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Awareness and attitude of patients toward extra-oral examination in dental practice in Riyadh, Saudi Arabia

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ABSTRACT

Aim: to assess and evaluate awareness and attitude of patients who are seeking dental treatment at both governmental and dental private polyclinics in Riyadh city towards Extra-oral examination (EOE). *Methodology:* A total of 661 governmental and private dental

clinics visitors were participated in this cross-sectional analytical study. The study was conducted using electronic and paper-based surveys. Participants were asked of total 20 questions, including demographics, Patients' Experience, and Patients' knowledge and attitude toward the Extra-Oral Examination. Finally, the data was entered using Microsoft excel program then analyzed by SPSS program version 24. *Results:* There is lack of knowledge about EOE as only 10.9% of participants heard about it. 53.9% do not know about the importance of EOE. 7.9% received EOE in governmental clinics, similarly only 3.4% were examined in private clinics. Vital signs were recorded more often in governmental clinics as 29.2% of participants had their vital signs measured while only 12.2% in private polyclinics. *Conclusion:* The performance of Extra-Oral Examination was significantly low for both governmental and private dental clinics. Moreover, the awareness of the sample also was low.

Keywords: Extra-oral examination, vital signs, dental practice, physical assessment.

1. INTRODUCTION

By definition, diagnosis is the art of using scientific knowledge to identify oral disease processes & to distinguish one disease from another (Textbook of oral medicine, 2014). The purpose of establishing a diagnosis is to be able to use the safest and most effective treatment, as well as having a precise prognosis. A diagnosis is reached by systematic correlation of the primary data that comes from the history obtained from the patient, general physical assessment, detailed extra-oral and intraoral examination and investigative test results and reports (Johns, 2001). The extra-oral examination (EOE) mentioned in this study is mainly focused on examining the head and neck region and making a note of all gross abnormalities in that region. Extra-oral examination has a major role in the physical examination of patients presenting in the clinics. Unfortunately, this part of patients' physical assessment is underestimated and rarely performed in the dental practice (Awojobi et al., 2012). Surprisingly, there are not enough articles that focus on the issue of patients' understanding of the process and importance of extraoral examination EOE in dental practice. Proper diagnosis of existing problems for patients presenting in the dental clinic is essentially the most crucial step in ensuring appropriate oral health care. The process of physical examination consists of inspection, palpation, percussion, and auscultation (Tyldesley's Oral Medicine, 2003). Regularly, a dentist conduct a physical examination to the patients prior to dental treatment, and it is frequently limited to inspect superficial intraoral tissues, in addition to those of the head, neck, and exposed body parts (Feagans et al., 2014). The EOE should be extended to include the assessment of the patient's general appearance, examination of the scalp, eyes, neck, hands, and skin of the arms and face for any significant findings. This study was designed to investigate the opinions and attitudes of patients toward EOE as it is a systematic element in the diagnostic process in dentistry. It also provides an idea of whether dentists are examining their patients prior to the treatment or not.

2. METHODOLOGY

This cross-sectional study was conducted between February and November 2019 on patients who have received dental care in Riyadh, Saudi Arabia. Both governmental and private dental clinics were included. Ethical approval was received from the institutional review board of King Abdullah International Medical Research Center (KAIMRC). All participants were asked to give an informed consent. The inclusion criteria were Saudi patients aged between 18-60 years old who received dental care in either governmental or private dental clinics in the past 12-months in Riyadh, Saudi Arabia. Participants who did not meet these criteria were excluded. A self-structured survey was distributed as a hard and soft copy. A literature review was done in PubMed, Web of Science and Cochrane databases including the manual search to identify the critical questions and areas of interest. A total of 76 articles were found to correlate with the designated key words. After duplicate removal, 49 articles remain. From which 20 full-text article assessed for eligibility, and finally 6 articles included only. The questionnaire was formulated utilizing the help of an expert in the field to include questions to cover the area of interest and address significant issues in this study's aim. The research committee validated the questionnaire in the college of dentistry, King Saud bin Abdul-Aziz University for health sciences. A total of 20 questions in the questionnaire divided into three major sections: (1) Demographics, (2) Patients' Experience (3) Patients' knowledge and attitude toward the Extra-Oral Examination. A cluster sampling technique was used; As Riyadh was divided into four regions (north, south, east, and west) to collect the participants who meet the study's inclusion criteria. There were no previous studies conducted on this specific subject. Therefore, estimation of the sample size of patients who have received dental care in Riyadh within the past 12-months was assumed that the response distribution is 50% of patients have had an EOE, with a margin of error of 5% and a confidence level of 95%, the estimated minimum sample size needed was 385. As the sampling technique was a cluster, the design effect increased the sampling size by 1.5 times. The minimum valid sample size was 578 patients. After obtaining approval, paper-based surveys were distributed in the waiting areas of both governmental and private dental clinics. In addition, the

online-based surveys were distributed using social media platforms through Google form. Finally, data were transferred into Microsoft excel sheet and prepared for analysis by SPSS version 23. Frequency distribution was done to identify the demographics data of the participants. The statistical differences were calculated by chi-square tests. Results with a p-value of equal to or less than 0.05 were significant.

3. RESULTS

A total of 280 paper-based questionnaires were distributed (90. 3%) response rate was achieved (253). In addition, 546 responses from Google forum electronic surveys were answered, reaching a sample size of 799, distributed among the four regions of Riyadh, Saudi Arabia almost equally. Moreover, out of the 799 samples collected electronically, only 661 met the inclusion criteria. The distribution of participants in the study was 38.1% (252) from the government hospitals and 61.9% (409) from private dental polyclinics. Out of 661 participants, there were 51.9% (343 males) and 48.1% (318 females). The educational level of most participants was a bachelor's degree, with a percentage of 67.3% (454). Most of the participants' income was less than 5000 SR in 39. 5% of the sample size (261).

Table 1 Demographic characteristics of the sample

Demographics/ Region	**East**	**West**	**north**	**south**
Age	Mean 36 years	Mean 42 years	Mean 37 years	Mean 40 years
Gender	Males 54. 2% Females 45. 8%	Male 71. 3% Females 28. 7%	Male 32. 9% Females 67. 1%	Male 67% Female 33%
Level of education	Primary: 1. 6% Secondary: 1. 2% High school: 31. 2% University: 66. 4%	Primary: 0. 85% Secondary: 2. 5% High school: 30. 5% University: 66. 1%	Primary: 0. 81% Secondary: 2. 85% High school: 18. 7% University: 77. 6%	Primary: 2. 4% Secondary: 8. 1% High school: 30% University: 59. 7%
Income	Less 5000: 38. 7 % 5000-10000: 28. 1% 10000-15000: 20. 2% 15000 more: 13%	Less 5000:34. 4% 5000-10000: 29. 6% 10000-15000: 18. 8% 15000 more: 17. 2%	Less 5000: 42. 6% 5000-10000: 17% 10000-15000: 20% 15000 more: 20. 4%	Less 5000: 44. 5% 5000-10000: 25. 8% 10000-15000: 20. 9% 15000 more: 8. 8%

Table 2 Experience details of the sample.

Experience	**Private**	**Governmental**	**Total of the Study**
Where did you have the treatment?	61.9%	38.1%	100%
What is the reason of the visit?	Emergency: 40.8% Scheduled: 39.7% Follow up: 18% Other: 1.5%	Emergency: 27.8% Scheduled: 52.1 % Follow up: 17.6 % Other: 2.3%	Emergency: 35.9% Scheduled: 40.4% Follow up: 16.2% Others: 7.5%
What type of treatment?	Operative: 25.9% Endodontics: 20.8% Prosthodontics: 13% Orthodontics: 13.4% Extraction: 12.5% Others: 14.4%	Operative: 34.5% Endodontics: 14.6% Prosthodontics: 4.7% Orthodontics: 11.9% Extraction: 13.4% Others: 20.9%	Operative: 29.7% Endodontics: 19.4% Prosthodontics: 10.4% Orthodontics: 13.8% Extraction: 14% Others: 12.6%
Recording vital signs	12.2%	29.2%	18%*
EOE performance	3.4 %	7. 9 %	5%

**In relation to type of treatment (Highest in extraction 36%) (Lowest in orthodontics 5%)*

Out of total participants, only 5% are report receiving EOE before dental treatment. In governmental clinics only 7.9% of patients reported receiving EOE. On the other hand, 3.4% of patients who were treated in private clinics received EOE. Moreover, only 18.2% of total patients participants' vital signs were recorded before treatment more often in the governmental clinic as 29.2% of

participants treated in government clinics had their vital signs measured prior to treatment compared to 12.2% of participants in private clinics had their vital signs recorded. Furthermore, vital signs and EOE were associated with a specific type of treatment procedure as 36% of patients who had a tooth extraction received EOE, while patient receiving all other dental procedures combined 15.4% report receiving EOE.

Regarding patients' knowledge about EOE, only 10.9% of total patient-participants answered yes to "if they ever heard about EOE" and when asked about their opinion regarding the importance of the EOE 53.9% answered "I don't know" and only 8% answered "not important." In comparison, 38.1% answered that "it is important." Moreover, 42.7% choose, "I don't know" when they asked if they think the EOE can discover harmful diseases? while 46.7% answered, "yes." Furthermore, with the question regarding if the dentist's role was confined to the teeth, 40. 5% of total participants answered "yes." In comparison, 42.5% responded "no," and 17% replied "I don't know." finally, when participants were asked if EOE was one of their rights as patients presenting for dental treatment 39.2% responded with "yes," 45.2% answered with "I don't know," Only 15.6% choose, "no."

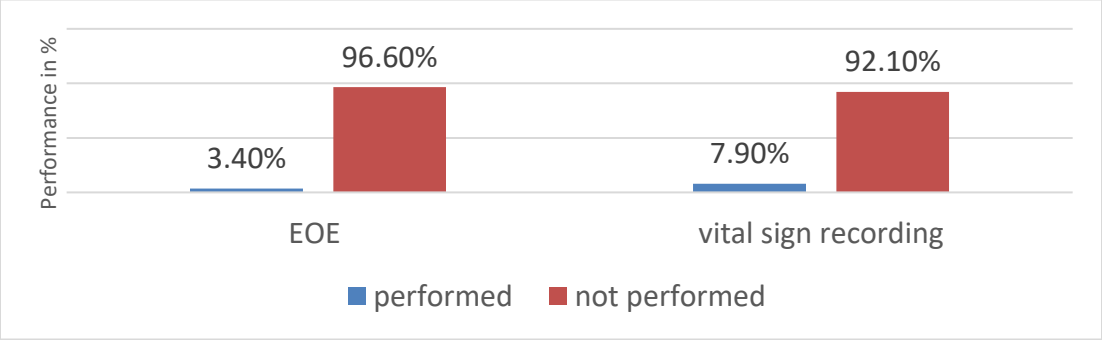

Figure 1 performance percentage of EOE & Recording vital signs

Table 3: Awareness and attitude of the sample

Question/ answer	YES	NO	I DON'T KNOW
Have you ever heard or read about EOE?	10. 9%	89. 1%	-
Opinion about the importance of the EOE?	38. 1%	8%	53. 9%
Do you think the extra-oral examination can detect harmful diseases?	46. 7%	10. 6%	42. 7%
Do you think the dentist role is confined to the Teeth?	40. 5%	42. 5%	17%
Do you think it is one of your rights to receive the extra-oral examination?	39. 2%	45. 2%	15. 6%
Are you interested in receiving extra-oral examination next time visiting a dentist?	59. 8%	20%	20. 2%

4. DISCUSSION

The presenting study shows that 95% of the participants reported not having Extra-Oral Examination during dental appointments. Different studies found similar results regarding the same issue. El-Outa et al., asked 216 patients in dental clinics if they ever had EOE and found that 91% reported not having EOE (El-Outa et al., 2017). In a study done by Awojobi et al., 184 patients in dental clinics were asked when their most recent check took place; only 13% indicated that their chin or neck had never been examined (Awojobi et al., 2012). Johns SG conducted a study that was aimed to assess the perspective of dental patients towards EOE in Sandy, USA. The study included 61 participants, where 97% of patients stated that they never had an EOE (Johns, 2001). Although the previous studies had significantly less sample size than the presenting study, the results were comparable. In this study, 18.2% out of the total participant had their vital signs recorded, and the majority of vital signs recording were performed in governmental clinics. On the other hand, the recording of the vital signs was low in private clinics; only 12.2% of participants had their vital sings recorded. Similarly, in a study done by Al-sebaei et al., they questioned dental practitioners in 70 private practices that performed multiple dental specialties under only local anesthesia. They found that 11% of participants recorded vital signs for their patients, and 57% never recorded the vital signs (Al-sebaei et al., 2015). Another study done by Al-hassan et al was conducted to assess knowledge, dental staff preparedness in case of emergency, and the present of emergency drugs and equipment in dental clinics. The study included 325 dental practitioners in governmental and private clinics in Riyadh, Saudi Arabia. They found that 12% recorded vital signs for their patients, and 50% never recorded the vital signs (Al-hassan et al., 2018). Although the percentages are similar, the design of the two previous studies was different, and the sample size is smaller than the current study. The type of treatment was the only influencing factor found in this study for vital signs recording as 38% of participants who had tooth

extraction had their vital signs recorded before the procedure, which can be correlated to the possible postoperative complication associated with teeth extraction. On the other hand, only 5% of participants presented to the dental clinic for orthodontic treatment had their vital signs recorded. This can be related to the usually young age of patients who have orthodontic treatment and correlated with the age of participants responding to our questionnaire as 94. 5% of participants who had orthodontic treatment were below the age of 30. Lack of knowledge on the patients' side may contribute to lenience in requesting EOE and vital signs recording. There is an apparent lack of knowledge about Extra-oral examination, as only 10.9% of the total participants were aware of EOE. However, 38.1% of total patients responded that they think it is important and could lead to diagnose life-threatening diseases, which shows that participants are willing to have it done if they had the chance or had known about it. This can be further elaborated as 59.8% of total participants were interested and inclined to receive EOE from their dentist in their next visit. Similar to results founded in study done by El-Outa et al., where 62% of their participants were interested in having EOE (El-Outa, 2017). These results indicate a positive correlation between patient knowledge and attitude regarding the performance of extraoral examinations by their treating dentists.

The geographic location of the clinics in the city of Riyadh (North, south, east, or west) was not found to be a factor in the level of patients' awareness regarding the extra-oral examination. On the other hand, patients who had dental care in the south region of Riyadh were more interested in having EOE in their next appointment and believed that EOE's performance is one of their rights during their dental care.

5. CONCLUSION AND RECOMMENDATION

The extra-oral examination is considered an essential aspect of patient care and evaluation; however, it is not performed routinely as it should be. It was found in this study that the performance of the Extra-oral examination is significantly low in both governmental and private dental clinics. Moreover, there is a lack of patient's awareness about the Extra-oral examination. In conclusion, Extra-oral examination and vital signs recording should be done for every patient in every appointment, whether it was an initial visit to start treatment or during follow-ups for routine dental procedures. Awareness about the importance of Extra-oral examination in the dental field should be promoted for both dental practitioners and patients. Moreover, further research is needed to further investigate the clinical impact of EOE on the overall health of patients.

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Conflict of interest

The authors declare that they have no conflict of interest.

Informed consent

Written & Oral informed consent was obtained from all individual participants included in the study.

Ethical approval

The study was approved by institutional review board (IRB) of King Abdullah International Medical Research Center (KAIMRC). (Ethical approval code: SP19/004/R).

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