Med. J. Cairo Univ., Vol. 86, No. 3, June: 1083-1091, 2018
www.medicaljournalofcairouniversity.net

Medical Dental Practitioners Assessments of Electronic Dental Record in Primary Health Care in Kuwait

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Abstract

Background: The adopting of electronic patient records can improve healthcare quality and efficiency, including in dentistry. Doctors understanding are important for the successful implementation of such systems into routine use.

Aim of the Study: The study objective was to assess the dentists prospective about electronic dental records.

Material and Methods: For this cross-sectional national survey, 300 self-administered questionnaires were distributed to dentists working at randomly selected primary-health centers in the five healthcare regions of Kuwait during November (2016) and March (2017). We received 247 completed questionnaires (82% response rate). This study collected socio-demographic data and responses on Likert scales to 44 statements on the benefits, features and functionality of electronic records, accessing and sharing, as well as obstacles preventing their use and practitioners' resistance.

Results: Participants responded very positively, particularly on issues such as the storage of radiographic images (85% agreed) and records (89%), sharing patient records with other dentists (96%), and the potential for improving medical histories (98%). The main obstacles to uptake identified were software/hardware issues (57%) and the need for technical training (55%) and maintenance (65%). There was some regional variation in positive responses.

Conclusions: Kuwaiti medical dental practitioners recognize the need for electronic patient records to optimize the quality of patient care. They generally have positive attitudes towards electronic records, and most agree that accessing and sharing them with other healthcare providers is useful. They identified several obstacles to uptake, such as the need for technical support and training. Our findings indicate a context supportive of the widespread adoption of electronic dental records in Kuwait.

Key Words: *Dental informatics – Electronic medical records – Dental record – Medical dental practitioners – Primary care – Kuwait.*

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Introduction

MANY medical dental practitioners' are unfamiliar with health information systems or how they relate to clinical practice, [1] even though health informatics applications can enhance the quality of healthcare delivery and improve the workflow of clinical practitioners' [2]. Electronic patient record systems are an element of health information systems (HITSs), covering software and hardware (e.g. computers, digital X-ray processors, printers), and electronic health records (EHRs).

Calls for electronic dental records go back to the early 1990s [3,4]. In 2001, Schleyer and Spallek [5] discussed the potential of informatics systems for practicing medical dental practitioners', citing the benefits of monitoring oral disease trends and clinical data. However, the uptake of electronic recording systems in healthcare is often slow [6,7] and this can be due, in part, to negative perceptions among clinicians [6,11,12].

The Kuwaiti Ministry of Health recognized the need for an accurate, national HITS for recording data, generating accurate statistics, assisting with treatment planning, evaluation and decision-making, and facilitating high-quality care. They developed various schemes to improve healthcare quality in primary, secondary and tertiary care, and HITS are now used in every primary healthcare center in Kuwait. The entire care process is automated across physician, dental and nursing pathways, and laboratories and pharmacies [8]. The

Abbreviations:

EDRs : Electronic Dental Records.
HITS : Health Information Technology System.
EHRs : Electronic Health Records.
ADA : American Dental Association.
USA : United State of America.

objectives of this study were to evaluate the medical dental practitioners' prospective about using electronic dental records (EDRs), the functionality and features of its, and their value for accessing and sharing patient information, as well as the major obstacles to their adoption in routine practice.

Material and Methods

A cross-sectional national survey was conducted during November (2016) to March (2017). The total number of medical dental practitioners' in Kuwait at the time was 511. A power calculation using a finite population correction showed that to achieve a 95% confidence interval of ± 5% for a binary outcome with a proportion of 50%, a sample size of 220 was required. This did not adjust for a cluster sampling design, as we considered the intra-class correlation would be negligible. Based on a likely response rate, we decided to distribute 300 questionnaires to practicing medical dental practitioners' from randomly selected clinics in Kuwait's five healthcare regions (Ahmadi, Capital, Farwaniya, Hawalli, Jahra).

The self-administered questionnaire was developed by referring to similar published studies **[9,10]** and the authors' experience. It consisted of two sections, with the first relating on socio–demographic factors. The second comprised 44 statements designed to elicit opinions about the benefits, features and functionality of EDRs. Each statement required a response on a three-point Likert scale. A first draft of the questionnaire was piloted on eight medical dental practitioners' and revisions made. Questionnaires were delivered by hand, in sealed envelopes, together with a consent form that explained the purpose of the study and assured participants of confidentiality. This was done to ensure a high response rate. They were collected by hand one week later.

Results

The first section of the questionnaire yielded binary and categorical data for demographic factors and background variables. The statements yielded ordinal data, which were analyzed by Kruskal-Wallis tests, Mann-Whitney tests, Spearman's correlations and linear regression, as appropriate.

Study population:

Of 300 questionnaires, 247 were returned (a response rate of 82%) from all five healthcare regions (50 from Ahmadi, 54 from Capital, 56 from Farwaniya, 55 from Hawalli, 32 from Jahra). There were 1-8 dental clinics in each healthcare center (median 3; interquartile range 3-4). Three questionnaires had missing data.

Socio-demographic information:

Most respondents were male (58%; 143/247) and most were Kuwaiti (72%; 178/247). Their median age was 30-39 years (109 were 29 or less, 77 were 30-39, 33 were 40-49, and 28 were 50+). They had between 1-40 years of experience in dentistry (median 5; interquartile range 3-11). They worked each day for between 1-12 hours (median 6; interquartile range 6-7): 91% worked 6-8 hours per day, 6% worked less than this, and 2% worked more.

Medical dental practitioners views and experience of using electronic dental records:

There were already fully implemented EDR systems in 112 (45%) of the clinical facilities in our sample. Another 105 (43%) had partially implemented systems and 30 (12%) had no system. When asked if there is a need for patients' dental records to provide and/or organize effective medical care, just five medical dental practitioners (2%) said no. When asked about the bidirectional flow of patient medical information between dental practitioners' and general doctors/pharmacists, 167 respondents (68%) thought it was "very significant", 77 (31 %) thought it was "moderately significant" and 3 (1%) responded that it is "not significant".

When asked whether patients need to have access to their records, 113 respondents (46%) said they need complete access, 79 respondents (32%) said they only need partial access and 42 respondents (17%) said patients need no access, with 12 responding that they did not know (5%) and one missing response. Patient referrals were made daily by 130 (53%) clinics, weekly by 86 (35%) and monthly by 31 (13%). Most respondents (144; 59%) prefer to make referrals electronically.

Perceptions about the benefits of EDRs:

Table (1) shows the responses to various questionnaire statements (14-27) about the potential value of EDRs. Overall, participants were very positive about the benefits of EDRs; over two-thirds agreed with all the statements except for "decrease office expenses" and "increase number of patients". We produced a total score for each participant by combining their responses to statements 14-27, with "Agree" = +1, "Disagree" = –1, and "neither" = 0. The resultant total scores varied from 14 ("Disagree" on all items) to +14 ("Agree" on all items) (median score 11; interquartile range 9-13; modal score 14 (24%). Only 2 participants had overall negative scores.

Table (1): Benefits of electronic dental records.

Statements on questionnaire	Disagree	Neither agree nor disagree	Agree
14 Increase dental practitioner efficiency	8 (3%)	16 (6%)	223 (90%)
15 Improve dental diagnosis, planning and treatment	2 (1%)	23 (9%)	222 (90%)
16 Increase dental practitioner productivity	6 (2%)	38 (15%)	203 (82%)
17 Reduce the time to transfer records	8 (3%)	27 (11%)	212 (86%)
18 Decrease office expenses (1 missing)	9 (4%)	79 (32%)	158 (64%)
19 Improve communication between the dental practitioner and other doctors	4 (2%)	17 (7%)	226 (92%)
20 Improve communication between the dental practitioner and the patient	10 (4%)	53 (21%)	184 (74%)
21 Improve dental record quality	2 (1%)	17 (7%)	228 (92%)
22 Improve management of the appointment system	8 (3%)	36 (15%)	203 (82%)
23 Increase access to shared patient information	4 (2%)	26 (11%)	217 (88%)
24 Increase the number of patients seen by the dental practitioner	47 (19%)	88 (36%)	112 (45%)
25 Reduce dental record storage requirements	12 (5%)	60 (24%)	175 (71%)
26 Protect the dental practitioner from being exposed to blood-borne diseases (e.g., AIDS, hepatitis)	16 (6%)	43 (17%)	188 (76%)
27 Increase patients' satisfaction	8 (3%)	57 (23%)	182 (74%)

Comparing the total scores with different demographic variables using Kruskal-Wallis tests, it has been found a significant difference between healthcare regions ($\chi^2(4) = 12.0$; $p=0.017$). Participants in the Capital region were the least positive about EDRs; those in Jahra were the most positive The median overall score of participants on the benefits of EDRs were as follows: Capital 10 (interquartile range 8-13), Farwaniya 12 (interquartile range 8.5-14), Ahmadi 11 (interquartile range 9-14), Hawalli 11 (interquartile range 8-12), and Jahra 12 (interquartile range 12-13.5).

Using post hoc Mann-Whitney tests, this study found that respondents in Hawalli had statistically significantly more positive perceptions than those in most other regions (Table 2).

Table (2): Post hoc tests comparing views of electronic dental records by region.

Region	Farwaniya	Ahamdi	Hawalli	Jahra
Capital	$p=0.2$	$p=0.2$	$p=0.7$	$p=0.0023$
Farwaniya		$p=0.9$	$p=0.4$	$p=0.07$
Ahamdi			$p=0.5$	$p=0.021$
Hawalli				$p=0.0005$

There was also no statistically significant difference in the total scores by nationality (Mann-Whitney test z=0.5; $p=0.6$) or gender (Mann-Whitney test z=0.6; $p=0.5$). There was a small but significant association with years of experience (Spearman's correlation $r=0.18$; $p=0.005$), whereby participants with more experience had more positive perceptions about EDRs; and with age (Spearman's correlation $r=0.16$; $p=0.014$), whereby older participants were more positive. Age and years of experience were highly correlated ($r=0.82$; $p<0.0001$). Using a linear regression, multivariable analysis of all demographic variables (region, gender, age, nationality and years of experience) was performed to predict overall scores, but this model did not quite reach the level of significance ($F_{8, 237} = 1.9$; $p=0.055$).

No correlation was found between total scores and hours worked (Spearman's correlation $r=0.02$; $p=0.7$), the number of clinics in individual health centers (Spearman's correlation $r=-0.04$; $p=0.5$), the degree of local implementation of EHRs (Spearman's correlation $r=0.10$; $p=0.10$), or for valuing patient access (Spearman's correlation $r=0.09$; $p=0.2$). We also evaluated how participants' perceptions about patient access varied in statements 15, 17, 19, 20, 21, 22, 23, 24 and 27 (Table 3).

Most of the correlations did not reach statistical significance, but those who agreed that electronic records can "improve communication between the dental practitioner and patient" had more positive perceptions about patient access.

Perceptions about the functionality and other features of EDRs:

The usefulness of EDRs was assessed using a Likert scale with responses "Not at all", "Somewhat" and "Very" (Table 4). Participants considered all functional aspects of EDRs were very useful. We constructed a total usefulness score by summing Likert scores ("Not at all" = 0,

"Somewhat" = 0.5, "Very" = 1) for all items. The scores varied from 0.5 ("Not at all" on most items and "Somewhat" on one item) to 7 ("Very" on all items). The median score was 6.5 (interquartile range 5.5-7; modal score 7 (44%).

Table (3): Correlations between participants' perceptions about patient access and other issues about electronic dental records (EDRs).

Statement	Correlation with views on patient access	
	r	*p*
15 Improve dental diagnosis, planning and treatment	0.05	0.4
17 Reduce the time to transfer records	0.07	0.3
19 Improve communication between the dental practitioner and other doctors	–0.04	0.6
20 Improve communication between the dental practitioner and the patient	0.19	0.003
21 Improve dental record quality	0.07	0.3
22 Improve management of the appointment system	0.11	0.11
23 Increase access to shared patient information	0.10	0.11
24 Increase the number of patients seen by the dental practitioner	0.08	0.2
27 Increase patients' satisfaction	–0.05	0.4

Table (4): Usefulness of different electronic dental record functionalities.

Statements on questionnaire	Not at all useful	Some what useful	Very useful
28 Digital radiography	2 (1%)	36 (15%)	209 (85%)
29 Imaging software	6 (2%)	47 (19%)	194 (79%)
30 Storing clinical/digital records	3 (1 %)	23 (9%)	221 (89%)
31 Electronic referral forms	11 (4%)	63 (26%)	173 (70%)
32 Paperless charting	8 (3%)	59 (24%)	180 (73%)
33 Digital photography (1 missing)	12 (5%)	44 (18%)	190 (77%)
34 Electronic/virtual models (1 missing)	13 (5%)	63 (26%)	170 (69%)

Comparing total usefulness scores against demographic variables, we found no significant differences between regions (Kruskal-Wallis test $\chi^2(4)=9.2$; $p=0.056$) or nationality (Mann-Whitney test $z=-0.1$; $p=1.0$). There was no significant correlation with years of experience (Spearman's correlation $r=-0.05$; $p=0.5$), age (Spearman's correlation $r=0.03$; $p=0.6$), gender (Mann-Whitney test $z=0.4$; $p=0.7$), hours worked (Spearman's correlation $r=0.02$; $p=0.7$), the number of clinics in each health center (Spearman's correlation $r=0.02$; $p=0.7$), the degree of local implementation (Spearman's correlation $r=0.04$; $p=0.5$) or opinions on patient access (Spearman's correlation $r=0.07$; $p=0.3$).

Responses about the importance of specific features of EDRs are also shown in Table (5). The most positive responses were to the statements regarding the function of EDRs as medical history forms (98%; 241), for storage of dental radiographic images (94%; 232), and for dental and medical alerts (92%; 228). Rated least important was the booking-management system. We compared responses to this statement with several other items: level of electronic dental record implementation (Spearman's correlation $r=-0.12$; $p=0.053$), hours worked (Spearman's correlation $r=0.11$; $p=0.10$) and the number of clinics (Spearman's correlation $r=-0.05$; $p=0.4$), but found no statistically significant relationship.

Table (5): Importance of various features of EDRs.

Statements on questionnaire	Disagree	Neither agree nor disagree	Agree
35 Oral health status form	0	24 (10%)	223 (90%)
36 Medical history form	1 (<1%)	5 (2%)	241 (98%)
37 Patient booking management system	19 (8%)	69 (28%)	159 (64%)
38 Treatment plan form	2 (1%)	24 (10%)	221 (89%)
39 Dental radiographic images/films	0	15 (6%)	232 (94%)
40 Oral health examination list form	2 (1%)	44 (18%)	201 (81%)
41 Periodontal form	1 (<1%)	50 (20%)	196 (79%)
42 Dental and medical alerts (e.g., patient allergies, recent number of X-rays done)	0	19 (8%)	228 (92%)
43 Oral health progress notes	1 (<1%)	45 (18%)	201 (81%)
44 Oral health diagnosis	0	31 (13%)	216 (87%)
45 Extra-oral images	7 (3%)	62 (25%)	178 (72%)
46 Patient education form (e.g., instruction before and after tooth extraction)	8 (3%)	45 (18%)	194 (79%)

Perceptions about the value of accessing and sharing of EDRs:

Table (6) also shows that the majority of participants considered it useful to be able to access and share electronic records with other dental practitioners' (96%; 238) and general physicians (83%; 204).

Perceptions about obstacles preventing the use of EDRs:

Responses on obstacles to the take-up of EDRs are shown in Table (7). The main were maintenance issues (65%; 160), incompatible software/hardware (57%; 139) and technical training (55%; 137).

The responses to these statements were compared with demographic variables using Kruskal-Wallis tests for healthcare region, Mann-Whitney tests for nationality, and Spearman's correlation for years of experience. There was no significant relationships were found (Table 8), with the one exception that non-Kuwaiti medical dental practitioners' perceived dental practitioner resistance as less of an obstacle (Table 9). e Also compared overall perceptions about obstacles to usage of EDRs with the existing systems at the clinic and to working hours, using Spearman's correlations (Table 8).

We also compared responses to the obstacles questions to respondents' local level of electronic dental record implementation and hours worked using Spearman's correlations (Table 8). If a dentist worked somewhere with a greater degree of electronic dental record implementation, then they saw practitioner resistance as less of a problem. Other items showed no significant correlation. The perception of security or privacy issues as an obstacle was higher among those who worked longer hours. Other items showed no significant correlation.

Table (6): Value of accessing/sharing EDRs information.

Statements on questionnaire	Disagree	Neither agree nor disagree	Agree
47 General physicians	3 (1 %)	40 (16%)	204 (83%)
48 Other dental practitioners	0	9 (4%)	238 (96%)

Table (7): Obstacles to using EDRs.

Statements on questionnaire		Disagree	Neither agree nor disagree	Agree
49	Technical training	57 (23%)	53 (21%)	137 (55%)
50	Dental practitioner resistance to use of the system	66 (27%)	75 (30%)	106 (43%)
51	Incompatible software or hardware	33 (13%)	74 (30%)	139 (57%)
52	Cost of equipment	61 (25%)	101 (41%)	85 (34%)
53	Work legislation (laws/policy)	62 (25%)	95 (38%)	90 (36%)
54	Unclear instructions and guidelines of how to use the system	44 (18%)	78 (32%)	125 (51%)
55	Confidence with technology	59 (24%)	77 (31%)	111 (45%)
56	Security or privacy issues	67 (27%)	64 (26%)	116 (47%)
57	Maintenance issues	32 (13%)	55 (22%)	160 (65%)

Table (8): Comparison of responses to obstacles to using electronic dental records (EDRs) by healthcare region, nationality and years of experience, EDR implementation and hours worked (significant differences in bold).

Statement	Healthcare-Region	Nationality	Years of experience	EDR implementation	Hours worked
			Spearman's correlation		
	Kruskal-Wallis tests	Mann-Whitney test			
49 Technical training	$\xi^2(4) = 7.8, p=0.098$	$z=0.4, p=0.7$	$r=0.06, p=0.4$	$r=-0.10, p=0.1$	$r=0.08, p=0.2$
50 Dental practitioner resistance to use of the system	$\xi^2(4) = 6.5, p=0.2$	$z=-2.8, p=0.005$	$r=-0.02, p=0.8$	$r=0.19, p=0.0024$	$r=0.09, p=0.2$
51 Incompatible software or hardware	$\xi^2(4) = 5.8, p=0.2$	$z=-1.5, p=0.1$	$r=-0.06, p=0.3$	$r=0.02, p=0.8$	$r=-0.12, p=0.058$
52 Cost of equipment	$\xi^2(4) = 1.0, p=0.9$	$z=1.4, p=0.2$	$r=0.10, p=0.1$	$r=-0.03, p=0.6$	$r=0.11, p=0.075$
53 Work legislation (laws/policy)	$\xi^2(4) = 2.9, p=0.6$	$z=0.6, p=0.6$	$r=0.11, p=0.09$	$r=-0.06, p=0.3$	$r=0.11, p=0.10$
54 Unclear instructions and guidelines of how to use the system	$\xi^2(4) = 4.8, p=0.3$	$z=0.2, p=0.9$	$r=-0.05, p=0.4$	$r=-0.02, p=0.8$	$r=0.01, p=0.9$
55 Confidence with technology	$\xi^2(4) = 2.7, p=0.6$	$z=-0.5, p=0.6$	$r=0.02, p=0.8$	$r=-0.07, p=0.3$	$r=0.11, p=0.086$
56 Security or privacy issues	$\xi^2(4) = 3.8, p=0.4$	$z=1.1, p=0.3$	$r=0.02, p=0.8$	$r=-0.06, p=0.4$	$r=0.14, p=0.027$
57 Maintenance issues	$\xi^2(4) = 3.7, p=0.4$	$z=0.4, p=0.7$	$r=0.03, p=0.7$	$r=-0.07, p=0.3$	$r=0.05, p=0.4$

EDR = Electronic Dental Record.

Table (9): Participants responding to "resistance" to using electronic dental records (EDRs) by nationality.

Nationality	Disagree	Neither agree nor disagree	Agree	Total
Kuwaiti	40 (22%)	53 (30%)	85 (48%)	178 (100%)
Non-Kuwaiti	26 (38%)	22 (32%)	21 (30%)	69 (100%)

Discussion

To our knowledge, this is the first study to assess perceptions of dental practitioners' in Kuwait about the adoption of EDRs in clinic settings. Overall, the participants were very positive about their potential value and mostly supported the benefit of patients having (at least partial) access to their records. The participants agreed that the benefits include improvements in record quality, reduced times for transferring records, improved efficiency and productivity, management of appointment systems, storage of records, and reduced clinic costs. The benefits of most importance included better communication with other physicians and patients, and the ability to share patient information, to improve diagnosis, planning, treatment and patient satisfaction. They also supported the concept of preventing practitioner exposure to blood-borne diseases.

Several studies have shown that positive support from any workforce is necessary for successful uptake of electronic systems, yet this is frequently absent [6,11,12] . The current results in Kuwait are encouraging with respect to expanding the use of EDRs, and are consistent with findings from Canada, [9] the US and Scandinavia [13]. According to a survey in Wisconsin, US, [14] most healthcare providers wish to access their patients' dental records to optimize their medical care, and would welcome improved communication with medical dental practitioners' about their patients. Another US survey [15] revealed that physicians were also dissatisfied with the process of manual patient referrals to medical dental practitioners', showing a preference for electronic referrals. In a survey in Glasgow, UK, [16] patients expressed a wish to view their own medical and dental records, and both health workers and patients had positive attitudes to EHRs.

The medical dental practitioners' in our study considered the most important features of EDRs to be their multiple uses: For recording and communicating medical histories, treatment plans, examination lists, patient progress, medical alerts, diagnostic information, managing bookings and storing diagnostic images. An interview study in Pittsburgh, US [18] reported that medical dental practitioners require a range of information on

patients on their complaints, symptoms, progress and treatment. This is reflected by our findings and those of other studies that show a clinical need for systems that enable exchange of information between physicians and medical dental practitioners **[14,16,19,20]**.

The present study revealed that the main obstacles preventing medical dental practitioners from using EDRs related to issues with maintenance, software/hardware, technical training and guidelines. This aligns with other studies that cite issues with software, guidelines, and lack of comfort with the technology **[19,21,22]**. Two studies **[23,24]** indicate that a key barrier to large-scale implementation of health technology is the lack of well-trained practitioners in clinical and technical aspects, and when medical dental practitioners use technologies at an early stage, the investment in costs and skills is high and the benefits are often not tangible **[25]**. However, if they were to embrace technological developments more widely, the investment would be lower overall and the advantages more tangible. In this study, practitioner resistance was strongly associated with the level of currently implemented systems: Medical dental practitioners' working in clinics with systems in place perceived resistance as less of a problem. This is reassuring, and suggests that resistance decreases as practitioners become more familiar with such systems, as backed up by a study of medical dental practitioners in China **[26]** that revealed generally positive attitudes to computerization. The negative aspects of computerization can be amplified by non-users, but clear instructions can reduce resistance **[26,27]** and promote the concept that technology has tangible benefits if used more frequently. Other researchers similarly report security and privacy as obstacles to the uptake of information technologies **[21,22,28]**.

Conclusions:

It has been have demonstrated that Kuwaiti medical dental practitioners recognize the need for electronic patient records to optimize the quality of the care they deliver to patients, which should facilitate further uptake of EDRs. Our participants generally had positive perceptions of EDRs, but identified some key obstacles to uptake, namely technical support and training. The results show that most medical dental practitioners in Kuwait value the potential to share EDRs with other healthcare providers, and consider that EDRs add value to the care they deliver to their patients.

Declarations:

This study was approved by the Ethics Committee at the Ministry of Health in Kuwait. The paper has not been submitted else where and the authors confirm they have no conflicts of interest.

Funding statement:

This study represents an independent research without public or private financing.

Acknowledgements:

The authors would like to thank all those who participated in this study, especially the respondents to the questionnaire, and the directors of primary care centers for facilitating and supporting the data collection.

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تقييم ممارسى طب الأسنان فى سجل الأسنان الإلكترونى فى الرعاية الصحية الأولية

يمكن أن يؤدى استخدام سجلات المرضى الألكترونية إلى تحسين جودة وكفاءة الرعاية الصحية، بما فى ذلك فى طب الأسنان. يعدفهم الأطباء أمراً هاماً لنجاح تنفيذ هذه الأنظمة فى الإستخدام الروتينى.

هدف هذه الدراسة: هو تقييم سجلات الأسنان الإلكترونية من وجهه نظر أطباء الأسنان.

طريقة البحث: هى دراسة مقطعية وصفية، تم توزيع ٣٠٠ استبيان على أطباء الأسنان العاملين فى مراكز الرعاية الصحية الأولية المختارة عشوائياً فى مناطق الرعاية الصحية الخمسة فى الكويت خلال شهر نوفمبر (٢٠١٦) إلى شهر مارس (٢٠١٧) لقد تلقينا استبياناً مكتملاً ٨٢٪ معدل الاستجابة وتم خلاله عمل الاستبيان جمع معلومات عن فوائد وخصائص ووظائف السجلات الألكترونية والوصول إليها ومشاركتها، وكذلك العقبات التى تحول دون استخدامها ومقاومة الممارسين لها.

النتائج: استجاب المشاركون بأيجابية كبيرة، لا سيما فيما يتعلق بمسائل مثل تخزين الصور الاشعاعية (وافق ٨٥٪) والسجلات (٨٩٪)، وتبادل سجلات المرضى مع أطباء الأسنان الأخرين (٩٦٪)، واحتمال تحسين التاريخ الطبى (٩٨٪). كانت العقبات الرئيسية التى تم التعرف عليها هى مشكلات البرمجيات/الأجهزة (٥٧٪) والحاجة إلى التدريب الفنى (٥٥٪) والصيانة (٦٥٪).

الاستنتاجات: أفاد أخصائيو طب الأسنان الكويتيون بالحاجة إلى سجلات إلكترونية للمرضى لتحسين جودة رعاية المرضى. لديهم بوجه عام موقف إيجابية تجاه السجلات الإلكترونية، ومعظمهم يوافق على أن الوصول إليهم ومشاركتهم مع مقدمى الرعاية الصحية الآخرين مفيد. حددوا العديد من العقبات التى تحول دون الحصول عليها، مثل الحاجة إلى الدعم الفنى والتدريب. تشير النتائج التى توصلنا إليها إلى سياق يدعم التبنى الواسع النطاق لسجلات الأسنان الإلكترونية فى الكويت.