

# An analysis of causes behind missed scheduled appointments at outpatient ENT clinics

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## Objectives

To investigate missed appointments in Alhada Armed Forces hospitals (Prince Mansour hospital).

## Study Design

Prospective, descriptive series.

## Setting

ENT out-patients clinics.

## Method

Analysis of the clinic attendance statistics to identify patients who missed appointments.

## Results

Of 1275 patient booking over the duration of study, (60.30%) of patients kept their appointments at the clinics, while 40.70% missed appointments, and of the 519 patients, 16(3%) had no response to telephone calls or coming back to clinics. The youngest age group, 10 to 20 years, showed the highest rate of missed appointments, being 26.2%. Afternoon appointments had higher rate of no-show (63.5%) than morning (36.5%). Reasons given by no-show patients for missing their appointments are presented in figure (1). Unavailability of transportation constituted the highest proportion of reasons of no-show (26.4%) followed by forgetting the appointments (13.7%). The third frequently cited reason was work commitments (13.3 %). These three reasons represented of the (53.6%) of the total reasons of the no-show.

## Conclusion

The 40.70% missed appointment rate is largely due to transport constraints. The authors seek to identify patients at risk of missed appointments and suggest interventions to decrease this incidence.

## Keywords:

appointments, transport, follow-up

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## Introduction

Missed appointments are known to interfere with appropriate care of acute and chronic health conditions and with optimum utilization of facilities [1].

A study conducted in the USA (2005) revealed that missed appointment was the most significant factor related to treatment failure [2]. Furthermore, it deprives other patients of earlier appointments, which affect other patients' quality of care. Economically, missed appointments have significant impacts on the ability to provide efficient and effective outpatient services. It results in wasting financial and social costs [3–5]. In the UK, the incidence of nonarrival at surgical and medical clinics ranges between 10 and 30%, with a mean of 12% [6]. Reasons given for missing a medical appointment have been widely analyzed and include factors such as forgetfulness, feeling better or worse, transportation problems, and misunderstanding/confusion about the time of consultation [7–10]. Several interventions have been tested to reduce the

rate of missed appointments. Telephonic reminders are effective and give patients the opportunity to cancel or postpone their appointment [11–13]. Postal reminders are effective to a lesser extent, and their effect tends to decrease with time [14]. The use of short message service (SMS) improves attendance [15]. More recently, randomized controlled studies comparing SMS, phone calls, and no intervention showed that SMS and phone calls were equally effective in reducing the rate of missed appointments, with SMS being more cost-effective [16,17]. With an effort to improve the efficiency and quality of services offered at the study hospital, the present study aimed at quantifying the burden of missed appointments and revealing the factors associated with it. Methods of improving the efficiency of the service we offer are considered.

## Patients and methods

This study included all patients who missed their follow-up appointments at the ENT outpatient clinic

in Prince Mansour Hospital over a period of four consecutive months from June to September 2013. A list of patients who attended and those who missed their follow-up appointment was obtained. The files of those patients who missed their appointment were reviewed, and all available contact details were noted, along with the patients' demographic information. Patients were interviewed telephonically or, failing that, personally when they returned after being contacted by the clinic or referred back from other clinics. The study participants, after giving informed consent, completed an anonymous form, which included the following: general demographics, diagnosis, treatment type, duration of treatment, experience of treatment, follow-up time, reasons for missing the appointment, and open-ended questions on methods to improve service delivery. Patients could provide more than one reason. New dates for follow-up visits were also arranged at the interview.

**Ethical approval**

This study received ethical approval from the Ministry of Defense and Aviation, Medical Services Department, Armed Forces Hospitals, Taif Region, and Academic affair administrations.

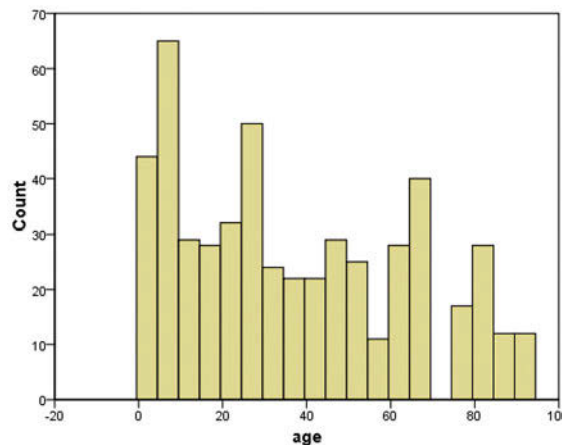
**Results**

Of the 1275 patients who had taken an appointment over the duration of the study, 60.30% kept their appointments at the clinic, whereas 40.70% missed appointments. Of the 519 patients who missed appointments, 16 (3%) did not respond to telephone calls, nor did they return to clinics. The youngest age group (10–20 years) (Fig. 1) showed the highest rate of missed appointments (26.2%). Afternoon appointments had a higher rate of no-show (63.5%) compared with morning ones (36.5%). Reasons given by the no-show patients for missing their appointments are presented in Fig. 1. Unavailability of transportation constituted the highest proportion of reasons of no-show (26.4%), followed by forgetting the appointments (13.7%). The third frequently cited reason was work commitments (13.3%). These three reasons represented 53.6% of the total reasons of the no-show (Table 1).

**Discussion**

We found a rate of 40.7% for missed appointments, whereas few comparative rates are reported in the literature. Our proportion of global missed appointments is higher than the 20% found by

**Figure 1**



Age distributions of patients with missed appointment.

**Table 1 Reasons behind missed appointment**

Reasons	Frequency (%)	Valid percent	Cumulative percent
Transportation	137 (26.3)	26.4	26.4
Patient forgets	69 (13.3)	13.3	39.8
Administrative error	32 (6.2)	6.2	45.9
Patient felt the clinic not important	52 (10.0)	10.0	56.0
Patient felt better	26 (5.0)	5.0	61.0
Patient work shifted to other area	31 (6.0)	6.0	67.0
Others	34 (6.5)	6.6	73.6
Family matter	42 (8.1)	8.1	81.7
Other appointments	24 (4.6)	4.6	86.3
Work commitments	71 (13.7)	13.7	100.0
<b>Total</b>	<b>518 (99.6)</b>	<b>100.0</b>	

Sawyer *et al.* [16], the 38% found by Freed *et al.* [18], and the 18% found by Irwin *et al.* [22] reported for both first and follow-up appointments [15]. Our relatively higher rate may be attributable to the fact that our hospital is unique, in that patients need to fulfill eligibility criteria to avail of our services. Age is factor influencing missed appointments P (0.038). This finding is in agreement with that reported in the literature. Young adults are more likely to miss appointments compared with adolescents [1,7], and possibly parents of older patients are less implicated in their adolescents' visits. The high rates of missed appointments during the afternoon period can be related to the appointment interfering with school and work commitments. These observations match those of Irwin *et al.* [19–21]. Unavailability of transportation, work commitment, forgetting the appointment, and long-distance travel were found

to be the most commonly cited reasons for missing appointments at the study hospital. Transportation-related reasons were found to be one of the leading causes of missed appointments worldwide (3, 8, 9, 11, 15), especially in Saudi Arabia [4]. Restricted transportation of women in Saudi Arabia and lack of public transportation facility may have increased the relative importance of transportation as a cause of missing outpatient appointments. The second concern was work commitments; this is unique to our hospital as the majority of our patients are military personnel and making arrangements for appointments is a challenge. Clinical factors as well as other explored relevant factors such as patient satisfaction with services and medication usage were not found to be statistically significant in logistic regression analysis. However, other studies reported significant effect of these variables on missed appointments (2, 3, 6, 10, and 15). This signifies the importance of studying local factors associated with missed appointment to design interventions that are tailored to ameliorate the effects of relevant factors.

### Conclusion and recommendations

The study revealed a high rate of missed appointment at the study hospital. Rates of missed appointments vary with patient's characteristics and time and month of appointment. The main reasons given by patients for no-show were unavailability of transportation means, work commitment, and forgetting the appointment. Further investigations are needed to study the problem of missed appointments at ENT clinics as well as at clinics that show an extremely high rate of missed appointments. Furthermore, the authors suggest the following interventions to limit the prevalence of nonattendance:

- (1) Identifying patients at risk at the first visit by discussing the potential for missed appointments and placing emphasis on obtaining patient contact details and systems of pursuit.
- (2) Providing hospital contact details and methods of contacting the clinic so that the patient can either reschedule a future appointment or get a new date after a missed appointment.
- (3) A booking notification system whereby all patients who miss an appointment are brought into focus and contacted by the clinic.
- (4) Transport facility evaluation and improvement by the Health Department.

### Acknowledgements

#### Conflicts of interest

None declared.

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