

Original Research Article

## Why Patients Miss Their Appointments – A Survey

Rohit Fernandez<sup>1\*</sup>, Yahya Sayed Suliman Atassi<sup>2</sup>, Khalid Zaki Fakiha<sup>2</sup>, Waleed Suhail Kalloub<sup>2</sup>, Mahdi Alsaileek<sup>2</sup>, Meshal Al Shammery<sup>2</sup>, Zakria Omar Al Yami<sup>2</sup> and Mujahed Barakahs<sup>2</sup>

<sup>1</sup>Assistant Professor, Department of Prosthodontics, Riyadh Elm University, P.O Box 84891, Saudi Arabia - 11681.

<sup>2</sup>Dental Interns, Riyadh Elm University, P.O Box 84891, Saudi Arabia - 11681.

Accepted, 30<sup>th</sup> June, 2018.

**Introduction:** Patient's missing their appointments is a problem all dental practitioners face and which can immensely affect the productivity of their work. Patients may report with a variety of reasons to explain their tardiness and hope for immunity. This study embarked upon the aim to ascertain what reasons a patient would prioritize over a dental visit. **Materials and Methods:** This study focused on patients visiting the University hospital at Riyadh, Kingdom of Saudi Arabia. A total of 477 complete questionnaires were analyzed. The survey consisted of questions pertaining to reasons that influenced patients to miss their appointments. **Results:** Among the participants, it was seen that the most significant reasons ( $p < 0.05$ ) for patients to miss their appointments were; the quality of treatment rendered, duration of appointments, satisfaction with clinic personnel, ease of communication with receptionist, accuracy of SMS reminders, unavailability of babysitters, personal health status and religious obligations. **Conclusions:** Patients considered being treated by a dental student under the guidance of an instructor to be very relevant in their decision to miss a dental appointment. Unavailability of Childcare showed to be one among the least important reasons to miss one's appointment. The Holy month of Ramadan or other religious obligations were not a major factor for missing appointments but mostly affected patients above the age of 36 years in the present study. Cost of treatment at the University was also not relevant to cause patients to miss their appointments. The long duration of treatment and lack of issuance of sick leave forms were considered important factors for those patients living outside Riyadh.

**Keywords:** Dental appointment, Dental Clinic, Tardy Patients, University hospitals, Dental student problems.

### INTRODUCTION

A dental treatment outcome is based a lot on an appointment schedule and adherence to it. Even more so for dental students, who are pushed for time to complete a required quota of treatment procedures by the end of each term. Many-a-time patients missing their appointments cause duress for dental students as this leads to delays for not only the patient in question but also other patients' treatment procedures. (AlBarakati, 2009).

Several studies have documented that youth and younger patients are more likely to miss their appointments. However, low-income and non-educated patients have a higher expected rate to miss their appointments. Several factors are associated with missed appointments, namely, Treatment quality, Long duration of procedures and appointments, Treatment cost, transportation, weather status, attitude of the practitioner, etc. (Almog DM et al., 2003)

In a well-established dental university clinic, appointment schedules are usually chock-a-block with the exceptional provision made to include emergency appointments at any

given time. These scheduled appointments depend upon the students' clinical sessions per week and the procedures involved per case. Usually, procedures are allotted as per the experience level of the students (AlBarakati, 2009).

There are various types of appointment-related issues that can be identified. They include failure to attend and cancellation of appointments. Several reasons tend to link with these problems faced by the administration of a dental setting. Patients with low socioeconomic backgrounds and education might be prone to such tardiness, which was also reported by Laloo R and McDonalds JM, 2013.

Various authors have mentioned the different means of communicating with the patient which also included text message reminders a day prior to an appointment (Hashim MJ et al., 2003).

It has been stated that patient satisfaction is mainly dependent on the skill of the practitioner and the easy approach with the receptionists (Litt IF and Cuskey WAR, 1984; Di Matteo NR et al., 1986).

In spite of all these preparations made to ease a patient's experience at the dental clinic, students are still faced with appointment cancellations and tardiness shown on the patient's behalf.

Certain studies have been conducted to determine the prevailing issue of appointments that patients miss regularly. It was noted in one of those investigations that the most common age group of patients that tend to miss their appointments is the pediatric group (Tandon S et al., 2016). Furthermore, the most common cause of missing appointments is seen to be the forgetfulness of patients. However, they return to receive treatment within three months of the missed appointment (Neal RD et al., 2005).

According to the policy of University clinics, when patients miss a series of appointments, their file would be blocked until they reappear. This, in turn, is a negative reinforcement for the patients to encourage them to attend upcoming appointments and not be tardy. (Parrish JM et al., 1986)

This research embarked upon the mission to gather information from patients themselves as to what the possible reasons they would choose or be forced to give priority to.

## MATERIALS AND METHODS

### Sample selection

This study focused on patients visiting the University hospital at Riyadh Colleges of Dentistry and Pharmacy, Riyadh, Saudi Arabia. A total of 500 questionnaires were filled-out over a time period of 4 weeks and 477 (95.4% response rate) completed questionnaires were collected and analyzed for this study.

The distribution of collected data was

- a. 377 were filled personally by the patient
- b. 54 were filled by the caregiver of the patient
- c. 46 were filled by calling the patient through the reception cellphone.

### Measurement

Participants were asked to complete a questionnaire, which was modified from a similar published study conducted in King Saud University, Riyadh, Saudi Arabia (AlBarakati, 2009).

A consent form and demographic information were included at the start of the survey. The survey consisted of questions relating to possible factors influencing patients' attendance to dental appointments, which could be classified under:

- Quality of treatment
- Duration of treatment
- Transportation
- Cost
- Attitude of the practitioner

The collected data were statistically analyzed using IBS SPSS statistic data Editor Version 22. Descriptive analysis was done. Multiple Mann-Whitney U tests with Bonferroni adjustment was used. The significance value was set at  $p < 0.05$ .

## RESULTS

There is a statistically significant difference in the responses recorded by various age groups. It can be noted from the table

that significant differences were observed when inquired the age groups about quality of treatment rendered ( $p$ -value 0.001), overall satisfaction with the clinic personnel ( $p$ -value 0.017), and unavailability of domestic child care supervision ( $p$ -value 0.003) and finally the patients who fast in Ramadhan ( $p$ -value: 0.032).

Furthermore, significant comparisons among students, unemployed and employed participants were observed when inquired about the quality of treatment rendered ( $p$ -value 0.001) and polite attitude of the practitioner ( $p$ -value: 0.005).

As far as the nationalities were concerned, significant differences were found when inquired about the treatment by dental students under academic supervision ( $p$ -value 0.026), overall satisfaction with the clinic personnel ( $p$ -value 0.003), fear for treatment ( $p$ -value 0.031) and the cost of treatment ( $p$ -value 0.015).

As far as the regions of residence were concerned, statistically significant comparisons were revealed when inquired about long duration of appointment being the reason of missing appointment ( $p$ -value 0.025), accuracy of SMS reminder (0.018), overall satisfaction with the clinic personnel ( $p$ -value 0.007), satisfaction of communication with the clinic reception ( $p$ -value 0.001) and sick leaves not granted to some patients ( $p$ -value 0.013).

Marital statuses of participants were also examined and compared with one another. It was noted that statistically significant findings were observed when inquired about the treatment by dental students under academic supervision ( $p$ -value 0.021), quality of treatment rendered ( $p$ -value 0.001), Polite attitude of the practitioner ( $p$ -value 0.007).

Finally, the participants were divided on the basis of their income, which revealed significant comparison when inquired about the quality of treatment rendered ( $p$ -value 0.002).

## DISCUSSION

The constant battle to complete one's case is often compounded by a patient's tardiness. Dental students in particular face the trauma of fighting with time to complete their requirements before the end of a term. To give credit to a patient, several reasons for missing their appointments may actually be genuine. This study aimed at ascertaining the more prevalent reasons that patients, visiting a Dental University in Riyadh, tended to prioritize over their dental appointments.

A population of 477 registered patients at Riyadh Colleges of Dentistry and Pharmacy were provided with a questionnaire to facilitate this study. A majority of the patients (60%) were Saudi nationals (Table 3) and the age prevalence of the studied population was mostly below 35 years (Table 1). Only 18.4% ( $n=88$ ) of the population lived in the vicinity of the hospital (Table 4). The majority of patients had incomes lower than 15000 SAR ( $n=363$ ) (Table 6).

When considering the age factor, it was seen that the common reasons for cancelling an appointment, were statistically significant for the quality of treatment rendered, satisfaction with clinic personnel, unavailability of babysitters, personal health status and religious obligations (Table 8). There are evidences that the missed-appointment related problems can be addressed utilizing technology in current times. One of these options include an SMS (short message service) reminder to the patients, or to call them and confirm their appointment (Storrs MJ et al., 2016; Free C et al., 2013; Gurol UI et al., 2013).

**Table 1 - Demographic Distribution of Participants Based on Age**

AGE	FREQUENCY	%
18 - 25 yrs	163	34.2
26 - 35 yrs	159	33.3
36 - 45 yrs	97	20.3
46 - 55 yrs	35	7.3
>= 56 yrs	23	4.8

**Table 2 - Demographic Distribution of Participants Based on Employment Status**

Employment status	FREQUENCY	%
Student	154	32.3
Unemployed	149	31.2
Employed	174	36.5

**Table 3 - Demographic Distribution of Participants Based on Nationality**

NATIONALITY	FREQUENCY	%
Saudi	290	60.8
Non-Saudi	187	39.2

**Table 4 - Demographic Distribution of Participants Based on Area of Residence**

AREA OF RESIDENCE	FREQUENCY	%
North of Riyadh	157	32.9
South of Riyadh	111	23.3
East of Riyadh	88	18.4
West of Riyadh	46	9.6
Center of Riyadh	62	13.0
Outside Riyadh	13	2.7

**Table 5 - Demographic Distribution of Participants Based on Marital Status**

MARITAL STATUS	FREQUENCY	%
Unmarried	208	43.6
Married	177	37.1
Divorced	68	14.3
Spouse Deceased	24	5.0

**Table 6 - Demographic Distribution of Participants Based on Income Level**

INCOME LEVEL	FREQUENCY	%
< 5000	198	41.5
5000 – 15000	165	34.6
15000 – 25000	43	9.0
25000 – 35000	27	5.7
> 35000	44	9.2

**Table 7 - Demographic Distribution of Participants Based on Means of Transportation**

TRANSPORTATION	FREQUENCY	%
Self-driven	273	57.2
Private Driver	109	22.9
Family Member	56	11.7
Public Transport	39	8.2

Table 8 - Ranking of Reasons Based on Age Groups

	Quality of the Treatment Rendered	Overall Satisfaction with the Clinic Personnel	Unavailability of Domestic Child Care Supervision	Health Status (Chronic Condition)	Fasting in Ramadhan / Religious Obligations
18 - 25 yrs	275.09	275.09	228.67	233.89	218.78
26 - 35 yrs	218.69	218.69	232.04	223.10	235.40
36 - 45 yrs	197.32	197.32	259.85	250.60	260.28
46 - 55 yrs	260.83	260.83	214.06	258.59	257.06
>= 56 yrs	266.24	266.24	310.37	306.43	289.98
p-value	0.001	0.017	0.003	0.187	0.032

Table 9 - Ranking of Reasons Based on Employment Status

	Treatment by Dental Students Under Academic Supervision	Quality of the Treatment Rendered	Polite Attitude of the Practitioner	Overall Satisfaction with the Clinic Personnel	Treatment Cost
Student	254.43	272.35	262.29	262.32	260.60
Unemployed	213.31	222.11	210.24	214.16	216.73
Employed	247.34	223.95	243.02	239.62	238.95
p-value	0.098	0.001	0.005	0.062	0.112

Table 10 - Ranking of Reasons Based on Nationality

	Treatment by Dental Students Under Academic Supervision	Quality of the Treatment Rendered	Overall Satisfaction with the Clinic Personnel	Fear of Treatment	Treatment Cost
Saudi	252.49	249.48	253.78	249.69	249.79
Non-Saudi	218.07	222.75	216.07	222.42	222.26
p-value	0.026	0.088	0.003	0.031	0.015

Table 11 - Ranking of Reasons Based on Area of Residence

	Long Duration of Appointments	Accuracy of SMS reminder	Polite Attitude of the Practitioner	Overall Satisfaction with the Clinic Personnel	Satisfaction of Communication with the Clinic Reception	Sick Leave not Granted
North of Riyadh	249.65	270.52	265.14	271.84	270.81	223.41
South of Riyadh	215.78	222.42	213.42	205.93	219.79	256.76
East of Riyadh	215.55	210.63	231.74	221.11	208.35	233.48
West of Riyadh	269.39	225.75	222.87	227.73	238.63	199.22
Center of Riyadh	256.38	237.25	244.23	239.79	233.69	267.39
Outside Riyadh	277.04	247.19	223.04	281.92	253.00	318.38
p-value	0.025	0.018	0.135	0.007	0.001	0.013

Table 12 - Ranking of Reasons Based on Marital Status

	Treatment by Dental Students Under Academic Supervision	Quality of the Treatment Rendered	Polite Attitude of the Practitioner	Overall Satisfaction with the Clinic Personnel
Unmarried	248.30	261.90	251.78	248.43
Married	235.27	237.08	249.36	248.87
Divorced	244.74	195.00	192.68	201.51
Spouse Deceased	169.67	179.35	183.08	190.73
p-value	0.021	0.001	0.007	0.75

Table 13 - Ranking of Reasons Based on Income Level

	Quality of the Treatment Rendered	Long Duration of Appointments
< 5000	260.81	244.37
5000 – 15000	233.49	251.82
15000 – 25000	224.35	197.94
25000 – 35000	225.63	249.37
> 35000	184.01	200.55
p-value	0.002	0.149

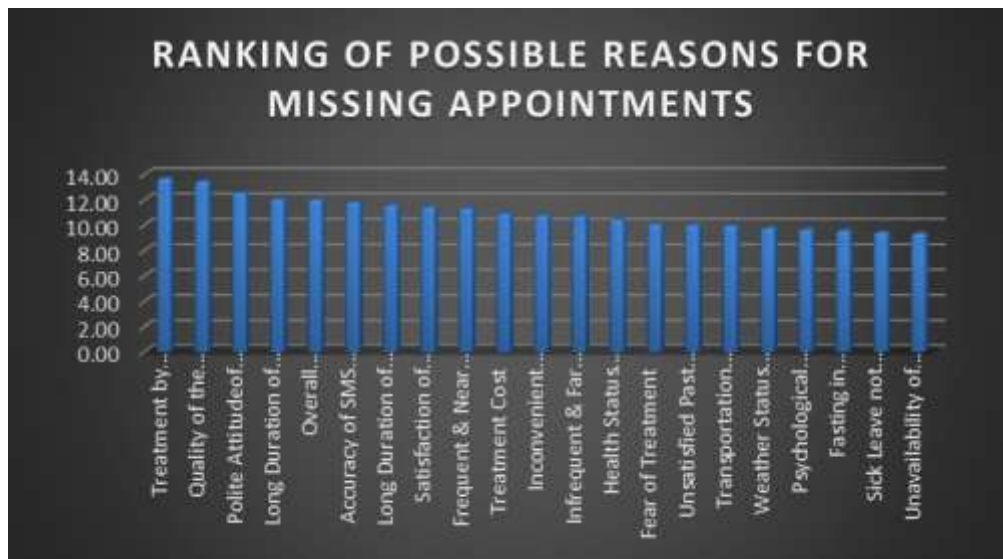


Figure 1 - Overall Ranking of Possible Reasons for Missing Appointments

The overall ranking of all the reasons for cancelling an appointment showed that most patients considered being treated by dental students under the guidance of an instructor to be very relevant (Figure 1). This was partially in conflict with a study that stated that certain patients were comfortable with students treating them as long as there was an instructor in the equation, while others opposed it (AlBarakati, 2009).

The quality of treatment rendered came second in line where it was seen that the studied Saudi population considered this to be more relevant than non-Saudis (Table 10). Patients below the age of 25 and above the age of 46 tended to give more importance to the quality of treatment

rendered to them and how the clinic personnel treated them (Table 8).

Fasting during Ramadan was seen to be the third least important reason among this study population (Figure 1). It was worthy of noting that religious obligations and fasting during Ramadan, though not ranked high, still played a bigger role in ages over 36 years and especially for those above 56 years of age (Table 8). This was in conflict with a similar study conducted, wherein it was stated that the most common reason for broken appointments was during the Holy month of Ramadan (AlBarakati, 2009).

Treatment costs were not considered too high or disregarded totally while considering cancelling appointments by our study population (Figure 1). This could possibly arise from the fact that the costs at the University were subsidized as compared to private clinics in and around Riyadh. This was in concurrence with a similar study wherein they stated that as universities subsidize the cost of treatment and this isn't a relevant factor (AlBarakati, 2009).

The unavailability of child care was not given a high rank in the scale of reasons (Figure 1). This was possibly due to the presence of housemaids. This was in conflict with a similar study where it was stated that finding childcare during the appointment time was often difficult (AlBarakati, 2009).

The area of residence played an important role in our study (Figure 1), wherein it was seen that patients coming from outside Riyadh, tended to give more weightage to long duration of appointments and also the fact that the issuance of a sick leave played an important role (Table 11).

One of the important remedies to tackle this issue is the process of reminding patients about their appointments (Liu Q et al., 2014; Perron NJ et al., 2010). This was also suggested by Crutchfield and Kistler, 2017 when they revealed the efficacy of reminders as far as patient call-up was concerned. However, there is a need to test these reminder systems so that their effectiveness could be measured and reported.

## CONCLUSIONS

Within the limitations of this study, we were able to conclude that:

1. Patients considered being treated by a dental student under the guidance of an instructor to be very relevant in their decision to miss a dental appointment.
2. Unavailability of Childcare showed to be one among the least important reasons to miss one's appointment.
3. The Holy month of Ramadan was among the least important factors for missing an appointment and mostly affected those above the age of 36 years.
4. Cost of treatment in a University setup was not relevant to cause a patient to miss their appointment.
5. Long duration of treatment and lack of issuance of sick leave forms were considered important factors for those patients living outside Riyadh.

## CONFLICTS OF INTEREST

We do hereby declare that the manuscript of the research submitted, titled 'Why patients miss their appointments – A Survey' has no conflict of interest with any organization or material manufacturer. It has also no conflict of interest with private clinics, Governmental dental establishments or other academic institutions. We have obtained consent from the participants to analyze and publish any data that is found relevant from the survey. An Institution Review Board clearance was obtained from the Riyadh Elm University with an IRB number RC/IRB/2018/1032. This manuscript is currently not submitted to any other journal in consideration for publication. All the authors have read and approved the manuscript being submitted.

## REFERENCES

1. AlBarakati SF (2009). Appointments Failure Among Female Patients at a Dental School Clinic in Saudi Arabia J Dent Educ. 73:1118-1124.
2. Almog DM, Devries JA, Borrelli JA, Kopycka-Kedzi-erawski DT (2003). The reduction of broken appointment rates through an automated appointment confirmation system. J Dent Educ. 67(9):1016-22.
3. Di Matteo NR, Hays RD, Prince LM (1986). Relationship of physicians' non-verbal communication skills to patient satisfaction, appointment non-compliance, and physician workload. Health Psychol. 5(6):581-94.
4. Free C, Phillips G, Watson L, Galli L, Felix L, Edwards P, Patel V, Haines A (2013). The effectiveness of mobile-health technologies to improve health care service delivery processes: a systemic review and meta-analysis. PLoS Med. 10(1).
5. Gurol UI, de Jongh T, Vodopivec JV, Atun R, Car J (2013). Mobile phone messaging reminders for attendance at healthcare appointments. Cochrane Database Syst Rev. 12.
6. Hashim MJ, Franks P, Fiscella K (2001). Effectiveness of tele-phone reminders in improving rate of appointments kept at an outpatient clinic: a randomized controlled trial. J Am Board FamPract. 14:193-6.
7. Laloo R, McDonalds JM (2013). Appointment attendance at a remote rural dental training facility in Australia. BMC Oral Health. 13: 36.
8. Litt IF, Cuskey WAR (1984). Satisfaction with health care: a predictor of adolescent appointment keeping. J Adolesc Health Care. 5(3):196-200.
9. Liu Q, Abba K, Alejendria MM, Sinclair D, Balanag VM, Lansang MA (2014). Reminder systems to improve patient adherence to tuberculosis clinic appointments for diagnosis and treatment. Cochrane Database Syst Rev. 11.
10. Neal RD, Hussain MG, Allgar VL, Lawlor DA, Dempsey O (2005). Reasons for and consequences of missed appointments in general practice in the UK: questionnaire survey and prospective review of medical records. BMC Fam Pract. 6; 47.
11. Parrish JM, Charlop MH, Fenton LR (1986). Use of a stated waiting list contingency and reward opportunity to increase appointment keeping in an outpatient pediatric psychology clinic. J Pediatr Psychol. 11(1):81-9.
12. Perron NJ, Dao MD, Kossovsky MP, Miserez V, Chuard C, Calmy A, Gaspoz JM (2010). Reduction of missed appointments at an urban primary care clinic: a randomized controlled study. BMC Fam Pract. 11: 79.
13. Storrs MJ, Ramov HM, Laloo R (2016). An investigation into patient non-attendance and use of a short message reminder system at a university dental clinic. J Dent Educ. 80(1): 30-39.
14. Tandon S, Duhan R, Sharma M, Vasudeva S (2016). Between the cup and the lip: Missed dental appointments. J Clin Diagn Res. 10(5): 122-124.