calculated that 300 participants would achieve a 95% confidence interval for the prevalence with a 5% margin of error. The city of Riyadh is divided into five regional blocks—north, south, east, west, and central. The list of all the dental clinics in Riyadh was obtained from the Ministry of Commerce. The investigators randomly selected 15 dental clinics from each of the 5 blocks adding to a total of 75 dental clinics. In addition, data collection was also performed in 4 tertiary care centers (King Saud Medical City, King Fahad Hospital—National Guard, Security Forces Hospital and King Khalid University Hospital) and 3 Academic Universities (King Saud Bin Abdulaziz University for Health Sciences (KSAU-HS), Riyadh Colleges of Dentistry and Pharmacy and King Saud University). This study included all National Guard employees working as general dental practitioners in Riyadh. The study excluded those employees who were on official holidays during the study period. Self-administered questionnaires were distributed to all the dentists practicing in the selected clinics.

A 24-item questionnaire was used to collect information about the general dental practice, knowledge of dental recall, and dentist/patient factors related to recall from general dental practitioners working in Riyadh, Saudi Arabia. Because a similar study has not been published before, the questionnaire was drafted and then evaluated by experts in the field. The questionnaire was finalized based on these evaluations. The questionnaire elicited data on personal information (8 items), practice

information (3 items), knowledge about the dental recall (3 items), recall practice (6 items), and patient factors that might influence recall (4 items). The respondent was given the opportunity to make any additional comments. A five-point Likert scale showed the level of agreement in cases that required recall visits, reasons for patients not returning for recall, and techniques to encourage return for recall.

Statistical analysis was performed using SPSS for Windows version 22.0 (SPSS Inc., Chicago, IL, USA). Descriptive statistics were generated and Chi-square test was used to examine the significance of differences in recall between groups. A stepwise logistics regression was used to identify the significant factors on recall practice. Tests were considered significant if the p-value was less than 5%.

RESULTS

Respondents

A total of 681 questionnaires were delivered to general practitioners in Riyadh, Kingdom of Saudi Arabia. The overall response rate was 46.3% (N = 315). The mean age of participants was 32.4 years old (range: 22–60 years) and 52.4% of participants were male (Table 1). One-third of the respondents graduated from Saudi Arabia universities. Most of the respondents were working in dental centers (44.8%), followed by hospitals (22.2%), dental clinics (20.5%), and university hospitals (12.5%).

Table 1: Baseline characteristics

Variable	Category	N	%
Gender	Male	165	52.4
	Female	150	47.6
Years of experience	<= 5	139	44.1
	5 to 10	56	17.8
	10+	120	38.1
Number of patients	<= 24.0	78	26.3
	25.0 - 35.0	72	24.2
	36.0 - 60.0	90	30.3
	61.0+	57	19.2
Country of graduation	Saudi Arabia	96	33.0
	Other Asian Arab Countries	91	31.3
	African Arab Countries	65	22.3
	Others	39	13.4
Workplace	University hospital	37	12.5
	Hospital	66	22.2
	Dental Center (Polyclinic)	133	44.8
Perform recall	Dental Clinic	61	20.5
	Yes	251	83.7
	No	49	16.3

"Others" category includes Philippines, Pakistan, India, France, and America

The average number of patients seen by each practitioner per week was 43.

Table 1 shows demographic distribution and baseline characteristics. Overall, 83.7% of the responding practitioners practiced regular recall visits (Table 1). Practicing recall was significantly associated with practitioner experience, country of graduation, and workplace (Table 2). Regarding knowledge of recall, 57% of practitioners received specific lectures on recall during their pre-doctoral dental education, 76.4% independently studied recall practice and 38.7% attended workshops about the recall. Only 35.3% of the respondents always explained the importance of recall visits to their patients and almost half of the patients knew about recalls and requested them.

From the results of stepwise regression (Table 3), practitioners who graduated from Saudi Arabia Universities were less likely to practice regular recall visits compared to others (OR = 0.05, p=0.006). On the other hand, practitioners who are working in university hospitals are more likely to practice dental recall compared to those who are working in dental clinics (OR = 13.1, p = 0.02).

The respondents were asked to rank the reasons for not scheduling regular recall visits. The majority of respondents reported that the absence of any clinical signs or symptoms was the reason for not scheduling regular recall appointments (Fig. 1).

More than 85% of respondents agreed that surgical treatment, trauma, implants, and complications associated with root canal treatment required recall visits (Fig. 2). Dentist’s self-perception about the need to schedule regular recall visits are shown in Figure 3. Eighty-eight percent of the respondents agreed that good doctor-patient communication increases the likelihood that a patient will return for recall (Fig. 4).

DISCUSSION

Patient’s recall visits should be implemented in dental treatment protocols.¹¹ The present study assessed dental practitioner’s awareness of recall visits in Riyadh, Kingdom of Saudi Arabia. To the best of our knowledge, this is the first survey that examined the recall practices among general dental practitioners in this region.

Only 84% of the respondents indicated that they perform recall visits. Recall should be observed and executed by all practitioners. In 1879, the American Academy of Dental Science advocated a six-month interval between recall visits¹², and in the early 1980s, it was suggested that recall visits be based on caries risk.¹¹ However, no protocols were established for evaluating risk and determining a recall schedule,

Table 2: Professional factors associated with recall practice

Variable	Category	Perform follow-up visits in your clinic		p value (Chi-square)
		N	%	
Gender	Male	137	85.6	0.327
	Female	114	81.4	
Experience (Years)	<= 5	104	41.4	0.019
	5 to 10	46	18.3	
	10+	101	40.2	
Number of patients	<= 24.0	63	26.5	0.398
	25.0 - 35.0	56	23.5	
	36.0 - 60.0	70	29.4	
Country of graduation	61.0+	49	20.6	< 0.001
	Saudi Arabia	61	67.0	
	Other Asian Arab Countries	75	84.3	
Workplace	African Arab countries	58	93.5	< 0.001
	Others	37	97.4	
	University hospital	36	97.3	
Workplace	Hospital	40	64.5	< 0.001
	Dental center (Polyclinic)	111	87.4	
	Dental clinic	49	83.1	

“Others” category includes Philippines, Pakistan, India, France, and America

meaning practitioners had to rely on subjective evaluation. Accumulating evidence has highlighted the need to create individualized risk-based recall schedules¹³⁻¹⁵, but how the risk and recall interval should be determined remains controversial. A study published by the National Institute for Clinical Excellence (NICE) in the United Kingdom recommended recall intervals between 3 and 24 months based on an evaluation of patients’ needs. Current recommendations based on this study are that individual recall schedules should be implemented once active therapy is complete and be based on risk evaluation.¹³ Teich’s approach towards patient-customized recall has increased in popularity, although the recommendations vary significantly.¹⁶

Table 3: Stepwise logistic regression of recall practice with associated factors

Factor	Categories	OR	95% C.I. for OR		P-value
			Lower	Upper	
Country of graduation	Saudi Arabia	0.05	0.01	0.44	0.006
	Other Asian Arab Countries	0.17	0.02	1.31	0.089
	African Arab Countries	0.42	0.04	3.97	0.447
	Others*	1			
	University hospital	13.06	1.51	112.79	0.020
Workplace	Hospital	0.63	0.25	1.64	0.348
	Dental Center (Polyclinic)	1.06	0.42	2.68	0.898
	Dental Clinic*	1			

“Others” category includes Philippines, Pakistan, India, France, and America

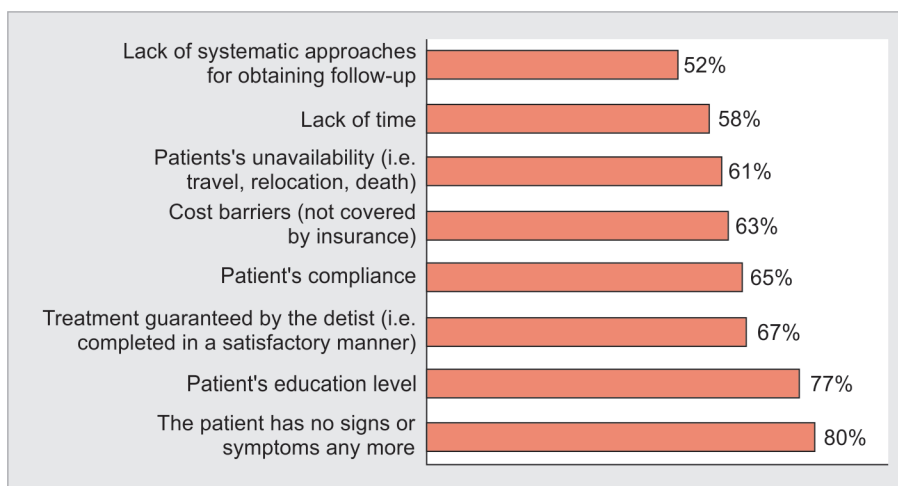


Fig. 1: Dentists self-reported reasons for not scheduling regular recall visits for patients

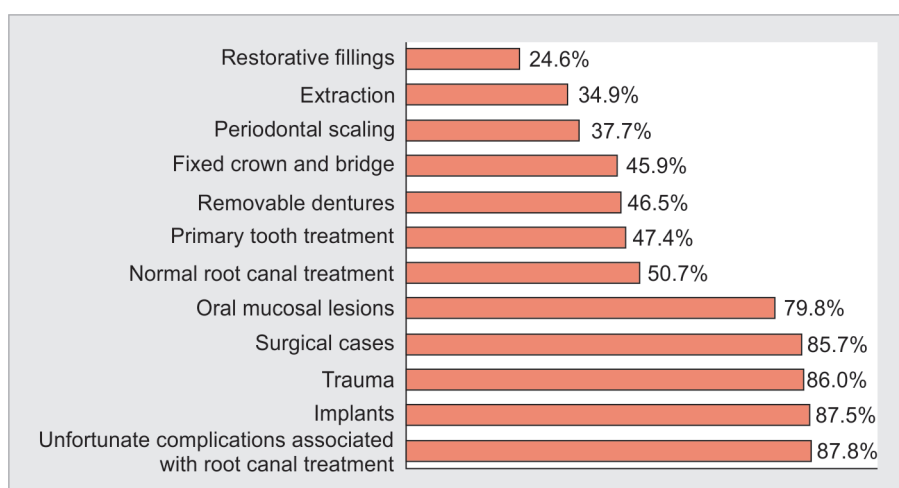


Fig. 2: Dentists perception about the clinical conditions that required regular recall visits

It is important to calculate the number of recall visits needed to complete a specific treatment. Recall visits for different conditions should be planned separately and pre-doctoral education should ensure that students are aware of how best to practice recall in all specialties. Protocols and guidelines for risk determination and recall schedule design have now been implemented for caries, periodontal disease, and maintenance of complete dentures.¹⁶

The present results revealed that “Country of graduation” and “Workplace” were considered influencing factors on recall practice. Graduates from Saudi dental schools were shown to be the least likely to perform the recall. Based on this, recommendations to educate dental students and qualified dentists on the importance of recall should be emphasized and prioritized in Saudi universities. Working in university hospitals seems to be an ideal environment where practitioners usually perform the recall. The health authorities in Kingdom of Saudi Arabia should be contacted to issue guidelines and directives regarding dental recall in all healthcare settings for the success of dental treatment.

To the best of our knowledge, no study has assessed the knowledge and observance of dental recall visits among general dental practitioners. In this study, the majority of dentists stated that recall visits were necessary for patients with implants. Patients seeking prosthodontic implant treatment have been shown to present with

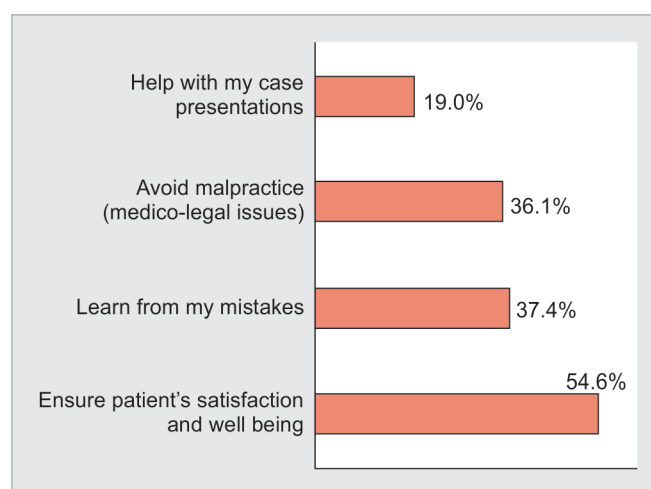


Fig. 3: Dentists self-perception about the need to schedule regular recall visits

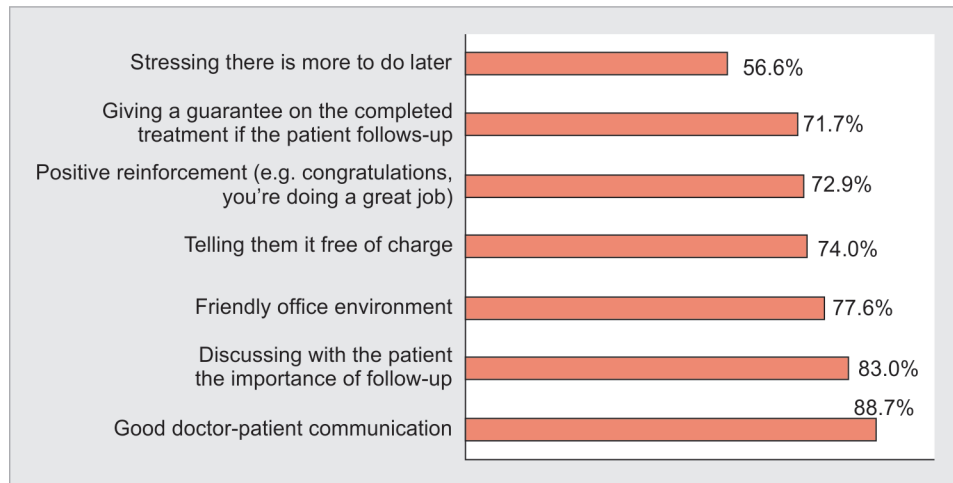


Fig. 4: Factors that would influence patient's will to return for recall visits

many symptoms contributing to the loss of teeth and deterioration of tooth structure.¹⁷ In addition, they have often already received substantial dental treatment. In these cases, complex treatment is necessary to restore function and esthetics.¹⁷ Previous studies have shown that lifelong recall visits are important to ensure the success of implant-borne restorations.¹⁸

We also found that dentists consider recall visits important for patients with complications following root canal treatment.¹⁹ A minority of respondents in our study indicated that patients with restorative fillings required recall visits. It has been reported that many complications can occur after caries treatment, especially when patients neglect their recall visits.²⁰ Restorative fillings have a limited lifespan, and replacing faulty fillings destroys dental tissue.²¹ Therefore, the need for recall visits even following this type of routine treatment should be stressed among dental practitioners.

Patients seldom understand the importance of recall visits, therefore motivating patients to attend follow-up appointments remains a challenge for healthcare providers. Most respondents in the present study reported that the educational level of patients has an important influence on their recall attendance and that attendance can be improved by better dentist-patient communication. Limited knowledge about recall has been shown to affect the quality of treatment given to dental patients.¹⁷ Oral health education may be a strong predictor of recall attendance; therefore, good oral health education is important for the competence of new dental professionals. Dental homes are designed to encourage the long-term maintenance of oral hygiene, and patient education is central to the success of these homes. It would be interesting to develop another recall questionnaire to collect information from dental patients to elucidate the factors that influence patient understanding of the importance of dental recall. A limitation of this study is that the data were collected using questionnaires and this

introduces several biases that may affect the study results. Future studies with a more robust study design in a larger population are indicated to better understand the recall practice among dentists.

CONCLUSION

In conclusion, not all dental practitioners in Kingdom of Saudi Arabia are aware of the importance of recalling patients for regular check-ups and a considerable percentage reported they do not explain the importance of recall visits to their patients. Therefore, educating dental students and qualified dentists on the importance of recall should be prioritized. Patients should also be educated about the importance of recall and encouraged to attend all recall visits.

CLINICAL SIGNIFICANCE

This study highlights the importance for dentists to practice individualized risk-based recall schedules. Regular recall visits provides the dentist with an opportunity to evaluate the treatment success, patient's overall progress and also to identify the need for any further interventions.

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